

# Environmental Assessment and Review Framework

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## **Grant 0242-LAO: Greater Mekong Subregion Biodiversity Conservation Corridors Project, including the Additional Financing from the Forest Investment Program**

Prepared by Ministry of Natural Resources and Environment, Department of Forest Resource Management, Lao PDR for the Asian Development Bank. This is an updated version of the draft originally posted in August 2014 available on <http://www.adb.org/projects/40253-036/main>



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## ABBREVIATIONS

ADB	Asian Development Bank
BCC	Biodiversity Conservation Corridor
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
GMS	Greater Mekong Subregion
GOL	Government of Lao PDR
IEE	Initial Environmental Examination
MONRE	Ministry of Natural Resources and Environment
NTFP	Non-timber forest product
PES	Payment for Ecosystem Services
PPTA	Project Preparation Technical Assistance
PONRE	Provincial Office of Natural Resources and Environment
PSC	Provincial Steering Committee
REDD+	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries

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## I. INTRODUCTION

### A. The Baseline Biodiversity Conservation Corridor (BCC) Project

1. The Greater Mekong Subregion (GMS) Biodiversity Conservation Corridors (BCC) Project covers three countries: Cambodia, Lao PDR and Viet Nam. The long-term impact of the Project is to achieve climate resilient sustainable forest ecosystems benefiting local livelihoods. The Project outcome is sustainably managed biodiversity corridors. The Project has four outputs: (i) institutions and communities strengthened for biodiversity corridor management; (ii) biodiversity corridors restored, protected and maintained; (iii) livelihood improvement and small-scale infrastructure support; and (iv) project management and support services provided.

2. A Grant Agreement of \$20.0 million was signed between the Government of Lao PDR (GOL) and the Asian Development Bank (ADB) on 14 February 2011 to implement the GMS BCC Project in Lao PDR (hereinafter referred to as the BCC Project) over a nine-year period (2011–2019) to protect and sustain agricultural and forest ecosystems. The Grant became effective on 11 April 2011. The BCC Project covers 67 villages in 5 districts across Attapeu, Champasak and Sekong provinces in Southern Lao PDR with a total population of approximately 27,377 (2009) consisting of over 4,700 households.<sup>1</sup>

3. The BCC Project will restore connectivity in the biodiversity conservation corridors by targeted reforestation, enrichment planting, gap filling and natural regeneration. It will also support the livelihoods of the population living inside the corridors through support provision of small-scale infrastructure, the creation of Village Development Funds (VDFs), and village scale livelihood activities.

### B. Additional Financing from the Forest Investment Program to the BCC Project

4. The additional financing estimated at \$12.84 million, is to be funded under the Forest Investment Program (FIP) for the Lao PDR. The additional financing (hereinafter referred to as AF) will enhance the climate resilience and reduce carbon emissions from deforestation and forest degradation in Lao PDR.

5. The AF will finance a range of measures in support of: (i) reducing carbon emissions from reducing deforestation and forest degradation (REDD+); (ii) maintaining carbon reservoirs by improving forestry conservation activities to help avoid emissions (such as fire management); (iii) increasing carbon sequestration by enhancing forest cover; and (iv) building capacity by improving awareness and knowledge among stakeholders. These activities will complement the BCC Project's efforts to improve biodiversity conservation within the corridor and connectivity between National Protected Areas and other protection and production forest areas.

6. Both the BCC Project and the AF address the mitigation of forest degradation and aim to work with communities to diminish the areas under rotational farming (swiddens) by supporting more intensive land use and alternative cropping patterns. The AF will strengthen the BCC Project through the incorporation of REDD+ pilot activities within the overall project framework. While the BCC Project covers 67 villages in five districts, the FIP program area will cover an additional 21 villages.

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<sup>1</sup> The number of villages has been reduced from 69 to 67 during the midterm review due to Government's policy to combine smaller villages.

7. The BCC Project as well as the AF utilize a sector approach to the identification of these activities, and subprojects will be identified during project implementation. This Environmental Assessment and Review Framework (EARF) provides a framework for the environmental assessment of proposed subprojects, environmental monitoring during subproject implementation, and environmental progress reporting under both the BCC Project and the FIP additional financing.

## II. ADB ENVIRONMENTAL ASSESSMENT PROCEDURES

8. The ADB's Safeguard Policy Statement (SPS) 2009 governs the environmental and social safeguards of ADB's operations. Environmental Safeguard Requirements 1 (ESR1) of the SPS outlines the requirements that borrowers/clients are required to meet when delivering environmental safeguards for projects supported by ADB. These requirements include assessing impacts, planning and managing impact mitigations, preparing environmental assessment reports, disclosing information and undertaking consultation, establishing a grievance redress mechanism (GRM), and monitoring and reporting. ESR1 also includes specific environmental safeguard requirements pertaining to biodiversity conservation and sustainable management of natural resources, pollution prevention and abatement, occupational and community health and safety, and conservation of physical cultural resources (PCRs).

9. At an early stage in the project cycle (typically the project identification stage) the subprojects are screened and categorized based on the significance of potential subproject impacts and risks. A subproject's environment category is determined by the category of its most environmentally sensitive component. Project screening and categorization are undertaken to:

- (i) reflect the significance of the subproject's potential environmental impacts;
- (ii) identify the type and level of environmental assessment and institutional resources required for the safeguard measures proportionate to the nature, scale, magnitude and sensitivity of the proposed subproject's potential impacts;<sup>2</sup> and
- (iii) determine consultation and disclosure requirements.

10. According to ADB's SPS 2009, a proposed project is assigned to one of the following categories:

- (i) **Category A.** Proposed project is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented; impacts may affect an area larger than the sites or facilities subject to physical works. A full-scale environmental impact assessment (EIA) including an environmental management plan (EMP), is required.
- (ii) **Category B.** Proposed project's potential environmental impacts are less adverse and fewer in number than those of category A projects; impacts are site-specific, few if any of them are irreversible, and impacts can be readily addressed through mitigation measures. An initial environmental examination (IEE), including an EMP, is required.

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<sup>2</sup> 'Type' refers to strategic environmental assessment (SEA), project environmental assessment, or compliance audit; 'Level' refers to a full environmental impact assessment for Category A projects, and an initial environmental examination for Category B projects.

- (iii) **Category C.** Proposed project is likely to have minimal or no adverse environmental impacts. No EIA or IEE is required although environmental implications need to be reviewed.
- (iv) **Category FI.** Proposed project involves the investment of ADB funds to, or through, a financial intermediary. (This category is not relevant to the BCC Project).

11. The BCC Project has been categorized as category B for environment. An IEE report was prepared in 2010 in compliance with the requirements of the ADB SPS 2009<sup>3</sup> and approved as part of the BCC Project. The IEE determined that the BCC Project would generate overwhelmingly positive environmental impacts. Biodiversity conservation in the Project area is of global significance and the BCC Project will support several critically endangered species through the conservation and restoration of habitats essential to their survival. However, some of the BCC Project activities have a potential for generating localized, manageable negative environmental impacts. These include proposed livelihood improvement activities and investments in small-scale infrastructure.

12. As noted above, both the BCC as well as the AF are using a sector approach and will identify subprojects during project implementation. This approach requires the development of an EARF to guide the screening, categorization and environmental assessment of proposed subprojects in compliance with ADB and GOL requirements. This EARF was first prepared in 2010 as part of the approved BCC Project documents, revised and updated in September 2012 during the inception phase of the BCC Project, and revised and updated again in August 2014 to include the scope of the AF. An EARF is a “living” document, and will be updated during implementation as required.

### III. LAO PDR ENVIRONMENTAL ASSESSMENT PROCEDURES

13. The Law on Environmental Protection (LEP) of 3 April 1999 regulates the protection of the environment in Lao PDR.<sup>4</sup> The Decree on Environmental Impact Assessment details and guides environmental impact assessment.<sup>5</sup> Decision No. 697/PMO.WREA of 12 March 2010 provides a screening list (Table 1) for determining which projects are subject to conducting either an Initial Environmental Examination (IEE) or a full Environmental Impact Assessment (EIA) according to the modalities and procedures described in the LEP and the subsequent decrees detailing some aspects of its application. The IEE of the baseline BCC Project as well as the Rapid Environmental Assessment (REA) Checklist conducted under the AF determined that neither the Project as a whole, nor any of the activities proposed by the Project at that time, were subject to conducting an IEE or EIA based on the stipulations of Decision No. 697/PMO.WREA. However, the screening list from Decision No. 697/PMO.WREA presented in the IEE was incomplete, and it is possible that rural road subprojects under the BCC may require an EIA (see Table 1). All subprojects proposed under the Project will be screened for triggers, and if necessary the Project will prepare an assessment accordingly and obtain an environmental compliance certificate from the Ministry of Natural Resources and Environment (MONRE).<sup>6</sup>

<sup>3</sup> ADB 2010. *Technical Assistance for Greater Mekong Subregion Biodiversity Conservation Corridors. (RETA 7459). Lao PDR - Champasak, Xekong and Attapeu. Initial Environmental Examination.* 7 September 2010.

<sup>4</sup> No. 02/99/NA.

<sup>5</sup> Decree No. 112/PM of 16 February 2010.

<sup>6</sup> MONRE was established in June 2011 by merging the Water Resource and Environment Administration (WREA) with parts of the National Land Management Authority (NLMA) and the Geology Department, as well as the Protection and Conservation Divisions of the Department of Forestry.

**Table 1: Projects by Sector and IEE and EIA Thresholds, Decision No. 697/PMO.WREA**

Type of Investment Project <sup>1</sup>	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)
<b>I. Development Projects: energy sector</b>		
Hydropower plants	<15 MW or water capacity <200,000,000 m <sup>3</sup> dam area <1,500 ha	>15 MW or water capacity >200,000,000 m <sup>3</sup> dam area >1,500 ha
Natural gas power plants	5-50 MW	>50 MW
High voltage transmission line ≥ 230 kV	≤ 50 km	>50 km
High voltage transmission line < 230 kV	All	If TL passes through a forest conservation area or community
<b>II. Investment Projects: agriculture and forestry sector</b>		
Industrial tree plantations	20-300 ha	>300 ha
Industrial crop plantations	20-500 ha	>500 ha
Irrigation project	100-2000 ha	>2000 ha
Animal husbandry: cow, buffalo, horse, other	≥ 1000 animals	
Animal husbandry: pigs	≥ 200 pigs	
Aquaculture ponds	≥ 10 ha	
Freshwater net aquaculture	≥ 300 m <sup>2</sup>	
<b>III. Investment Projects: industrial processing sector</b>		
Chemicals production plants		All
Non-metallic mineral production plants		All
Wood, rattan, straw and other processing factories	All	
Potable water factory	All	
<b>IV. Investment Projects: infrastructure and services sector</b>		
Industrial zone construction and Development	-	All
Telecommunications network construction	All	
Sewer drainage system	All	
Waste water treatment plant (city, hospital and industrial processing plants)		All
New roads through forestry zones (conservation, protection and production forests) and biodiversity zones		All
New national, district, rural <sup>2</sup> and special roads		All
National, district, rural and special roads improvement and rehabilitation	All	
Hospitals	≤ 100 beds	≥100 beds
Tourism developments in National Parks		All
Community waste disposal areas	≤ 50 ha	50 ha≥
Hazardous materials waste disposal areas		All
Industrial hazardous materials waste disposal areas		All
<b>V. Investment Projects: minerals/ore sector</b>		
Minerals, mining projects (non-chemical)		All
Minerals, mining projects (using chemicals)		All
Oil and gas drilling projects		All

Notes:

1. This table presents a select list of project activities in Decision No. 697/PMO.WREA.
2. Although new rural roads are listed under Category 2, according to Mr. Somevang (Head of Environment and Social Impact Assessment, Infrastructure Development Section, MONRE), small rural connector road projects are typically classified as Category 1 requiring the preparation of an IEE. Once a subproject concept has been prepared, the Department will assist in screening and categorization of the subproject to determine if it is Category 1 or 2.

## IV. SUBPROJECTS

### A. Subprojects under the BCC Project

14. The BCC Project will identify key fragmentation points in the landscape and restore connectivity in the biodiversity conservation corridors by targeted reforestation, enrichment planting, gap filling and natural regeneration, or a combination thereof. Specifically, it will maintain and consolidate forest ecosystem connectivity between Xe Xap National Protected Area (NPA) in Sekong with the Dong Ampham NPA in Attapeu, and the Xepian and Dong Hua Sao NPAs in Champasak. The forestry activities within geographic regions, most likely districts, will form subprojects. The Project will also support the livelihoods of the population living inside the corridors based on pilot activities of the GMS Biodiversity Conservation Corridor Initiative Phase I that proved successful and further explore additional, new or innovative approaches to livelihoods improvement. Livelihoods will further be supported by investments in small-scale infrastructure such as water and sanitation infrastructure, processing facilities, rural link or feeder roads providing access to e.g. main roads, markets and ecotourism sites. Each of these activities that can be undertaken by the Project, or a coherent group of such activities, can constitute a subproject.

15. The BCC Project will also support the livelihoods of the population living inside the corridors through support to a total of 67 villages:

- (i) Small-scale Infrastructure - investments in small-scale infrastructure in sectors such as water and sanitation (community water supplies, household sanitation), buildings and facilities (processing facilities), and other infrastructures that would contribute to the objection of enhanced biodiversity conservation by reducing threats to forests. A total of \$100,000 will be available for each village. The sum of sector activities within a geographic region, again most likely a district, will constitute a subproject.
- (ii) Village Scale Livelihoods - this will be targeted at larger-scale livelihood support activities. Examples might include understory planting of income-generating crops in an agroforestry context, or a larger fish pond.

### B. Subprojects under the AF

16. The EARF will also apply to all AF activities (subprojects) that have a potential for negative impacts on the environment. While the BCC Project covers 67 villages in five districts, the FIP area will cover 21 additional villages. The aim of the AF is to pilot new approaches to conserving biodiversity and reducing emissions from deforestation and forest degradation, and specifically: (i) promoting CO<sub>2</sub> emission mitigation efforts, including protection of forest ecosystem services; (ii) supporting measures outside the forest sector to reduce pressure on forests; (iii) strengthening institutional capacity, forest governance, and forest-related knowledge; and (iv) mainstream climate resilience considerations and contribute to biodiversity conservation, protection of the rights of indigenous peoples and local communities, and poverty reduction through rural livelihoods enhancements.

17. While these objectives clearly align with the four key outputs of the BCC Project, AF activities will focus on: avoiding emissions from deforestation and degradation; conservation of carbon stocks through forest protection and sustainable forest management; and enhancement of carbon stocks through reforestation and restoration, all of which are consistent with the BCC

project outputs.

18. The key activities to be undertaken under the AF include:

- a. **Output 1: Institutional and Community Strengthening for Biodiversity Conservation Corridors Management and Implementation of REDD+:** Under output 1, the AF will complement: (i) strengthening corridor & land use planning; (ii) integrated forest restoration and village investment planning; (iii) institutional capacity building and training; and (iv) community engagement & participation. AF will also support construction of new buildings for the District Offices of Natural Resources and Environment (DONRE) in Phouvong District in Attapeu Province and Dakcheung District in Sekong Province.
- b. **Output 2: Biodiversity Corridor Restoration, Protection, Maintenance and REDD+ Readiness:** Under output 2, AF activities will focus on: (i) forest protection and law enforcement; (ii) forest restoration & reforestation; (iii) validation, verification, and registration of carbon credits; and (iv) benefit sharing through payment for ecosystem services (PES). Specifically AF investments will target forest restoration, assisted natural forest restoration and enrichment planting, agroforestry and non-timber forest product (NTFP) production for livelihood enhancement and a similar area of former forest land with insufficient tree cover to regenerate restoration through indigenous species planting.
- c. **Output 3: Livelihoods Improvement and Small-scale Infrastructure Support:** FIP additional financing program for output 3 will focus on: (i) improving traditional subsistence agricultural practices; (ii) developing alternative agroforestry and forestry-pasture systems livelihood systems; (iii) promotion and cultivation of special cash crops and market development; and (iv) diversification of forest products for charcoal production.
- d. **Output 4: Project Management and Support Services:** AF will support scaling up efforts to strengthen national, provincial and district level capacity, including: strengthening the capacity of the national project management office (NPMO) through new staff positions; strengthening of provincial project offices (PPMOs) in Sekong and Attapeu provinces and district Coordination Offices (DCOs) in Phouvong and Dakcheung districts respectively; and specific initiatives to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

19. Overall, it is expected that the AF will generate overwhelmingly positive environmental impacts while some of the proposed AF activities may have minor potential for generating localized, manageable negative environmental impacts.

## V. SUBPROJECTS TO BE ASSESSED UNDER THE EARF

20. The EARF applies to all subprojects under the BCC Project and AF that have a potential for negative impacts on the environment. These include: (i) construction of office building for DONRE (output 1); (ii) forestry activities for landscape connectivity (output 2); (iii) livelihood improvement activities (output 3); and (iv) investments in small-scale infrastructure (output 3). The forestry and livelihoods improvement activities will be implemented by service contractors

and monitored by the Executing Agency through three PPMOs and their implementing partners.

## **VI. SUBPROJECT ENVIRONMENTAL ASSESSMENT PROCESS**

21. The subproject environmental assessment process includes subproject concept identification; screening and categorization; and preparation, review, revision and approval of the subproject environmental assessment. The process is conceptualized in Figure 1.

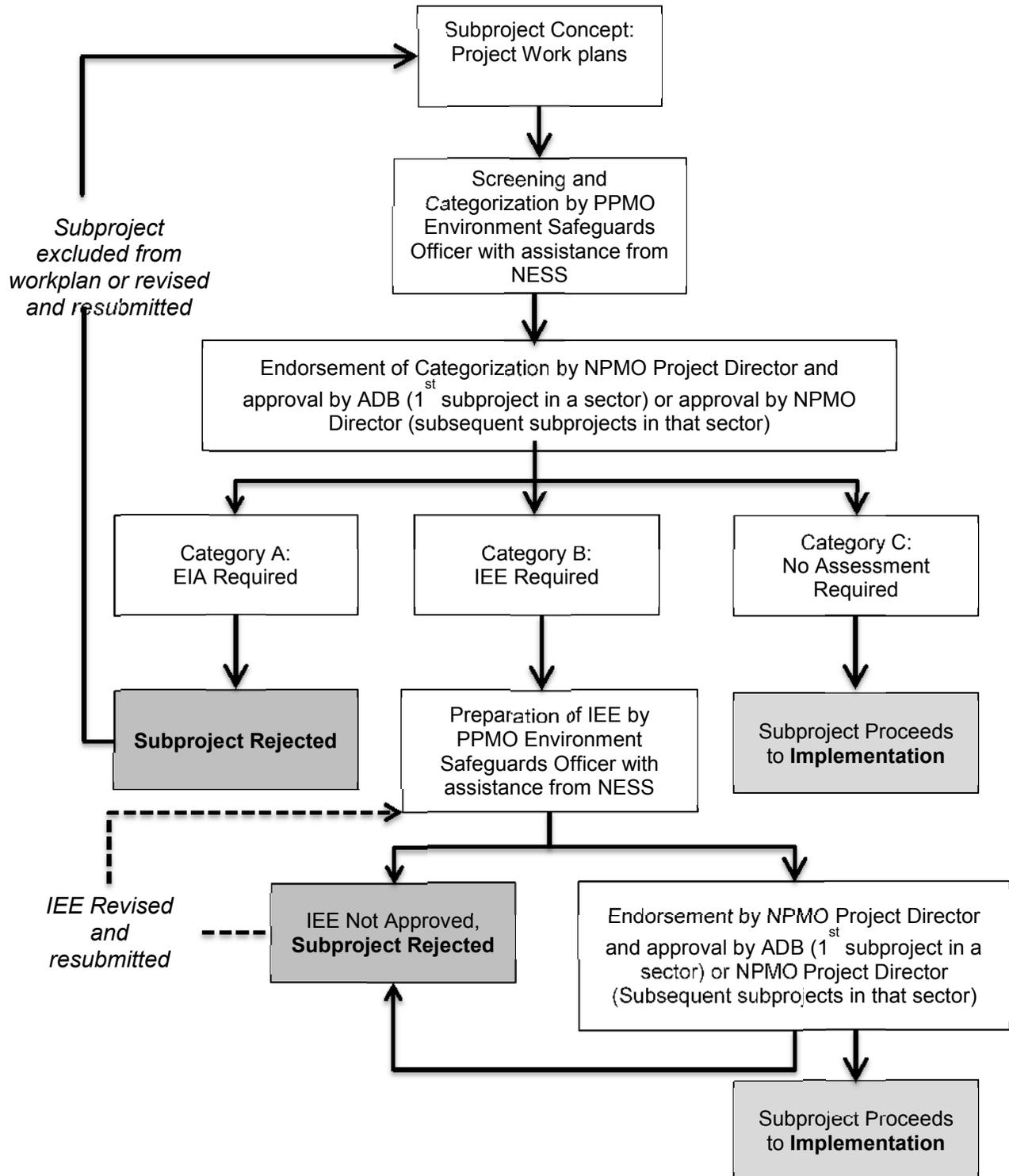
### **A. Subproject Concept**

22. Proposed subprojects will be presented in a Project work plan that is finalized during the project inception phase and further updated at least annually. While it is expected that work plans will not present subproject proposals in detail, it is important that sufficient information is presented to allow for screening and categorization. This should include at minimum a brief description of subproject goal and outputs; main activities; location (with map) including proximity to protected areas, forests and other sensitive areas; estimated budget; and estimated implementation schedule.

23. It is recommended that proposed activities be grouped into subprojects by district and sector, thereby reducing the need for a high number of repetitive subproject environmental assessments and other technical, social and financial analyses.

24. A series of Environmental Guidelines have been developed to assist in the identification and selection of subprojects (Appendix 5). These provide guidance as to environmentally sustainable livelihoods improvement, small-scale infrastructure and forestry activities that are supportive of the Project's goals and are eligible for Project support. They also provide guidance on typical subproject impacts and appropriate mitigation measures.

**Figure 1: Generalized Subproject Environmental Assessment Flowchart**



Notes: 1. Subprojects (if any) that also require an assessment under 697/PMO.WREA must obtain an environmental compliance certificate from the Ministry of Natural Resources and Environment (MONRE).

## B. Subproject Screening and Categorization

25. On the basis of the subproject concepts presented in the work plans, all proposed subprojects would be screened and categorized by the relevant PPMO environmental safeguard officer, with assistance from the National Environmental Safeguards Specialist (NESS) using the relevant Rapid Environmental Assessment (REA) checklists presented in Appendix 1.7. These are based on both ADB environmental safeguarding standards and on GOL Decision No. 697/PMO.WREA. The checklists will be completed by the Provincial Project Office (PPMO) Environment Safeguards Officer, with support from the NESS. The screening process will also screen proposed subprojects against the ADB prohibited investment activities list (Appendix 2).

26. Based on the results of the screening, the NESS will assist the PPMOs to classify subprojects into one of three categories:

- (i) **Category A.** A full-scale environmental impact assessment (EIA) including an environmental management plan (EMP), is required. Category A subprojects are inadmissible for both the baseline BCC and FIP additional financing support.
- (ii) **Category B.** An initial environmental examination (IEE), including an EMP, is required.
- (iii) **Category C.** No EIA or IEE is required although environmental implications need to be reviewed.

27. The NESS will assist the PPMOs to complete a Subproject Environmental Categorization Form (Appendix 3) for each subproject that will be countersigned by the BCC Project Director. The first categorization of a subproject within a sector will require prior approval of ADB (prior-review procedure). If the recommended categorization is approved by ADB for the first subproject in a sector, all subsequent subprojects categorizations in that sector may be approved by the NPMO Director (post-review procedure). ADB will be informed of the results and can request all relevant documents as well as conduct monitoring on a random basis.

28. All proposed subprojects will also be screened against the thresholds in GOL Decision No. 697/PMO.WREA. In the case where a GOL IEE is required, the NESS will provide guidance and support to the PPMOs to prepare the IEE, which will be closely based on the ADB IEE. ADB will be informed of the results of the MONRE approval of the IEE.

## C. Subproject Environmental Assessment, Review and Approval

29. Subprojects that are **category A** will likely have significant adverse environmental impacts and will alter the environmental categorization of the entire Project, and are therefore considered inadmissible for both the BCC Project and the AF support. In such cases the work plan will be revised to remove the subproject or to modify the subproject concept so that it no longer qualifies as a category A subproject. In the latter case the subproject will then be screened again and re-categorized.

30. For **category B** subprojects, an Initial Environmental Examination (IEE) will be prepared by the relevant PPMO environment safeguards officer and/or technical specialists in accordance with the ADB SPS 2009 requirements (Appendix 4 presents a sample IEE outline). The NESS

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<sup>7</sup> The REA checklists have been adapted from the standard ADB REA checklists to make them more suited to potential Project activities. They also include the screening list in Government of Lao PDR Decision No. 697/PMO.WREA.

will provide training and guidance to the PPMOs in the preparation of subproject IEEs. In addition, the PPMOs may utilize and refer to the BCC Project Environmental Guidelines (Appendix 5). These are both general and sector specific guidelines meant to assist in IEE preparation by providing mitigation measures to address typical infrastructure impacts and guidance on acceptable livelihood and forestry activities.

31. PPMO Environment Safeguards Officer, with the assistance of the NESS, will submit the IEEs to the NPMO. The NESS will help the PPMO Environment Safeguards Officer to review the IEE and may require revisions until it reaches a satisfactory standard. The first IEE within a sector will require approval of ADB (prior-review procedure) and should be submitted in English. If the IEE is approved by ADB, subsequent authority for IEE approval in that sector will be delegated to the NPMO Director. These reports may be prepared in the Lao language with an English executive summary. ADB will be informed of the results and provided with the English version of the executive summary.

32. Subprojects with approved IEEs may proceed to implementation, as long as all other relevant internal Project approvals and any necessary GOL permits have been obtained. Subprojects (if any) that also require an assessment under 697/PMO.WREA must also obtain an environmental compliance certificate from the Ministry of Natural Resources and Environment (MONRE).

33. In the case of **category C** subprojects no environmental assessment is required, though ADB should still be notified of the screening findings and the categorization of the subproject, and any potential environmental implications should still be addressed during subproject implementation.

34. The NESS will assist the PPMOs and NPMO to track the status of screening, categorization and environmental assessment and review process for all subprojects. Table 2 provides a sample subproject environmental assessment tracking matrix.

#### **D. Monitoring and Reporting**

35. Environmental monitoring and reporting will be carried out throughout the duration of the Project. Environmental monitoring will consist of systematic compliance inspections by the PPMOs, and where appropriate, PONRE, with assistance from the NESS, to ensure that the subproject mitigation measures are being implemented effectively. Category B subprojects will be inspected on a bimonthly basis during construction and a six-monthly basis during operation. One inspection during construction and yearly inspection will be required for category C subprojects. In addition, monitoring may not be possible during the wet season. Some subprojects will be inspected jointly by the ADB, NPMO and NESS upon request during ADB review missions, especially for subprojects for which monitoring has identified persistent problems, if any (Table 3). A sample subproject compliance inspection form is presented in Appendix 6.

36. The PPMO Environment Safeguards Officer, with assistance from NESS, will report the results of the monitoring on a quarterly basis to the NPMO, including identifying any non-compliance, proposing actions and a timeline for rectifying deficiencies, following up on the status of previous non-compliances, results of the subproject environmental assessment process and subproject environmental monitoring. This report will be integrated into the overall Project's progress report to be submitted to ADB on a semi-annual basis. Appendix 7 presents a sample semi-annual report outline.

**Table 2: Tracking Matrix for Subproject Environmental Assessments(to be completed and updated on an ongoing basis by the PPMO Environment Safeguards Officer with assistance from NESS)**

Province	District	Subproject	Sector	Subproject Environmental Assessment (EA) Status					Comments
				Screened?	Category (A, B or C)	EA Completed? Date?	EA NESS Approved? Date?	EA ADB Approved?	
Champasak	Pathoumphone	Subproject 1	<i>e.g.: Sanitation</i>	<i>e.g.: Yes</i>	<i>e.g.: B</i>	<i>e.g.: Yes, 01/01/13</i>	<i>e.g.: Yes, 15/01/13</i>	<i>e.g.: Pending</i>	
		Subproject 2							
		Etc..							
Attapeu	Phouvong	Subproject 1	<i>e.g.: Sanitation</i>	<i>e.g.: Yes</i>	<i>e.g.: B</i>	<i>e.g.: Yes, 01/01/13</i>	<i>e.g.: Yes, 15/01/13</i>	<i>e.g.: Pending</i>	
		Subproject 2							
		Etc..							
	Sanamxay	Subproject 1	<i>e.g.: Sanitation</i>	<i>e.g.: Yes</i>	<i>e.g.: B</i>	<i>e.g.: Yes, 01/01/13</i>	<i>e.g.: Yes, 15/01/13</i>	<i>e.g.: Pending</i>	
		Subproject 2							
		Etc..							
Xekong	Kaleum	Subproject 1	<i>e.g.: Sanitation</i>	<i>e.g.: Yes</i>	<i>e.g.: B</i>	<i>e.g.: Yes, 01/01/13</i>	<i>e.g.: Yes, 15/01/13</i>	<i>e.g.: Pending</i>	
		Subproject 2							
		Etc..							
	Dakcheung	Subproject 1	<i>e.g.: Sanitation</i>	<i>e.g.: Yes</i>	<i>e.g.: B</i>	<i>e.g.: Yes, 01/01/13</i>	<i>e.g.: Yes, 15/01/13</i>	<i>e.g.: Pending</i>	
		Subproject 2							
		Etc..							

**Table 3: Subproject Environmental Monitoring Schedule**

Province	District	Subprojects	Sector	Monitoring Schedule		
				NESS Compliance Inspections – Construction Phase	NESS Compliance Inspections – Operation Phase	Joint ADB/PMO Compliance Inspections
<b>Champasak</b>	Pathoumphone	Subproject 1 (cat. B)		Bi-monthly	Semi-annually	Upon request by ADB
		Subproject 2 (cat. C)		Once	Annually	
		Etc.		Etc.		
<b>Attapeu</b>	Phouvong	Subproject 1 (cat. B)		Bi-monthly	Semi-annually	Upon request by ADB
		Subproject 2 (cat. C)		Once	Annually	
		Etc.		Etc.		
	Sanamxay	Subproject 1 (cat. B)		Bi-monthly	Semi-annually	Upon request by ADB
		Subproject 2 (cat. C)		Once	Annually	
		Etc.		Etc.		
<b>Xekong</b>	Kaleum	Subproject 1 (cat. B)		Bi-monthly	Semi-annually	Upon request by ADB
		Subproject 2 (cat. C)		Once	Annually	
		Etc.		Etc.		
	Dakcheung	Subproject 1 (cat. B)		Bi-monthly	Semi-annually	Upon request by ADB
		Subproject 2 (cat. C)		Once	Annually	
		Etc.		Etc.		

## VII. ANTICIPATED IMPACTS AND PROPOSED MITIGATION MEASURES

### A. Scoping

37. The scoping of the environmental impact of the Project activities is carried out on the assumption that the activities are technically sound and have the inherent potential and high probability of achieving their biodiversity conservation objective.

38. The most significant positive impact of the Project is expected to be generated by restored connectivity between fragmented forests. This will lead to habitat restoration, halt degradation and support continued provision of ecosystem services, together with all the indirect, secondary and cumulative beneficial impacts this will generate for biodiversity conservation. Most potentially adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed readily. Increased natural resources management capacity and additional biodiversity conservation skills will contribute to sustaining the environmental benefits generated by the Project.

39. Possible negative impacts that have been identified are related to the location and design of the Project and its activities, and to construction and operation activities. They include pollution (waste, pesticides, dust, noise), changes to drainage patterns (erosion, sedimentation, water quality, flooding), erosion, landslides, landscape modifications, habitat loss, impact on cultural heritage elements, distribution of invasive species, introduction of inappropriate species, inappropriate (forest) habitat structure creation, mobilization of dioxins in polluted soils, and traffic hazards.

40. The assessment of the potential environmental impact of Project activities is done against the background of existing environmental issues in the Project area. The main environmental issues in the Project area include the following:

- (i) Deforestation and plantation agriculture. Clearing and degradation of forests has occurred in the Project area for a long time as the result of logging, rotational agriculture practices, roads construction, water reservoir creation, and more recently also for the establishment of cash crop plantations and mining activities.
- (ii) Defoliants and herbicide residues. From 1966 until 1968 and possibly until 1971, chemicals were used extensively for defoliation and crop destruction along the Ho Chi Minh Trail on Lao territory, in particular in Attapeu province. Some of the chemicals used are persistent in soil, but in most sprayed areas present-day concentrations in the soil are believed to be low and within globally accepted limits. A number of so-called hot spots may still exist though, in particular at former air fields where defoliants were stored or transshipped between aircraft and spilled, although there is no information on the presence of such locations in Lao PDR. An indirect effect of the use of defoliants, particularly on many slopes, is poor soil fertility as a result of erosion that took place after the soils were exposed. This may be a main contributing factor to poor natural forest regeneration in certain areas.
- (iii) Hydropower generation. Several hydropower schemes have been completed and many more are planned or under construction. Hydropower schemes impact on the environment in the Project area through the formation of reservoirs clearing and fragmenting forest areas, altering hydrology of streams, affecting groundwater levels,

and, locally, by erosion, landslides and forest and vegetation clearing for high-voltage power transmission lines.

- (iv) Unexploded ordnance. The recent wars in the region have left large amounts of unexploded ordnance (UXO) scattered throughout the Project area. In particular the Bolaven Plateau and other areas along the Ho Chi Minh Trail remain severely affected.
- (v) Mining. There are a few dozen mining concessions in the Project area, covering several thousands of hectares, and there are cases of small-scale illegal mining - mostly for gold. The environmental impact of the mining ranges from limited to severe, depending on the methods used, the location and the nature of the mining operation (gold, bauxite, ores, coal).
- (vi) Invasive species. 41 species are listed<sup>8</sup> as invasive species for Lao PDR, 18 of which invade natural forest and 9 enter planted forests. Nearly half of the invasive species in Lao PDR use rural or disturbed lands (for shifting cultivation, roads construction, deforestation but also reservoir impoundment and irrigation canals) to proliferate.

## B. Impact identification and assessment

41. The potential environmental impacts are primarily due to changes to local drainage patterns which might cause erosion, sedimentation, and flooding, waste generation, and community health and safety from risks from dioxin hot spots and unexploded ordnance. There may be other potential environmental impacts from Project activities due to the location of subprojects that will be formulated during project implementation. Table 3 presents the anticipated environmental impacts and mitigation measures of project activities.

**Table 3:** Anticipated Environmental Impacts and Mitigation Measures

Potential Adverse Impact	Level of Risk	Significance of Impact	Mitigation Measures
<b>Design Phase</b>			
Loss of forest habitats in key locations	Low	Minor	Project design should consider targeted reforestation, enrichment planting, gap filling and natural regeneration.
Impact to cultural heritage sites. Forests and mountains offer locations of worship and have special significance to some locals.	Low	Minor	Avoid locating projects in areas with cultural and religious significance.

<sup>8</sup>IUCN. Global Invasive Species Database. [www.issg.org](http://www.issg.org)

Potential Adverse Impact	Level of Risk	Significance of Impact	Mitigation Measures
Modifications to local drainage patterns, erosion, and sedimentation of waterways from forestry, small-scale infrastructure investments and livelihood support activities.	Low	Significant	Cumulative impact of a number of project activities in an area might be significant. Proper planning and selection of location can prevent and mitigate the impacts to habitats.
Exposure of people and livestock to dioxin hot spots where defoliants are still at dangerously high levels.	Low	Minor	Identify the location of dioxin hot spots. Do not allow project activities within the identified dioxin hot spots.
Exposure of people to unexploded ordnance	High	Moderate	Unexploded ordnance is a considerable risk in the project area and many of the project activities are likely to be located in areas that are not declared safe from UXO. UXO clearance should first be secured prior to project implementation.
Forestry activities may result in the introduction of inappropriate species or the creation of inappropriate habitat structures.	Medium	Moderate	The project activity should be designed in line with the objective of biodiversity conservation.
<b>Construction Phase:</b>			
Wildlife displacement (disturbance) during construction	Low	Minor	Avoid environmentally sensitive areas, including all known wildlife reproductive habitat and avoid blockage of wildlife movement.
Subproject activities may result to pollution, unmanaged disposal of waste and generation of dust and noise.	Low	Minor	Implementation of proper construction management practices such as provision of waste collection and disposal system, water sprinkling of areas prone to dust emission, and limiting noisy activities at night.  Proper cleanup of disturbed areas should be undertaken upon completion of construction works.
Erosion and sedimentation, flooding, and landslides due to	Low	Minor	Erosion control measures should be instituted to avoid impacts to

Potential Adverse Impact	Level of Risk	Significance of Impact	Mitigation Measures
temporary changes in local drainage patterns.			waterways inside the protected areas.
<b>Operation Phase:</b>			
Pollution and wastes (particularly pesticide residues) from nursery operations	High	Minor	<p>Implement pollution control and waste management measures.</p> <p>Only pesticides allowed under the Stockholm Convention on Persistent Organic Pollutants (POPs) should be applied, in adequate quantity.</p> <p>Project staff and beneficiaries will be trained on Integrated Pest Management to minimize the use and application of pesticides, in coordination with MONRE, DFRM and the provincial project offices. The training will cover chemical handling, dose calculation, storage and disposal of spent pesticide containers and expired chemicals.</p>
Dust pollution along rural roads during the dry season.	Low	Minor	The expected traffic volumes are low and most of the vehicles will be motorcycles.
Traffic hazards	Low	Minor	Regulate speed limits of vehicles in rural roads particularly in areas near settlements. Safety signage will be posted along these roads.

### C. Identification of Mitigation Measures

42. The mitigation measures that have been identified are related to planning and design, implementation arrangements and modalities, and monitoring. Most of the mitigation will be achieved through integrating environmental considerations into planning and design activities. They focus on preventing negative environmental impacts. As such, they bear no specific additional cost to the Project and the additional cost to designing and planning of the activities is negligible.

43. The mitigation measures related to design and planning of Project activities will be monitored through the regular Project reports that are being prepared by the PPMOs. Some of the measures related to implementation of Project activities will be monitored based on guidelines that the Project will develop for these activities and their compliance based on Project

reports and site visits. The mitigation that will be achieved through monitoring of environmental conditions will be monitored in itself through site visits, Project reports and incidence reports of the events they are intended to prevent.

### **VIII. DISCLOSURE AND PUBLIC CONSULTATION**

44. The BCC Project and AF, together forming an overall BCC Project, will engage in a number of processes to ensure appropriate disclosure and public consultation as follows. All the subproject reports will be disclosed at the ADB website within 14 days upon receipt from NPMO.

- (i) Subprojects will be developed during a participatory process that will have extensive involvement of beneficiaries and other stakeholders.
- (ii) During the subproject environmental assessment process, environment-related public consultations would be undertaken commensurate with the scale of subproject activities and potential impacts. Public comments will be recorded and incorporated into the subproject IEEs.
- (iii) IEE reports for subprojects requiring ADB prior-review will be disclosed in English on the ADB website.
- (iv) The executive summary of IEE reports for subsequent subprojects in sector subprojects undergoing ADB post-review procedure will be disclosed in English on the ADB website. However, if there is a request for a full IEE in English (by ADB or by an NGO that represents the communities), the full IEE will be translated into English and provided to the parties of interest.
- (v) IEE reports in Lao will be available at the Provincial Project Offices (PPMOs).
- (vi) Semi-annual environmental progress reports will be available for public review in Lao at the NPMO and in English on the ADB website.

### **IX. GRIEVANCE REDRESS MECHANISM**

45. A project grievance can be defined as an actual or perceived Project related problem that gives ground for complaint by an affected person (AP). As a general policy the Project will work proactively toward preventing grievances through the implementation of impact mitigation measures and community liaison activities that anticipate and address potential issues before they become grievances. Nonetheless, during construction and operation it is possible that unanticipated impacts may occur if the mitigation measures are not properly implemented, or unforeseen issues occur. In order to address complaints if or when they arise, a Project grievance redress mechanism (GRM) has been developed in accordance with ADB requirements and GOL practices. A GRM is a systematic process for receiving, evaluating and addressing AP's Project-related grievances. A GRM will be established in the inception phase of the Project, *before* implementation of subprojects.

#### **A. Type of Grievances**

46. Any AP will be able to submit a grievance if they believe a Project activity is having a detrimental impact on the community, the environment, or on their quality of life. Grievances could include:

- (i) Negative impacts on a person or a community (e.g. financial loss such as from loss of roadside trees, health and safety issues, nuisances, etc.).
- (ii) Dangers to health and safety or the environment.

- (iii) Social impacts due to construction team activities or impacts on social infrastructure.
- (iv) Failure to comply with standards or legal obligations.
- (v) Harassment of any nature.
- (vi) Criminal activity.
- (vii) Improper conduct or unethical behavior.
- (viii) Financial malpractice or impropriety or fraud.
- (ix) Attempts to conceal any of the above.

47. The GRM will be made public throughout the public consultation process, and will be maintained during operation and maintenance.

## **B. Grievance Resolution Process**

48. The GRM consists of 4 escalating steps, and is presented in Figure 2. Each step is explained below.

### **1. Step 1: Village Level**

49. Grievance is submitted by AP to the relevant Village Head. The Village Head forwards the grievance to the relevant PPMO. The PPMO Coordinator records it in writing, investigates the validity of the complaint and potential solutions with the relevant District Team, and informs the NPMO.

50. The Village Head also investigates the complaint and then invites the AP and District Team to a meeting to attempt to resolve the grievance. If a solution satisfactory to the AP is reached the AP will be asked to sign a Statement of Satisfaction and the process ends. If the grievance remains unresolved the Village Head will advance the grievance to the relevant sector District Government department (e.g. District Office of Forestry and Agriculture for forest related grievances). The District team will inform the PPMO and NPMO as to the Step 1 result. Step 1 should be completed within 15 days.

### **2. Step 2: District Level**

51. The District Government department investigates the complaint and then invites the AP, PPMO Coordinator and the District team to a meeting to attempt to resolve the grievance. If a solution satisfactory to the AP is reached the AP will be asked to sign a Statement of Satisfaction and the process ends. If the grievance remains unresolved the District Government department will advance the grievance to the relevant sector Provincial Government department (e.g. Provincial Office of Natural Resources and Environment (PONRE) for conservation and protection forest related grievances, and Provincial Office of Forestry and Agriculture (PAFO) for production forest related grievances). The PPMO Coordinator will inform the NPMO as to the Step 2 result. Step 2 should be completed within 20 days.

### **3. Step 3: Provincial Level**

52. The Provincial Government department investigates the complaint and then invites the AP, National Project Coordinator and PPMO Coordinator to a meeting to attempt to resolve the grievance. If a solution satisfactory to the AP is reached the AP will be asked to sign a Statement of Satisfaction and the process ends. Step 3 should be completed within 25 days.

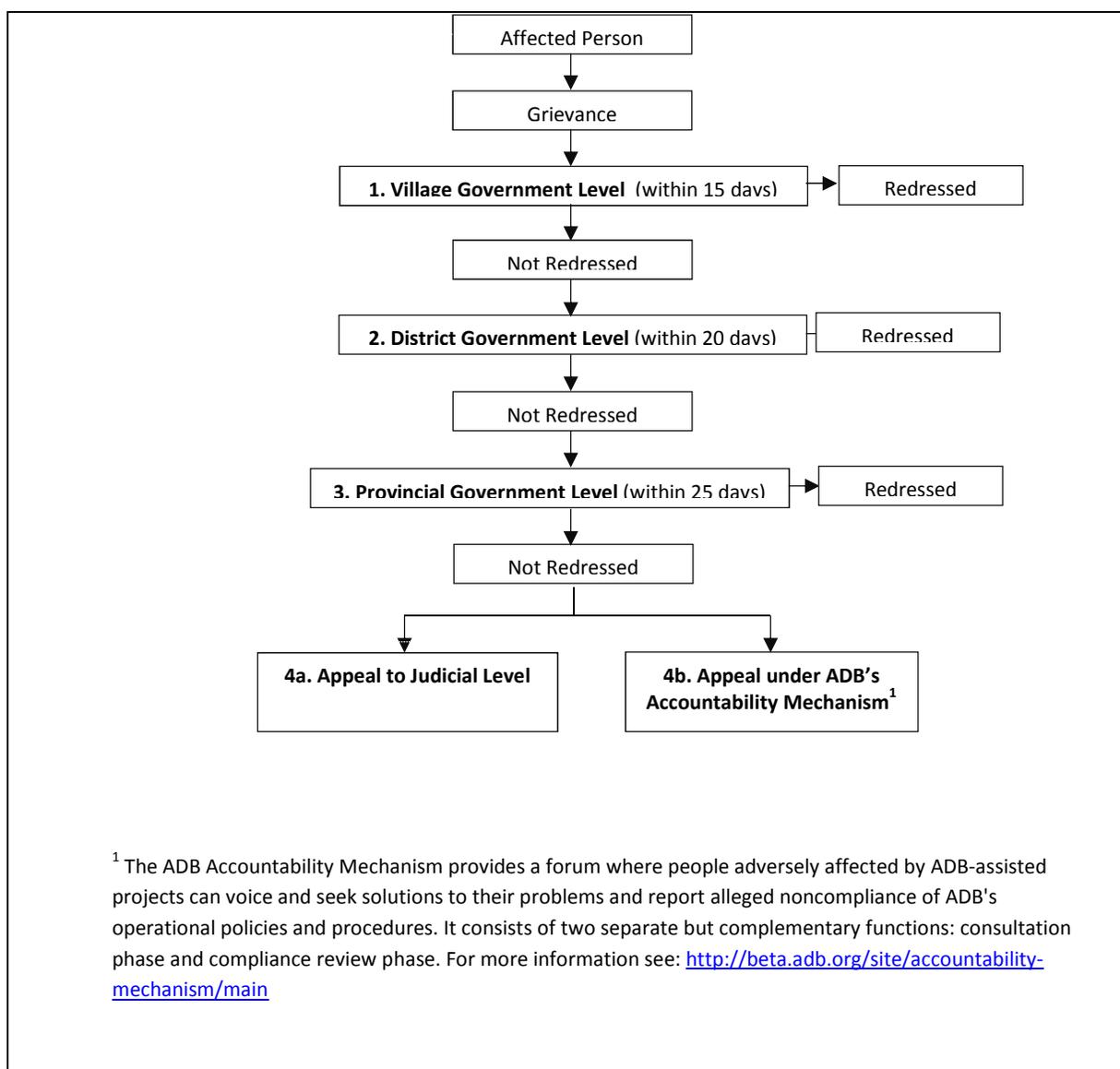
#### 4. Step 4: Judicial Level

53. If the grievance remains unresolved the AP may advance the grievance to the judicial level for final resolution and settlement. All court fees will be borne by the Project. The AP may also choose to approach ADB under the Accountability Mechanism. There is no time requirement for completion of Step 4.

#### C. Grievance Follow-up

54. The relevant PPMO or NPMO coordinators may contact the AP at a later stage to ensure that the activities continue to pose no further problems. If there is a remaining problem, the issue will be treated as a new grievance and re-enter the process.

**Figure 2: Grievance Redress Mechanism**



#### **D. Confidentiality and Anonymity**

55. An AP submitting a grievance may wish to raise a concern in confidence. If the complainant asks the relevant PPMO or the NPMO to protect his or her identity, it should not be disclosed without consent.

### **X. IMPLEMENTATION ARRANGEMENTS**

56. The Ministry of Natural Resources and Environment (MONRE) is the executing agency of the Project. Within MONRE the Department of Forest Resource Management (DFRM) has overall responsibility for the Project including ensuring compliance with environmental safeguard requirements of ADB and the GOL. A National Project Management Office (NPMO) has been established and is headed by the National Project Director who is also Director General of the DFRM. The NPMO is situated within the DFRM in Vientiane, and is staffed by a National Project Coordinator who is in charge of the baseline and will also be responsible for the AF. A project manager will report to both the coordinators. The NPMO is also staffed by accountants, administrative staff, and assisted by a team of Grant Implementation Consultants including a full-time National Environmental Safeguards Specialist (NESS).

57. The Provincial Project Management Offices (PPMOs) have been established in Champasak, Sekong and Attapeu provinces, hosted under the Provincial Office of Natural Resources and Environment, and are staffed by a Provincial Project Coordinator, accounting and administrative staff, and technical staff including GIS, forestry and environment specialists. Provincial Project Steering Committees have been established in each province and the project activities will be implemented through Provincial Implementation Teams and five District Teams. Regarding environmental safeguards, the PPMOs and their relevant technical staff will be responsible for:

- (i) ensuring proposed subprojects concepts are appropriately incorporated into the Project work plans thereby allowing for screening and categorization;
- (ii) preparing subproject environmental assessments that are in compliance with the ADB SPS 2009 and GOL requirements;
- (iii) participating in environmental compliance inspections undertaken by the NESS;
- (iv) addressing adverse environmental issues that are identified during monitoring or through other means; and
- (v) supporting the NESS in the preparation of monthly and semi-annual environmental progress reports.

### **XI. STAFFING REQUIREMENTS AND BUDGET**

58. An international environmental safeguard specialist was mobilized as part of the Grant Implementation Consultant team in the inception phase of the BCC Project. The specialist has prepared an earlier version of this EARF applicable to the BCC Project and has provided training to the NESS and Project staff on implementation of the EARF.

59. Given that the AF component does not intend to undertake any small-scale infrastructure works (except for the construction/rehabilitation of DONRE offices in Phouvong and Dakcheung districts), the extra work required for environmental safeguards under the AF is minimal and the responsibilities of the NESS remain unchanged. The NESS is responsible for assisting the NPMO and PPMOs in day-to-day implementation of the EARF requirements, including:

- (i) ensuring that all subprojects are appropriately screened for contribution to the overall Project objective of ensuring connectivity between protected areas in the biodiversity conservation landscape;
- (ii) ensuring that all subprojects are appropriately categorized, and that categorizations are approved by either the NPMO Director and ADB or just the NPMO Director (depending on whether approval authority has been delegated to the NPMO, see section VI. B);
- (iii) ensuring that subproject environmental assessments are prepared consistent with the subproject environmental categorizations and in compliance with the SPS 2009 and all relevant regulations by the GOL (see section III);
- (iv) ensuring that all subprojects environmental assessments are approved by either the NPMO Director and ADB or just the NPMO Director (depending on whether environmental assessment approval authority has been delegated to the NPMO, see section VI. C);
- (v) undertaking subproject environmental monitoring;
- (vi) undertaking environmental reporting to the PMO and semi-annual reporting to the ADB; and
- (vii) updating and/or development of generic and sector specific environmental guidelines to assist in subproject identification and implementation; and
- (viii) provide training to PPMO and NPMO staff, including the PPMO forestry and environment specialists, on all of the above.

60. Some additional human resources will be provided for the AF to supplement resources under the BCC Project. Additional funding will be required for travel costs, estimated at US\$500/village x 21 FIP villages =US\$10,500.

## **Appendix 1:**

### **BCC Project Rapid Environmental Assessment Checklists**

- Agro-Industrial
- Buildings
- Forestry
- Irrigation

Additional checklists may be added if required.

<b>Agro-Industrial</b>
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## BCC Project Rapid Environmental Assessment (REA) Checklist

**Instructions:**

- This checklist is to be prepared to support the environmental classification of subprojects proposed under the Lao PDR Biodiversity Conservation Corridors Project (BCC Project).
- This checklist is to be prepared by the relevant Project Provincial Project Management Office (PPMO) with assistance from the National Environmental Safeguards Specialist (NESS).
- It is to be attached to the BCC Project subproject environmental categorization form that is to be prepared by the NESS. The first categorization of a subproject within a sector will require prior approval of ADB. If the recommended categorization is approved by ADB, authority for categorization approvals in that sector will be delegated to the National Project Management Office (NPMO), and all subsequent subproject categorizations in that sector may be approved by the BCC Project Director.
- Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

**Subproject Title:** \_\_\_\_\_

**Province/District/Village:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Provincial Project Office:** \_\_\_\_\_

ADB SCREENING QUESTIONS	Yes	No	REMARKS
<b>A. Project Siting</b>			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Protected Area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Wetland	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Buffer zone of protected area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Special area for protecting biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Bay	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B. Potential Environmental Impacts</b>			
Will the Project cause...			

ADB SCREENING QUESTIONS	Yes	No	REMARKS
▪ ecological disturbances arising from the establishment of a plant or facility complex in or near sensitive habitats?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ eventual degradation of water bodies due to discharge of wastes and other effluents from plant or facility complex?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ serious contamination of soil and groundwater?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ aggravation of solid waste problems in the area?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ public health risks from discharge of wastes and poor air quality; noise and foul odor from plant emissions?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ short-term construction impacts (e.g. soil erosion, deterioration of water and air quality, noise and vibration from construction equipment?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ dislocation or involuntary resettlement of people	<input type="checkbox"/>	<input type="checkbox"/>	
▪ social conflicts arising from the influx of construction laborers from other areas?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ environmental degradation (e.g. erosion, soil and water contamination, loss of soil fertility, disruption of wildlife habitat) from intensification of agricultural land use to supply raw materials for plant operation; and modification of natural species diversity as a result of the transformation to monoculture practices?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ water pollution from discharge of liquid effluents?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ air pollution from all plant operations?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ gaseous and odor emissions to the atmosphere from processing operations?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ accidental release of potentially hazardous solvents, acidic and alkaline materials?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ uncontrolled in-migration with opening of roads to forest area and overloading of social infrastructure?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ occupational health hazards due to fugitive dust, materials handling, noise, or other process operations?	<input type="checkbox"/>	<input type="checkbox"/>	

ADB SCREENING QUESTIONS	Yes	No	REMARKS
▪ disruption of transit patterns, creation of noise and congestion, and pedestrian hazards aggravated by heavy trucks?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ disease transmission from inadequate waste disposal?	<input type="checkbox"/>	<input type="checkbox"/>	

**GOL screening as per Decision No. 697/PMO.WREA:**

Type of Investment Project <sup>1</sup>	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
<b>I. Development Projects: energy sector</b>			
Hydropower plants	<15 MW or water capacity <200,000,000 m <sup>3</sup> dam area <1,500 ha	>15 MW or water capacity >200,000,000 m <sup>3</sup> dam area >1,500 ha	
Natural gas power plants	5-50 MW	>50 MW	
High voltage transmission line ≥ 230 kV	≤ 50 km	>50 km	
High voltage transmission line < 230 kV	All	If TL passes through a forest conservation area or community	
<b>II. Investment Projects: agriculture and forestry sector</b>			
Industrial tree plantations	20-300 ha	>300 ha	
Industrial crop plantations	20-500 ha	>500 ha	
Irrigation project	100-2000 ha	>2000 ha	
Animal husbandry: cow, buffalo, horse, other	≥ 1000 animals		
Animal husbandry: pigs	≥ 200 pigs		
Aquaculture ponds	≥ 10 ha		
Freshwater net aquaculture	≥ 300 m <sup>2</sup>		
<b>III. Investment Projects: industrial processing sector</b>			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
<b>IV. Investment Projects: infrastructure and services sector</b>			
Industrial zone construction and Development	-	All	
Telecommunications network construction	All		
Sewer drainage system	All		
Waste water treatment plant (city, hospital and industrial processing plants)		All	
New roads through forestry zones (conservation, protection and production forests) and biodiversity zones		All	
New national, district, rural <sup>2</sup> and special roads		All	
National, district, rural and special roads improvement and rehabilitation	All		
Hospitals	≤ 100 beds	≥100 beds	
Tourism developments in National Parks		All	
Community waste disposal areas	≤ 50 ha	50 ha≥	
Hazardous materials waste disposal areas		All	
Industrial hazardous materials waste disposal areas		All	
<b>V. Investment Projects: minerals/ore sector</b>			
Minerals, mining projects (non-chemical)		All	
Minerals, mining projects (using chemicals)		All	
Oil and gas drilling projects		All	

**Rapid Environmental Assessment (REA) Checklist****BUILDINGS****Instructions:**

- This checklist is to be prepared to support the environmental classification of subprojects proposed under the Lao PDR Biodiversity Conservation Corridors Project (the Project).
- This checklist is to be prepared by the Project's National Environmental Safeguards Specialist (NESS).
- It is to be attached to the subproject environmental categorization form that is to be prepared by the NESS. The first categorization of a subproject within a sector will require prior approval of ADB. If the recommended categorization is approved by ADB, authority for categorization approvals in that sector will be delegated to the Project's National Project Management Office (NPMO), and all subsequent subproject categorizations in that sector may be approved by the Project Director.
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

**Subproject Title:** \_\_\_\_\_

**Province/District/Village:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Provincial Project Office:** \_\_\_\_\_

ADB SCREENING QUESTIONS	Yes	No	REMARKS
<b>A. Project Siting</b>			
Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Cultural heritage site	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Protected Area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Wetland	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Buffer zone of protected area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Special area for protecting biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B. Potential Environmental Impacts</b>			
Will the Project cause...			

ADB SCREENING QUESTIONS	Yes	No	REMARKS
▪ Encroachment on historical/cultural areas?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Dislocation or involuntary resettlement of people?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Increased noise and air pollution resulting from increased traffic volume?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Occupational and community health and safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Consumption or production of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Generation of dust in sensitive areas during construction?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Requirements for disposal of fill, excavation, and/or spoil materials?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Noise and vibration due to blasting and other civil works?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Social and/or health impacts from worker camps?			
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Human health risks caused by fire, electric shock, or failure of the buildings safety features during operation?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Human health and environmental risks caused by management and disposal of waste?	<input type="checkbox"/>	<input type="checkbox"/>	

**GOL screening as per Decision No. 697/PMO.WREA:**

Type of Investment Project <sup>1</sup>	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
<b>I. Development Projects: energy sector</b>			
Hydropower plants	<15 MW or water capacity <200,000,000 m <sup>3</sup> dam area <1,500 ha	>15 MW or water capacity >200,000,000 m <sup>3</sup> dam area >1,500 ha	
Natural gas power plants	5-50 MW	>50 MW	
High voltage transmission line ≥ 230 kV	≤ 50 km	>50 km	
High voltage transmission line < 230 kV	All	If TL passes through a forest conservation area or community	
<b>II. Investment Projects: agriculture and forestry sector</b>			
Industrial tree plantations	20-300 ha	>300 ha	
Industrial crop plantations	20-500 ha	>500 ha	
Irrigation project	100-2000 ha	>2000 ha	
Animal husbandry: cow, buffalo, horse, other	≥ 1000 animals		
Animal husbandry: pigs	≥ 200 pigs		
Aquaculture ponds	≥ 10 ha		
Freshwater net aquaculture	≥ 300 m <sup>2</sup>		
<b>III. Investment Projects: industrial processing sector</b>			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
<b>IV. Investment Projects: infrastructure and services sector</b>			
Industrial zone construction and Development	-	All	
Telecommunications network construction	All		
Sewer drainage system	All		
Waste water treatment plant (city, hospital and industrial processing plants)		All	
New roads through forestry zones (conservation, protection and production forests) and biodiversity zones		All	
New national, district, rural <sup>2</sup> and special roads		All	
National, district, rural and special roads improvement and rehabilitation	All		
Hospitals	≤ 100 beds	≥100 beds	
Tourism developments in National Parks		All	
Community waste disposal areas	≤ 50 ha	50 ha≥	
Hazardous materials waste disposal areas		All	
Industrial hazardous materials waste disposal areas		All	
<b>V. Investment Projects: minerals/ore sector</b>			
Minerals, mining projects (non-chemical)		All	
Minerals, mining projects (using chemicals)		All	
Oil and gas drilling projects		All	

**Rapid Environmental Assessment (REA) Checklist****FORESTRY****Instructions:**

- This checklist is to be prepared to support the environmental classification of subprojects proposed under the Lao PDR Biodiversity Conservation Corridors Project (the Project).
- This checklist is to be prepared by the Project's National Environmental Safeguards Specialist (NESS).
- It is to be attached to the subproject environmental categorization form that is to be prepared by the NESS. The first categorization of a subproject within a sector will require prior approval of ADB. If the recommended categorization is approved by ADB, authority for categorization approvals in that sector will be delegated to the Project's National Project Management Office (NPMO), and all subsequent subproject categorizations in that sector may be approved by the Project Director.
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

**Subproject Title:** \_\_\_\_\_**Province/District/Village:** \_\_\_\_\_ **Date:** \_\_\_\_\_**Provincial Project Office:** \_\_\_\_\_

ADB SCREENING QUESTIONS	Yes	No	REMARKS
<b>A. Project Siting</b>			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Protected Area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Wetland	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Buffer zone of protected area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Special area for protecting biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B. Potential Environmental Impacts</b>			
Will the Project cause...			
▪ increase in soil erosion and siltation?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ increase in peak and flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	

ADB SCREENING QUESTIONS	Yes	No	REMARKS
▪ loss of downstream beneficial uses (water supply or fisheries)?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ impairment of ecological and recreational opportunities?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ impairment of beneficial uses of traditional forests?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ any loss of precious ecology?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ possible conflicts with established management policies?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ dislocation or involuntary resettlement of people?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ loss of downstream ecological and economic functions due to any construction of social infrastructure (e.g., road, training or information center, office or housing)?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ displacement of people or reduce their access to forest resources?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ uncontrolled in-migration with opening of roads to forest area and overloading of social infrastructure?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ unnecessary loss of ecological value and decreased biodiversity by replacement of natural forest with plantation with limited number of species?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ technology or land use modification that may change present social and economic activities?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ ecological problems due to land clearance prior to reforestation (e.g., soil erosion, disruption of hydrological cycle, loss of nutrients, decline in soil fertility)?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ other ecological problems (e.g., pollution of water bodies from fertilizers, pesticides, and herbicides used in the plantation)?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ social problems and conflicts related to land tenure and resource use rights?	<input type="checkbox"/>	<input type="checkbox"/>	

**GOL screening as per Decision No. 697/PMO.WREA:**

Type of Investment Project <sup>1</sup>	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
<b>I. Development Projects: energy sector</b>			
Hydropower plants	<15 MW or water capacity <200,000,000 m <sup>3</sup> dam area <1,500 ha	>15 MW or water capacity >200,000,000 m <sup>3</sup> dam area >1,500 ha	
Natural gas power plants	5-50 MW	>50 MW	
High voltage transmission line ≥ 230 kV	≤ 50 km	>50 km	
High voltage transmission line < 230 kV	All	If TL passes through a forest conservation area or community	
<b>II. Investment Projects: agriculture and forestry sector</b>			
Industrial tree plantations	20-300 ha	>300 ha	
Industrial crop plantations	20-500 ha	>500 ha	
Irrigation project	100-2000 ha	>2000 ha	
Animal husbandry: cow, buffalo, horse, other	≥ 1000 animals		
Animal husbandry: pigs	≥ 200 pigs		
Aquaculture ponds	≥ 10 ha		
Freshwater net aquaculture	≥ 300 m <sup>2</sup>		
<b>III. Investment Projects: industrial processing sector</b>			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
<b>IV. Investment Projects: infrastructure and services sector</b>			
Industrial zone construction and Development	-	All	
Telecommunications network construction	All		
Sewer drainage system	All		
Waste water treatment plant (city, hospital and industrial processing plants)		All	
New roads through forestry zones (conservation, protection and production forests) and biodiversity zones		All	
New national, district, rural <sup>2</sup> and special roads		All	
National, district, rural and special roads improvement and rehabilitation	All		
Hospitals	≤ 100 beds	≥100 beds	
Tourism developments in National Parks		All	
Community waste disposal areas	≤ 50 ha	50 ha≥	
Hazardous materials waste disposal areas		All	
Industrial hazardous materials waste disposal areas		All	
<b>V. Investment Projects: minerals/ore sector</b>			
Minerals, mining projects (non-chemical)		All	
Minerals, mining projects (using chemicals)		All	
Oil and gas drilling projects		All	

**Rapid Environmental Assessment (REA) Checklist****IRRIGATION****Instructions:**

- This checklist is to be prepared to support the environmental classification of subprojects proposed under the Lao PDR Biodiversity Conservation Corridors Project (the Project).
- This checklist is to be prepared by the Project's National Environmental Safeguards Specialist (NESS).
- It is to be attached to the subproject environmental categorization form that is to be prepared by the NESS. The first categorization of a subproject within a sector will require prior approval of ADB. If the recommended categorization is approved by ADB, authority for categorization approvals in that sector will be delegated to the Project's National Project Management Office (NPMO), and all subsequent subproject categorizations in that sector may be approved by the Project Director.
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

**Subproject Title:** \_\_\_\_\_

**Province/District/Village:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Provincial Project Office:** \_\_\_\_\_

ADB SCREENING QUESTIONS	Yes	No	REMARKS
<b>A. Project Siting</b>			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Protected Area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Wetland	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Mangrove	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Buffer zone of protected area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Special area for protecting biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B. Potential Environmental Impacts</b>			
Will the Project cause...			
▪ loss of precious ecological values (e.g. result of encroachment into forests/swamplands or historical/cultural buildings/areas, disruption of hydrology of natural waterways, regional flooding, and drainage hazards)?	<input type="checkbox"/>	<input type="checkbox"/>	

ADB SCREENING QUESTIONS	Yes	No	REMARKS	
▪ 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"/>		
▪ potential ecological problems due to increased soil erosion and siltation, leading to decreased stream capacity?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ Insufficient drainage leading to salinity intrusion?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ over pumping of groundwater, leading to salinization and ground subsidence?	<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"/>		
▪ dislocation or involuntary resettlement of people?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ potential social conflicts arising from land tenure and land use issues?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ soil erosion before compaction and lining of canals?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ noise from construction equipment?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ dust?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ labor-related social problems especially if workers from different areas are hired?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ waterlogging and soil salinization due to inadequate drainage and farm management?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ leaching of soil nutrients and changes in soil characteristics due to excessive application of irrigation water?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ reduction of downstream water supply during peak seasons?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ soil pollution, polluted farm runoff and groundwater, and public health risks due to excessive application of fertilizers and pesticides?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ soil erosion (furrow, surface)?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ scouring of canals?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ logging of canals by sediments?	<input type="checkbox"/>	<input type="checkbox"/>		
▪ clogging of canals by weeds?	<input type="checkbox"/>	<input type="checkbox"/>		

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▪ seawater intrusion into downstream freshwater systems?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ introduction of increase in incidence of waterborne or water related diseases?	<input type="checkbox"/>	<input type="checkbox"/>	

**GOL screening as per Decision No. 697/PMO.WREA:**

Type of Investment Project <sup>1</sup>	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
<b>I. Development Projects: energy sector</b>			
Hydropower plants	<15 MW or water capacity <200,000,000 m <sup>3</sup> dam area <1,500 ha	>15 MW or water capacity >200,000,000 m <sup>3</sup> dam area >1,500 ha	
Natural gas power plants	5-50 MW	>50 MW	
High voltage transmission line ≥ 230 kV	≤ 50 km	>50 km	
High voltage transmission line < 230 kV	All	If TL passes through a forest conservation area or community	
<b>II. Investment Projects: agriculture and forestry sector</b>			
Industrial tree plantations	20-300 ha	>300 ha	
Industrial crop plantations	20-500 ha	>500 ha	
Irrigation project	100-2000 ha	>2000 ha	
Animal husbandry: cow, buffalo, horse, other	≥ 1000 animals		
Animal husbandry: pigs	≥ 200 pigs		
Aquaculture ponds	≥ 10 ha		
Freshwater net aquaculture	≥ 300 m <sup>2</sup>		
<b>III. Investment Projects: industrial processing sector</b>			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
<b>IV. Investment Projects: infrastructure and services sector</b>			
Industrial zone construction and Development	-	All	
Telecommunications network construction	All		
Sewer drainage system	All		
Waste water treatment plant (city, hospital and industrial processing plants)		All	
New roads through forestry zones (conservation, protection and production forests) and biodiversity zones		All	
New national, district, rural <sup>2</sup> and special roads		All	
National, district, rural and special roads improvement and rehabilitation	All		
Hospitals	≤ 100 beds	≥100 beds	
Tourism developments in National Parks		All	
Community waste disposal areas	≤ 50 ha	50 ha≥	
Hazardous materials waste disposal areas		All	
Industrial hazardous materials waste disposal areas		All	
<b>V. Investment Projects: minerals/ore sector</b>			
Minerals, mining projects (non-chemical)		All	
Minerals, mining projects (using chemicals)		All	
Oil and gas drilling projects		All	

## Appendix 2:

### ADB Prohibited Investment Activities List

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The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor<sup>9</sup> or child labor;<sup>10</sup>
  - (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,<sup>11</sup> pesticides, and herbicides,<sup>12</sup> (b) ozone-depleting substances,<sup>13</sup> (c) polychlorinated biphenyls<sup>14</sup> and other hazardous chemicals,<sup>15</sup> (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,<sup>16</sup> and (e) transboundary trade in waste or waste products;<sup>17</sup>
  - (iii) production of or trade in weapons and munitions, including paramilitary materials;
  - (iv) production of or trade in alcoholic beverages, excluding beer and wine;<sup>18</sup>
  - (v) production of or trade in tobacco;<sup>10</sup>
  - (vi) gambling, casinos, and equivalent enterprises;<sup>10</sup>
  - (vii) production of or trade in radioactive materials,<sup>19</sup> including nuclear reactors and components thereof;
  - (viii) production of, trade in, or use of unbonded asbestos fibers;<sup>20</sup>
  - (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
  - (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.
- 

<sup>9</sup> Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

<sup>10</sup> Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" ([www.ilo.org](http://www.ilo.org)).

<sup>11</sup> A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

<sup>12</sup> A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

<sup>13</sup> A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

<sup>14</sup> A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

<sup>15</sup> A list of hazardous chemicals is available at <http://www.pic.int>.

<sup>16</sup> A list is available at <http://www.cites.org>.

<sup>17</sup> As defined by the Basel Convention; see <http://www.basel.int>.

<sup>18</sup> This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

<sup>19</sup> This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

<sup>20</sup> This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

**Appendix 3:**

**Subproject Environmental Categorization Form**

<p><b>A. Instructions:</b></p> <p>(i) This form is to be completed by the PPMO environmental safeguard officer with assistance from the NESS and submitted to the Project Director for endorsement before being submitted to ADB for review and approval.</p> <p>(ii) The environment categorization of a subproject is a continuing process. If there is a change in the components or/and site of a subproject that may result in category change, another categorization form should be resubmitted to ADB for review and approval.</p>
<p><b>B. Subproject Data:</b></p> <p>Title: _____</p> <p>Province/District/Village: _____ Date: _____</p> <p>Provincial Project Office: _____ Processing Stage: _____</p> <p>Coverage:            <input type="checkbox"/> Province      <input type="checkbox"/> District            <input type="checkbox"/> Village</p>
<p><b>C. ADB Environment Category:</b>      <input type="checkbox"/> New <input type="checkbox"/> Recategorization --- Previous Category _____</p> <p><input type="checkbox"/> Category A</p> <p><input type="checkbox"/> Category B</p> <p><input type="checkbox"/> Category C</p> <p><b>Comments:</b></p> <p>_____</p> <p>_____</p>
<p><b>D. GOL Environment Category</b></p> <p><input type="checkbox"/> Category 1</p> <p><input type="checkbox"/> Category 2</p> <p><b>Comments:</b></p> <p>_____</p> <p>_____</p>

**E. Documents attached:** *The categorization will be considered incomplete if proper documentation is not attached.*

**Basis for Categorization/ Recategorization:**

- REA Checklist  
 Subproject and/or Site Description (must be attached)  
 Other: \_\_\_\_\_

**Terms of Reference for EIA/IEE:**

- Key issues identified and attached  
 Under preparation and will be submitted on \_\_\_\_\_ (date)

**F. ADB Environmental Assessment Requirements**

*Please check one:*

**Category A:**

- Environmental Impact Assessment (EIA)
- Environmental Management Plan including a Budget
- Public Consultation (at least twice)
- Disclosure 120 days in advance of Board Consideration

**Category B:**

- Initial Environmental Examination (IEE)
- Public Consultation

**Category C:**

- Review of Environmental Implications

**G. GO Environmental Assessment Requirements**

*Please check one:*

**Category 1:**

- Initial Environmental Examination (IEE)

**Category 2:**

- Environmental Impact Assessment (EIA)

**No assessment required**

**H. Signatures**

*Please check one:*

- ADB to Approve**  
 **NPMO to Approve**

**Note:** The first categorization of a subproject within a sector will require approval of ADB. If the recommended categorization is approved by ADB, authority for categorization approvals in that sector will be delegated to the NPMO, and all subsequent subprojects categorizations in that sector may be approved by the Project Director. ADB will be informed of the results.

**NPMO**

*Category Assigned by:*

\_\_\_\_\_  
Project NESS

Date: \_\_\_\_\_

*Approved by:*

\_\_\_\_\_  
Project Director

Date: \_\_\_\_\_

**ADB**

*Endorsed by:*

\_\_\_\_\_  
Director, RSES

Date: \_\_\_\_\_

*Approved by:*

\_\_\_\_\_  
Chief Compliance Officer

Date: \_\_\_\_\_

## **Appendix 4: IEE Overview and Annotated Outline**

### **What is an IEE?**

An Initial Environmental Examinations (IEEs) is required for all Category B Subprojects. An IEE is a form of simplified Environmental Impact Assessment (EIA) which is carried out for subprojects likely to have minor or limited impacts which can easily be predicted and evaluated, and for which mitigation measures are easily prescribed.

### **Who Prepares the IEE?**

The IEE should be prepared by the Provincial Project Office (PPMO) technical specialists with technical assistance provided by the National Environment Safeguards Specialist (NESS), located at the National Project Management Office (NPMO). The NESS is responsible for reviewing all subproject IEEs and ensuring their compliance with ADB and Lao PDR Government requirements.

It is recommended that one or more “model” subproject IEEs be prepared early during implementation, with assistance from the NESS. This can then be used as a guide for other subprojects. In addition, the NPMO has several subproject IEEs from other ADB projects in Lao PDR which may be referred to.

### **IEE Outline**

Below is an IEE outline extracted from the ADB Safeguard Policy Statement (SPS). An IEE’s level of detail and comprehensiveness should be commensurate with the significance of potential environmental impacts and risks. For small scale infrastructure, forestry or livelihood subprojects expected under the Project, a relatively narrow scope and depth of analysis should be sufficient.

The substantive aspects of this outline will guide the preparation of IEE reports, although not necessarily in the order shown.

#### **A. Executive Summary**

This section describes concisely the critical facts, significant findings, and recommended actions.

#### **B. Policy, Legal, and Administrative Framework**

This section summarizes the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies subproject-relevant international environmental agreements to which the country is a party.

#### **C. Description of the Subproject**

This section describes the proposed subproject; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the subproject (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the subproject’s layout and components, the subproject site, and the subproject’s area of influence.

#### **D. Description of the Environment (Baseline Data)**

This section describes relevant physical, biological, and socioeconomic conditions within the study area, and may be based largely on secondary data if relevant and accurate secondary data is available. It also looks at current and proposed development activities within the subproject's area of influence, including those not directly connected to the subproject. It indicates the accuracy, reliability, and sources of the data.

#### **E. Anticipated Environmental Impacts and Mitigation Measures**

This section predicts and assesses the subproject's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the subproject's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate. It is expected that an IEE will be based on less rigorous impact assessment methodologies than an EIA. For example, an EIA might be based on predictive modeling, while an IEE might utilize expert opinion.

#### **F. Information Disclosure, Consultation, and Participation**

This section:

- (i) describes the process undertaken during subproject design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in subproject design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- (iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during subproject implementation.

#### **G. Grievance Redress Mechanism**

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

#### **H. Environmental Management Plan**

This section deals with the set of mitigation and management measures to be taken during subproject implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the subproject's impacts and risks):

- (i) Mitigation:
  - (a) identifies and summarizes anticipated significant adverse environmental impacts and risks;

- (b) describe each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
  - (c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the subproject.
- (ii) Monitoring:
  - (a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
  - (b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.
- (iii) Implementation arrangements:
  - (a) specifies the implementation schedule showing phasing and coordination with overall subproject implementation;
  - (b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
  - (c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.
- (iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

## **I. Conclusion and Recommendations**

This section provides the conclusions drawn from the assessment and provides recommendations.

## **Appendix 5:**

### **BCC Subproject Environmental Guidelines**

- Environmental Selection Criteria – Forestry, Livelihoods and Small-scale Infrastructure
- Environmental Good Practice Guidelines for Small-Scale Infrastructure Construction

Note: also see REA Checklists (Appendix 1) which are used in subproject screening and categorization.

## **Environmental Selection Guidelines – Forestry, Small Scale Infrastructure and Livelihoods**

The Project will support the livelihoods of the population living inside the corridors through support to a total of 67 villages for the BCC project, and around 20 additional villages supported by only the FIP additional financing. Support from the baseline BCC Project includes

- i) Small-scale Infrastructure - investments in small-scale infrastructure of up to \$100,000 will be available for each village.
- ii) Village Development Funds - there will be a \$5,000 available for each village to support small livelihood activities. These funds will run in part like micro-credit facilities.
- iii) Village Scale Livelihoods - this will be targeted at larger-scale livelihood support activities.

The Project is utilizing a sector approach to the identification of these activities, and subprojects will be identified during project implementation. The Project Environmental Assessment and Review Framework (EARF) provides a framework for the environmental assessment of proposed subprojects, environmental monitoring during subproject implementation, and environmental progress reporting.

This document provides environmental guidelines for the selection of forestry and livelihood activities that are eligible for support by the Project.

This is a “living document”, and will be updated by the National Environmental Safeguard Specialist (NESS) on an as needed basis as the Project moves from the inception to the implementation phase.

### **B. Who should use these guidelines?**

These guideline should be used by the Project stakeholders who are developing subproject concepts for consideration for Project funding, including Provincial Project Offices (PPMOs).

### C. General Selection Criteria

#### 1. Supportive of Project Objectives

Subprojects should be demonstrably supportive of the intended outputs of the Project:

**Output 1:** Institutions and communities are strengthened for biodiversity corridor management and ready to implement REDD+;

**Output 2:** Biodiversity corridors are restored, ecosystem services are protected, maintained and REDD+ ready;

**Output 3:** Livelihoods are improved and small-scale infrastructure is supported.

**Output 4:** Project management and support services will be provided.

#### 2. Environmental Screening and Categorization

As per the requirements of the EARF, subprojects should be screened by the National Environmental Safeguard Specialist (NESS) and should either be ADB environment category B or C. Category A subprojects are inadmissible for the Project support.

#### 3. No Prohibited Activities

Subproject activities should not be on the ADB prohibited investment activities list (Table 1 presents the list with prohibited activities most relevant to the Project highlighted).

### D. Forestry Activities

Forestry activities here refers to activities on the ground with physical works; it does not refer to planning and analysis, though as noted in point 2, below, this is an essential preparatory requirement.

#### 1. Supportive of the Project Objectives

Forestry activities should be directly supportive of the Project's output 2.

#### 2. Science-based

Proposed activities should be based on landscape scale forest cover analysis supported by field surveys, and should target key fragmentation points.

#### 3. Activities to be Supported

Forestry activities that will be supported under the Project include:

- Targeted Reforestation: as opposed to broad scale reforestation, this is reforestation targeted at areas with specific characteristics, such as providing connectivity. Targeted reforestation can yield benefits disproportionate to the size of the target area.
- Enrichment Planting: the improvement of the percentage of desirable species or genotypes or increasing biodiversity in a forest by interplanting young trees amidst existing forest growth.

- Gap Filling: replanting of gaps (small-scale disturbances) in forest cover.

**Table 1:** ADB prohibited investment activities list

---

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor<sup>21</sup> or child labor;<sup>22</sup>
  - (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,<sup>23</sup> pesticides, and herbicides,<sup>24</sup> (b) ozone-depleting substances,<sup>25</sup> (c) polychlorinated biphenyls<sup>26</sup> and other hazardous chemicals,<sup>27</sup> **(d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,**<sup>28</sup> and (e) transboundary trade in waste or waste products;<sup>29</sup>
  - (iii) production of or trade in weapons and munitions, including paramilitary materials;
  - (iv) **production of or trade in alcoholic beverages, excluding beer and wine,**<sup>30</sup>
  - (v) **production of or trade in tobacco;**<sup>10</sup>
  - (vi) gambling, casinos, and equivalent enterprises;<sup>10</sup>
  - (vii) production of or trade in radioactive materials,<sup>31</sup> including nuclear reactors and components thereof;
  - (viii) production of, trade in, or use of unbonded asbestos fibers;<sup>32</sup>
  - (ix) **commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests;** and
  - (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.
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- **Natural Regeneration:** this method relies on older trees left on the land to provide seed to regenerate sites. Although a natural process, activities may be undertaken to facilitate

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<sup>21</sup> Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

<sup>22</sup> Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" ([www.ilo.org](http://www.ilo.org)).

<sup>23</sup> A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

<sup>24</sup> A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

<sup>25</sup> A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

<sup>26</sup> A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

<sup>27</sup> A list of hazardous chemicals is available at <http://www.pic.int>.

<sup>28</sup> A list is available at <http://www.cites.org>.

<sup>29</sup> As defined by the Basel Convention; see <http://www.basel.int>.

<sup>30</sup> This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

<sup>31</sup> This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

<sup>32</sup> This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

(and protect) the process, including reinforcement planting to supplement natural regeneration on sites lacking sufficient regeneration capacity.

- Nurseries: nurseries of suitable species may be established in low value areas adjacent to target villages.

Under the livelihoods aspect of the Project support may also be provided for small commercial plantations. These should only be sited on low ecological value barren or degraded lands near villages, and not in high value connectivity areas.

#### 4. Species Selection

For targeted reforestation, enrichment planting and gap filling, only tree species native to the Tri-Border Forests biodiversity conservation landscape should be selected. Species should be selected to suit local site conditions, including slope, climatic conditions, existing forest cover, available sunlight, etc. NPA authorities should be consulted during species selection.

For small scale plantations sited in low value degraded areas, fast growing native commercial species may be selected.

Care should be taken to ensure that the Project does not utilize any species that are invasive.

### **E. Small-Scale Infrastructure Activities**

#### 1. Supportive of the Project Objectives

Small-scale infrastructure activities should be directly supportive of the Project's output 3. To the extent possible, they should also provide a linkage to the restoration of biodiversity corridors. For example, establishment of an irrigation system may reduce the pressures of shifting cultivation on an NPA; and construction of a school may be linked to the delivery of conservation education programs targeted at pupils.

#### 2. Low Environmental Impact

Proposed activities should not result in significant environmental impacts, including air and water pollution and impacts on sensitive ecosystems. The screening, categorization and environmental assessment process under the EARF will ensure that any subprojects with significant negative impacts are not supported, and that appropriate mitigations are developed for localized and short-term impacts.

#### 3. Activities to be Supported

Based on initial village surveys and consultations it appears that the most likely infrastructure requests will focus on in sectors such as water and sanitation (community water supplies, household sanitation), buildings and facilities (new or rehabilitation of existing schools, markets), roads (rural link or feeder roads providing access to main roads or markets, and rehabilitation of existing roads), and other sectors.

The list of activities that could be supported includes:

- Water wells

- Small-scale irrigation improvement and water storage
- Community market (linked to NTFPs and other agroforestry products)
- Eco-tourism infrastructure
- Renewable energy (biogas, solar energy etc.)
- NTFPs and agro-processing and marketing

## **E. Livelihood Support Activities**

### 1. Supportive of the Project Objectives

Livelihood activities should be directly supportive of the Project's output 3. To the extent possible, they should also provide a linkage to the restoration of biodiversity corridors.

### 2. Small Scale

All livelihood activities are expected to be small in scale.

### 3. Low Environmental Impacts

Proposed activities should not result in significant environmental impacts, including air and water pollution and impacts on sensitive ecosystems. The screening, categorization and environmental assessment process under the EARF will ensure that any subprojects with significant negative impacts are not supported, and that appropriate mitigations are developed for localized and short-term impacts.

### 4. Activities to be Supported

The list of activities that could be supported includes:

- Home gardens (including organically grown vegetables)
- Agroforestry (fruit trees, intercropping)
- Community forest plantation (timber/fuelwood)
- Nurseries (native and fast growing species)
- Eco-tourism guides, home stays, restaurants
- Agriculture demonstration farms
- Agriculture productivity enhancement (extension)
- NTFPs and agro-processing and marketing

## **Environmental Good Practice Guidelines for Small Scale Infrastructure Construction**

The purpose of this document is to provide guidance to the implementing parties on environmentally sound small-scale infrastructure design and good construction practices. This is meant to assist in subproject design and preparation of subproject IEEs, and to provide guidance during the construction phase.

These guidelines are general in nature and apply to typical infrastructure construction activities. However, due to the range of potential infrastructure works, not all of the guidelines below will be applicable to any one subproject, and they should be utilized to the extent that they are relevant.

## 1. SITE SELECTION & UXO

Site selection is often one of the first stages in small-scale infrastructure development. Identifying sites that are appropriate for the proposed infrastructure will help ensure that the subproject meets its livelihood objectives while at the same time minimizing the area affected and impacts on local people, natural resources and biodiversity.

- Consult with local residents as to the proposed site suitability, and take their views into account.
- Consider whether the construction and operation of the proposed infrastructure will affect neighboring residences. Consult with any potentially affected residences.
- If the infrastructure construction will result in the displacement of people or loss of property or livelihoods, compensation should be provided as per ADB and Government of Lao (GOL) requirements and in accordance with the Project's social safeguard guidelines.
- Assess whether the site has any sensitive ecosystems (wetlands, streams, forests or areas with special habitat or biodiversity values), physical cultural resources<sup>33</sup>, or significant commercial values that will be affected by the infrastructure. If yes, find another more suitable location.
- Assess whether there are any natural hazards at the site (e.g. risk of landslides, flooding) that make it unsuitable. If yes, find another more suitable location.
- Ensure that site has been assessed for, and cleared of, unexploded ordnance (UXO). If there is any doubt coordinate with the relevant provincial department of *Lao UXO* to assess the risk. If a risk is identified a clearance plan, approved by *Lao UXO*, should be developed and implemented.
- Some sites may be near or in National Protected Areas (NPAs). In such cases park authorities should be consulted closely, and no work should be undertaken without their approval.

## 2. LAND CLEARING

Land clearing should be undertaken in a manner which minimizes habitat loss, erosion and water pollution.

- Prior to commencement demarcate the area to be cleared; try to minimize this to the extent practical. Clearing should only be undertaken within this boundary.

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<sup>33</sup> Physical cultural resources (PCRs): movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings and may be above or below ground or under water. Their cultural interest may be at the local, provincial, national, or international level.

Within the Project area these could include:

- Funeral site: graves, cemeteries, shrines, stupas.
- Religious buildings: Temples or Pagodas, complete or ruins.
- Religious objects: Buddhist images or sculpture.
- Sacred sites: sacred caves, forest, hills or cliffs.
- Historical sites or objects: artifacts, tools, relics, memorials.
- Spirit sites: sites residents believe is occupied by a spirit (house, tree, stone, etc).

- Try to maintain trees and vegetation within the building site where possible to provide shade and visual amenity. Try to remove trees only where they impinge directly on the permanent or temporary works.
- Any adjacent sensitive ecosystems should be demarcated as “no go” areas.
- Whenever feasible a vegetation buffer (for example, 5 m) should be preserved along both sides of rivers and major streams.
- Chemical defoliant, herbicides and burning are not allowed. Always favor manual or mechanical slashing methods.
- Drainage and sediment control should be implemented if there is a risk of contaminating adjacent water bodies (see Section 6).
- Cleared vegetation should be used for construction or firewood purposes to the maximum extent possible. Remaining waste vegetation may be stockpiled and burnt only if there are no other good disposal options. To limit forest fire hazards, stockpiles should be located at a safe distance from vegetated areas. Burning should not take place during dry or windy conditions.

### 3. CHANCE FINDS OF PHYSICAL CULTURAL RESOURCES

If a PCR not previously known to be on the site is discovered during land clearing or construction (referred to as a chance find):

- Works in the vicinity of the suspected PCR should be halted and the discovery area should be demarcated and temporarily fenced as a “no-entry” zone. All workers should be informed as to the “no-entry” status.
- The chance find should be reported to the construction site supervisor (if relevant) and the PPMO and NPMO Directors.
- The PPMO Director should inform the relevant Provincial Department of Information and Culture and request an investigation of the chance find.
- The instructions of the Department of Information and Culture on how to deal with the chance find should be carefully followed. This may include procedures to avoid, minimize or mitigate impacts to the PCR, or removal and preservation.
- Records should be maintained of all finds, including chain of custody for movable finds.

### 4. AIR POLLUTION

During some infrastructure construction localized but significant air pollution may be generated.

- Contractors (or other implementing parties) should take all steps necessary to reduce nuisance dust from construction works. This may include:
  - watering the site and access roads on an-as needed basis, especially in residential areas;
  - watering or covering spoil or piles if generating dust;
  - ensuring truck haul loads are covered.
- Burning of waste vegetation should not be undertaken during very dry or windy conditions.
- Burning of oil and petroleum wastes, rubber, plastics and similar materials is not permitted.

## 5. NOISE POLLUTION

Construction noise including machinery operation, blasting, etc., can generate noise levels that may impact local sensitive receptors (nearby residents, schools, hospitals).

- To the extent possible, high noise activities should be kept as far as possible from sensitive receptors.
- High noise activities should only take place between the hours of 08:00 to 18:00 in areas with adjacent sensitive receptors.
- Vehicles and machinery should be equipped with exhaust mufflers in accordance with relevant GOL regulations. Contractors should be required to fit noise shields on high noise construction machinery.
- Workers in high noise situations should be equipped with ear plugs (see Section 14).
- Noise related complaints should be responded to quickly and effectively.

## 6. SOIL EROSION & SPOIL MANAGEMENT

Soil erosion and poor spoil and borrow pit management can lead to sedimentation of nearby watercourses and impacts on aquatic life.

- Earthworks should not take place during the rainy season.
- Avoid erosion and generation of sediment laden runoff through appropriate siting of works (e.g. avoiding steep slopes) and minimization of exposed areas.
- Clean runoff should be diverted around the construction site where possible.
- Treat sediment laden runoff generated by construction activities, borrow pits, etc., prior to entering watercourses through retention in a temporary settling pond or passage through a bioswale (vegetated ditch).
- Sedimentation fences should be used to protect watercourses immediately adjacent to construction sites.
- Spoil stockpiles should be located in existing cleared areas where practical, and as far as practical from any watercourse. They should not be located in river floodplains.
- Final landforms should be stable and vegetated.

## 7. WATER POLLUTION

Fuels, oils and wastewater can cause serious pollution if not managed properly.

- In general, the emission of polluting liquids or other wastes into drains, water courses, or groundwater should not be permitted.
- Concrete or cement washings from the works or drainage from concrete mixing areas should be treated in temporary setting ponds prior to discharge into streams or drains.
- For good worker camps practices, please see Section 10.
- For good fuelling and maintenance practices, please see Section 11.

## 8. WASTE MANAGEMENT

Infrastructure construction activities may generate waste that can have adverse effects on water, soil and air quality. Wastes may include:

- non-hazardous solid wastes including construction and domestic refuse;
- hazardous solid wastes, which represent a risk to human health, property, or the environment due to their physical or chemical characteristics (e.g. they are highly ignitable, corrosive, reactive, or toxic);
- wastewater from construction activities, domestic wastewater from kitchens or showers (grey water), and liquid sanitary waste (black water).

In general, good waste management employs the following principles:

1. Avoid waste generation
2. Reduce waste generation
3. Reuse as much as practical
4. Recycle as much as practical
5. Disposal of any remaining waste in an environmentally suitable manner

More specifically, it is recommended to:

- Provide an adequate number of rubbish bins on each site.
- Separate non-hazardous solid waste such as non-putrescible, putrescible, combustible and hazardous wastes into separate bins.
- Reuse or recycle wastes to the extent possible (e.g. non-putrescible wastes such as plastics, bottles, glass and metal).
- Remaining non-hazardous wastes should be transported for disposal in a suitable landfill or waste disposal facility. If such facilities do not exist in the construction site area:
  - Small amounts combustible wastes may be burnt on-site in a burning barrel.
  - Putrescible (organic) waste may be buried on-site or, with the land-owners permission, in an adjacent pit. Pits should be appropriately covered with soil when no longer in use.
- Hazardous solid and liquid waste should be kept stored in suitable waste bins or containers, and then collected and transported for disposal in a suitable district or provincial hazardous waste disposal facility.
- Wastes of any type (non-hazardous or hazardous) should never be disposed of in sensitive areas including streams and water bodies.
- For good worker camps waste practices, please see Section 10.

## 9. DAMAGE TO PROPERTY, CROPS AND VEGETATION

To avoid damage to adjacent property, crops and vegetation:

- Limit the movement of workers and equipment within the project area and on adjacent land, including access routes.
- Ensure workers and equipment do not enter any sensitive areas that are demarcated as “no-entry” zones.

- On completion of the work all disturbed areas should be rehabilitated (see Section 15).
- Contractors shall be directly responsible for any excessive or unnecessary damage to crops or lands arising from their operations, whether within the project area or adjacent.

## 10. TEMPORARY CONSTRUCTION WORKER CAMPS

Depending on the scale of the construction activities, temporary worker camps may be required. If not managed properly, they can generate wastes and lead to social impacts.

- The location of camps should be discussed and agreed with the local community. If not on the building site, the property owner must also agree to the proposed location.
- Camps should be located outside of environmentally sensitive and flood prone areas, and should be at least a 30 m from streams, rivers and lakes.
- Worker camps should be provided with adequate:
  - temporary shelters (e.g. buildings with corrugated iron roofs or tents) equipped with mattresses and mosquito nets;
  - supplies of potable water (bottled) and food;
  - dedicated area for food preparation, in an open space so as to limit the risk of forest fires;
  - facilities for washing, with appropriate drainage/infiltration of used water;
  - adequate sanitary facilities. Depending on the scale of the construction this may range from temporary pit toilets to portable toilets with holding tanks. For the latter, sewage waste shall be collected regularly and disposed in an environmentally appropriate manner.
  - waste collection and disposal facilities, as described in Section 8.
- Workers should not be allowed to making fires outside of the cooking area, relieve themselves other than in the camp toilets, or hunt or trap wildlife.

## 11. FUELLING AND MAINTENANCE OPERATION

Improper fuelling, storage of fuels and oils, and maintenance can result in water pollution and risks to aquatic life and local water sources.

- If possible, avoid mobile fuelling of construction equipment around the site; instead designate a fuelling area, equipped with secondary containment such as drain pans or drop cloths, and a readily accessible stockpile of spill cleanup materials.
- Fuels and oils should be stored in the designated fueling area. The storage area should be equipped with adequate protective measure to confine and retain accident spillage of fuel and oil stores.
- Maintenance of vehicles and equipment site should only be undertaken on-site if secondary containment measures are in place.
- Used oils, hydraulic fluid, grease, filters, batteries, etc., should be stored in appropriate containers at the designated fueling area and recycled if possible, or disposed in appropriate manner.

- Washing of vehicles should not be undertaken in streams or rivers and instead should be confined to designated areas which do not drain directly to water bodies.
- On-site vehicles and equipment should be regularly inspected for leaks and repaired immediately.
- Workers should be trained on proper fuelling, maintenance and spill cleanup procedures.

## **12. VEHICLE OPERATION & TRAFFIC CONTROL**

During construction trucks and machinery may pose a risk to the safety of workers and the public if traffic regulations are not followed and vehicles are not operated safely.

- Project transportation activities should be planned carefully so as to avoid traffic congestion.
- All drivers should have appropriate driving licenses and training.
- Access and other roads that will receive heavy construction traffic should be posted with signs in Lao giving speed limits and safety warnings (e.g. for sharp curves, crests, crossings, etc.). The maximum speed limit within construction sites and inhabited areas should be 40 km/h or less.
- On-road parking should be discouraged, and a designated parking location should be established on-site.
- Truck loads should be covered to avoid falling gravel, stones or other materials.
- Truck and vehicles safety systems (brakes, tires, lamps, horn, etc.) should be functional and inspected regularly (at least every 3 months).
- Drivers should be prohibited from the use of alcohol or drugs while working or in worker camps.
- Penalties should be applied for drivers caught speeding or using alcohol or drugs.

## **13. WILDLIFE**

Hunting or collecting wildlife by workers may have a biodiversity impact, especially when in, or adjacent to, NPAs.

- All workers and staff should be prohibited from wildlife hunting, collecting, trapping, sale and consumption.
- Possession of rifles, traps and nets by workers is not allowed while working or in workers camps.
- Possession and raising of wildlife is prohibited.

## **14. HEALTH & SAFETY**

Infrastructure construction can pose a risk to the health and safety of workers and local residents.

- Identify and minimize, so far as reasonably practicable, the causes of potential hazards to workers and residents.

- Provide workers with appropriate personal protective equipment (PPE) as necessary to minimize risks, including ear protection, hard hats, safety belt and safety boots.
- Ensure workers are familiar with the location of emergency services (fire, hospitals) and how to access them in an emergency.
- Provide adequate signage and/or barriers in high risk areas, both for workers and local residents.
- Provide procedures for limiting exposure to high noise or heat working environments in compliance with relevant national noise standards for construction sites.
- Provide training for workers, and establish appropriate incentives to use and comply with health and safety procedures and utilize PPE.
- Document and report occupational accidents, diseases, and incidents.

#### **15. SITE REHABILITATION**

Once construction is complete the site should be rehabilitated. This can include:

- The removal of all temporary structures and closure of latrines.
- The removal of all equipment, and the safe disposal or recycling of all construction and demolition wastes and remaining construction materials.
- Appropriate site landscaping and revegetation of disturbed surfaces.

### Appendix 6: BCC Subproject Environmental Compliance Inspection Form

**Subproject** : \_\_\_\_\_ **Contractor/Implementing Agency:** \_\_\_\_\_

**Sector** : \_\_\_\_\_ **Inspection Date** : \_\_\_\_\_

**Location** : \_\_\_\_\_ **Reporting Period:** \_\_\_\_\_

**1. Mitigation Compliance Inspection**

Mitigation Measure	Mitigations Implemented	Mitigations Effective? (1 to 5)*	Impact Observed / Location	Action Required	Contractor Response / Comment
e.g.: - Permits obtained? - Dust control measures in place? (Column to be based on subproject IEEs)					

\* Mitigation Effectiveness Rating Criteria

1. Very Good (all required mitigations implemented)
2. Good ( the majority of required mitigations implemented)
3. Fair (some mitigations implemented)
4. Poor (few mitigations implemented)
5. Very Poor (Very few mitigations implemented)

**2. Environmental Incidents During Reporting Period (if relevant)**

Environmental Incidents (accidents, spills, complaint)	Date	Reported by	Description / Location	Action Taken	Further Action Required	Comments

**3. Summary of Actions Required and Follow-up (if relevant)**

Action Required	Timeframe (e.g. within one week)	Responsible Parties	Follow-up (to be completed if actions are required)
			Required Action Taken:
			Effectiveness:
			Prepared by:
			Date:

Inspection Completed by: \_\_\_\_\_ Date: \_\_\_\_\_

Signature:

**Add Attachments as appropriate** (e.g. list of inspection participation, map(s) showing sites, etc. Photographs are especially useful)

## Appendix 7:

### Suggested format for BCC semi-annual Environmental Progress Reports

As part of the overall Project reporting to ADB, the NESS will prepare semi-annual environmental progress reports that summarize the status of the subproject environmental assessment processes, subproject environmental monitoring, and any compliance issues and corrective actions. A sample outline which can be adapted as necessary is provided below. Ranking systems for compliance, mitigation effectiveness, etc., are indicative examples only and can be modified or disregarded as appropriate.

- 1. Introduction and Report Purpose**
- 2. Subproject Environmental Assessment**  
Status of subproject screening, categorization and environmental assessment. Identification of key issues encountered in the environmental assessment process (if any) and the means by which issues have been, or will be, addressed.
- 3. Environmental Monitoring**
  - 3.1. Summary of Compliance Monitoring Inspections Activities
  - 3.2. Assessment of Mitigation Compliance<sup>34</sup>
  - 3.3. Assessment Mitigation Effectiveness<sup>35</sup>
- 4. Key Environmental Issues**
  - 4.1.1. Key Issues Identified
  - 4.1.2. Action Taken
  - 4.1.3. Additional Action Required
- 5. Conclusion**
  - 5.1. Overall Progress of Implementation of Environmental Management Measures<sup>36</sup>

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<sup>34</sup> Overall compliance with mitigation implementation requirements could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (all required mitigations implemented)
2. Good (the majority of required mitigations implemented)
3. Fair (some mitigations implemented)
4. Poor (few mitigations implemented)
5. Very Poor (very few or no mitigations implemented)

Additional explanatory comments should be provided as necessary.

<sup>35</sup> Effectiveness of mitigation implementation could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (mitigations are fully effective)
2. Good (mitigations are generally effective)
3. Fair (mitigations are partially effective)
4. Poor (mitigations are generally ineffective)
5. Very Poor (mitigations are completely ineffective)

Additional explanatory comments should be provided as necessary.

5.2. Problems Identified and Actions Recommended

**Appendices**

1. Subproject Inspection Reports
2. Photographs
3. Others

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<sup>36</sup>Overall sector environmental management progress could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good
2. Good
3. Fair
4. Poor
5. Very Poor

Additional explanatory comments should be provided as necessary.