

Environmental Assessment and Review Framework

August 2011

Lao PDR: Nam Ngum River Basin Development Sector Project Additional Financing

Prepared by the Ministry of Agriculture and Forestry for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 11 August 2011)

Currency Unit	–	Kip (KN)
KN1.00	=	\$0.00012495
\$1.00	=	KN8,003

ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Francaise de Development
CPC	–	Committee for Planning and Cooperation
DAFO	–	District Agriculture and Forestry Office
HPO	–	Hydropower Office
IWMU	–	Integrated Water Management Unit
LFNC	–	Lao Front for National Construction
LWU	–	Lao Women's Union
MAF	–	Ministry of Agriculture and Forestry
MOF	–	Ministry of Finance
MIH	–	Ministry of Industry and Handicraft
NAFES	–	National Agriculture and Forestry Extension Service
NGO	–	Non Government Organization
NNRB	–	Nam Ngum River Basin
NTFP	–	Non Timber Forest Products
ONPM	–	Office of National Project Manager
PAFS	–	Provincial Agriculture and Forestry Service
PIU	–	Project Implementation Unit
PPMS	–	project performance management system
WRCC	–	Water Resources Coordination Committee
WREA	–	Water Resources and Environment Administration
NNRBC	–	Nam Ngum River Basin Committee
NNRBCS	–	Nam Ngum River Basin Committee Secretariat

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I. INTRODUCTION

1. The Nam Ngum River Basin Development Sector Additional Financing Project aims for the optimal use of water resources, especially in the Nam Ngum River Basin (NNRB). The outcome will be integrated watershed management improved in the NNRB through four expected outputs: (i) Nam Ngum River Basin Committee Secretariat (NNRBCS) strengthened for sub-basin management, (ii) district land use planning enhanced, (iii) agricultural support services improved, and (iv) institutional and human resource capacity strengthened for project implementation. The project design will principally draw on experiences under the current project, Loan1933-Lao: Nam Ngum River Basin Development Sector Project (NNRBDSP).

2. The additional financing project will use the similar approach, methodologies and implementation arrangements. Some activities will deepen collaboration among central agencies, provinces, districts, and villages through institutional capacity development; others will continue and expand the coverage of target villages within the NNRB. The project activities will have the similar nature and magnitude with those of the current project in terms of environmental and social safeguard impacts. The expected project activities will be: (i) institutional and human resources capacity development, (ii) disseminating developed watershed land continuum plans and improving land use planning at the district level, and (iii) consolidating and expanding sustainable agricultural extension services including khet (village cluster) extension service center (KESC) and village development revolving fund (VDRF) operations in ongoing and additional villages.

3. The objective of this Environmental Assessment and Review Framework (EARF) is to set forth procedures for a screening process to categorize project activities in each target village according to their environmental sensitivity and, where needed, to update existing initial environmental examinations (IEEs) and their environmental management plans (EMPs) to address site specific issues in accordance with government's requirements and ADB's Safeguard Policy Statement (SPS, 2009).

II. ENVIRONMENTAL ASSESSMENT UNDER CURRENT PROJECT

4. The NNRB as the project area comprises (i) the Nam Ngum river drainage area and (ii) part of the Mekong river drainage area. The reason for including land between the Nam Ngum drainage area and the Mekong River is to avoid the need to develop an independent plan for the small narrow piece of land which includes the capital city of Vientiane. The total area is 18,701 square kilometers (km²). The area includes 23 sub-watersheds in 16 districts as well as part of the National Biodiversity Conservation Areas (NBCAs).

5. During the preparation of the current project, an IEE with an EMP was prepared for the whole project. The IEE considered the project would provide sustainable livelihood opportunities to local communities and lessen human pressure on critical watersheds, and that the environmental impacts from construction under the current project and its operation would be minor and could be minimized to acceptable levels using mitigation measures. The current project was, therefore, classified as environmental category B. It was required that project activities to be implemented under the watershed management component of the project should go through an environmental review approximately equivalent to the level of review undertaken in a typical IEE. It was agreed with the Science, Technology, and Environment Agency (STEА)¹ that an IEE for each sub-watershed could be submitted to the respective provincial office of

¹ STEА became part of the Water Resources and Environment Administration (WREA), which was subsumed under the Ministry of Natural Resources and Environment (MoNRE) which was newly established in June 2011.

STEAs for approval, considering the size of the sub-watersheds and the limited environmental impacts.

6. The project had the following subproject selection criteria: (i) unit of target area is a sub- or micro-watershed; and (ii) an IEE of the target sub- or micro-watershed is undertaken to ensure that the proposed project activities will not have any detrimental impact on the environment.

7. The selection criteria required potential target areas or sub-watersheds were prioritized based on studied land-use patterns (e.g., high level of degradation and biodiversity loss) using the geographical information system (GIS). Social and economic characteristics of the sub-watersheds (e.g., poverty incidence, status of ethnic group population and women) were studied through participatory rural assessment as well as demonstrated development potential (e.g., large degraded areas and critical mass of people who would support project activities). Those sub-watersheds where 25% or more of the population was living below the poverty line were preferred. 19 IEEs have been prepared within the NNRB under the current project (Table 1).

Table 1: List of IEEs Prepared

Sub-watershed	District	Province	IEE
Nam Kho,	Pek, Phaxay,	Xiengkhouang,	Prepared
Nam Ting	Phoukhoun	Luangprabang	Prepared
Nam-Thom-Kha-Pieng	Pek	Xiengkhouang	Prepared
Nam Chat-Phae	Phoukout	Xiengkhouang	Prepared
Nam Cheng	Toulakhom, Viengkham, Phonhong, Keo Oudom	Vientiane	
Nam Xouang	Toulakhom, Phonhong, Naxaythong	Vientiane, Vientiane Capital	Prepared
Houay Kangban	Toulakhom, Viengkham, Keo Oudom, Pak Ngum, Xaythani	Vientiane, Vientiane Capital	Prepared
Nam Lik	Phonhong, Feuang, Hinheup, Keo Oudom	Vientiane	
Hin Nam Nor	Xaysomboun	Vientiane	Prepared
Nam Pha-Yen	Xaysomboun	Vientiane	Prepared
Nam Mo	Xaysomboun	Vientiane	Prepared
Nam Chia-Hao	Xaysomboun, Hom	Vientiane	Prepared
Nam Phay-Kamang	Phoun	Vientiane	Prepared
Nam Mouay	Phoun	Vientiane	Prepared
Nam Pat	Phoun, Vang Vieng, Hinheup	Vientiane	Prepared
Nam Xan	Hom	Vientiane	Prepared
Nam Yen	Hom	Vientiane	
Nam Niep	Hom	Vientiane	
Yot Lik	Kasy	Vientiane	Prepared
Nam Song	Vang Vieng	Vientiane	Prepared
Nam Tong	Feuang	Vientiane	Prepared
Nam Thon (non Nam Ngum drainage)	Hinheup	Vientiane	
Houay Chiam	Pak Ngum, Xaythani	Vientiane Capital	prepared
Nam Houm	Naxaythong, Xaythani	Vientiane Capital	Prepared
23	16	4	19

III. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

A. Policy, Legal, and Administrative Framework

8. The Environmental Protection Law (Decree 068/PM, 1999, EPL) lays a foundation for environmental impact assessment (EIA) procedures together with the associated Decree on the EPL Implementation (2002). The Decree was revised into the Decree on Environmental Impact Assessment (16 February 2010). The Water Resources and Environment Administration (WREA) is responsible for policy, rules, regulations and guidelines related to environmental quality, and sets out standards and approval procedures for EIAs including IEEs for development projects. The provincial offices of WREA are responsible for implementing EPL and the decree in the province, including monitoring, enforcement and review and approval of IEEs for smaller scale projects.

B. Village Selection Criteria

9. Under the watershed management component, the additional financing project will directly invest in income and livelihood enhancement activities through agriculture, forestry, fisheries and rural cottage industries within specific villages. Following the practice of the current project, the additional financing project will prioritize potential target villages based on the following preferences to maintain project performance. The Office of the National Project Manager (ONPM), in collaboration with target provinces, districts and villages, will prepare a matrix justifying the selection with relative ranking.

- (i) villages that are already included in the development plans of the district;
- (ii) villages in the upper watersheds with some exception in the lower watershed where justified;
- (iii) villages which have a significant number of strong desire and readiness to participate;
- (iv) villages which have a significant number of poor and/or ethnic households; and
- (v) villages that have limited access.

C. Screening and Categorization Process

10. Existing IEEs will need to be updated for project specific issues and the IEEs will need to be consistent with the new ADB's Safeguard Policy Statement (2009) requirements, including grievance redress mechanism and occupational health and safety. The ADB's Safeguard Policy Statement requires that project screening and categorization should be undertaken at the earliest stage of project preparation when sufficient information is available for this purpose. The screening and categorization is undertaken to (i) reflect the significance of potential impacts or risks that a project might present; (ii) identify the level of assessment and institutional resources required for the safeguard measures; and (iii) determine disclosure requirements.

11. ADB uses a classification system to reflect the significance of project's potential environmental impacts. A sub-project's category is determined by the category of its most environmentally sensitive component, including direct, indirect, cumulative, and induced impacts in the sub-project's area of influence.

12. A set of project activities within each target village is considered to be a sub-project. Each proposed sub-project will be scrutinized as to its type, location, scale, and sensitivity and the magnitude of its potential environmental impacts. Through a screening process during annual work planning, each sub-project will be assigned to one of the following three categories:

- (i) **Category A:** a proposed sub-project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works (an environmental impact assessment is required).
- (ii) **Category B:** a proposed sub-project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A sub-projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A sub-projects. An IEE is required.
- (iii) **Category C:** a proposed sub-project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

13. Where sub-project activities are proposed that were not considered in the existing IEEs, an ADB's relevant Rapid Environmental Assessment (REA) Checklist, shown at the end of the document, should be used to screen the sub-projects and to assign sub-projects to the above listed categories. Sub-project selection and screening will ensure that only sub-project activities that qualify for ADB Category B or C will be included in the list of eligible sub-projects for possible funding under the additional financing project. Where any of planned sub-project or village activities falls into Category A, such an activity will not be included in the annual work plans. In the case that sub-projects are assessed as Category C, no further environmental assessment will be required. Where sub-projects are assessed as Category B, existing IEEs and associated EMPs should be updated to reflect the new activities and their site specific management and monitoring requirements in consistent with the ADB's SPS as well as the government's requirements. In order to ensure the compliance with the latest government's requirements and procedures, STEA will be consulted with for the first sub-project plan for each category to establish detailed procedures.

D. Indicative Mitigation Measures

14. Following the current EMP and experiences under the NNRBSDP, anticipated damages or risks of expected project activities include: (i) loss of natural and social resources due to expansion of intensive production activities in cropping, livestock, forestry and fisheries; (ii) misuse of fertilizers, pesticides and herbicides; and (iii) risks which might be caused newly introduced seeds and breeds, and (iv) impacts from civil works construction and operation. Proposed mitigation measures include: (i) appropriate site selection for project activities, (ii) introduction of environmentally sustainable farm and forest practices, (iii) introduction of tested varieties and agricultural inputs; and (iv) minimization of the impacts of small-scale construction works. Indicative mitigation measures in the current EMP are updated in the Table 2. Specific mitigation measures for each sub-project activities will be explored during discussions for the village development plans and project annual work plans after target villages are selected during the project implementation.

Table 2: Indicative Mitigation Measures

Activities potentially affecting Environmental resources and values	Anticipated damage or benefit to the natural or social environment	Proposed mitigation measures
Agricultural support services		
1. Crop, livestock and fishery production improvement		
Physical expansion of crop area. Increase in numbers of livestock and encroachment.	Loss of precious ecological resources, and historical or cultural sites. Animal defecation causes water course pollution.	Careful site-selection of project activities the sensitivities. Village level planning for livestock includes measures to keep livestock out of riparian areas and streams through appropriate fencing and off-stream watering points where practical.
Improved productivity	Misuse of chemical fertilizers and pesticides negatively affect soil and water quality, causing health and pollution problems. Removed pressure to forest increases biodiversity.	Train farmers on environmentally appropriate farming practices. Promote organic fertilizers and integrated pest management techniques.
Introduction of new crops and fodder or imported breeds.	Alien species invades conventional species. Imported varieties and breeds cause disease problems.	Promote tested species/breeds or hybrid seeds that produce infertile offspring.
2. Forest management		
Disturbance or exclusion of conventional practices and historical or cultural sites.	Loss of productive areas, precious ecological resources, and historical or cultural sites.	Careful site-selection of project activities the sensitivities.
Introduction of new species.	Alien species invades conventional species. Predominance of deciduous species may exacerbate soil erosion.	Promote tested species. Where possible, high value native forestry species be considered rather than exotic species. Limit deciduous species less than 50% of the mixture. No planting on slopes greater than 20% degrees without contour planting.
Promotion of Non Timber Forest Products (NTFPs).	Overexploitation of NTFPs.	Training for sustainable NTFP use.
Nursery construction	Soil erosion. Water pollution. Workers health and safety.	Establish on flat land with gravel base. Use of slow release fertilizers. Proper drainage. Enforce personal protective equipment and medical facilities.
Seed collection	Existing forest depletion.	Local protocols for sustainable seed collection be established, with specific protection for any rare or threatened species.
Herbicide use (e.g., Glyphosate)	Damages on non target species.	Use proper equipment on days with no wind and rain.
Fertilizer application	Leaching to water courses.	Use small quantities next to individual trees.
3. Improved village infrastructure		
Physical construction works (e.g., small-scale irrigation systems, rural road, and water supply systems)	Soil erosion and Water pollution. Workers health and safety.	Promote plant cover, where applicable. Careful treatment of soil, especially works in riparian areas. Enforce personal protective equipment.
4. Land use planning	Exclusion from conventional use of land and water resources. Improved capacity and management facilitate sustainable use and conservation of natural resources.	Involve concerned provinces, districts and communities into planning process.

E. Implementation Arrangements

15. **Institutional arrangements.** The ONPM and the National Agriculture and Forestry Extension Service (NAFES) will take overall responsibility for the compliance with this framework and other environmental safeguard requirements of the government and ADB. Project staff will review the respective existing IEEs for screening and categorization of planned project activities at each village. Each District Agriculture and Forestry Extension Office (DAFO) will assign an environmental officer to assist and monitor villagers' and contractors' compliance with these requirements. An environmental officer in the ONPM, assisted by an environmental safeguard specialist, will support these district environmental officers.

16. When existing IEE are required to update, ONPM, with assistance of an environmental safeguard specialist, will conduct necessary survey in collaboration with NAFES, DAFOs, and communities, and prepare draft IEEs for the approval of WREA and ADB, following the established procedures in accordance with the ADB's Safeguard Policy Statement (2009) and the government's requirements.

17. **Information disclosure and consultation.** Developed IEEs need to be disclosed following ADB's Public Communications Policy. The updated IEEs will be uploaded on ADB's website upon receipt from the government. The IEEs will be accessible from stakeholders upon request. Beneficiaries and stakeholders will be fully consulted with about the IEEs as well as project planning and implementation through village meeting and focus group discussion.

18. **Monitoring and reporting.** District environmental officers will conduct environmental monitoring in collaboration with other project staff and villagers, as part of the monitoring and evaluation of the project progress. The ONPM will support and supervise the district environmental officers. The district environmental officers will provide the ONPM with reports on the implementation and performance of the EMP together with quarterly progress reports for the submission to the project steering committee (PSC), STEA and ADB. An environmental specialist will conduct field visits for monitoring as required. Any related implementation issues will be reported and will be brought to the attention of ADB and the MAF, the executing agency.

19. **Grievance redress mechanism.** A well-defined grievance redress and resolution mechanism will be established to address grievances and complaints in a timely and satisfactory manner. The objective is to resolve complaints as quickly as possible and at the local level through a process of conciliation; and, if that is not possible, to provide clear and transparent procedures for appeal. The initial focal points to accept complaints due to the project will be concerned DAFOs, the implementing units at the local level. Implementing agencies and the MAF, the executing agency will act on these complaints as efficiently as possible. ADB will also maintain channels to receive complaints due to the project. In addition, representatives of the Lao Front for National Construction (LFNC) and Lao Women's Union (LWU) will visit project sites periodically and monitor consultation and planning processes. These field visits will also service as part of the grievance redress mechanism.

20. **Budget and financing.** Updating and implementing IEEs and EMPs are part of the project's mainstream activities to achieve the outputs. Costs for these activities will be financed by the loan proceeds. These costs will include inter alia expenditures for an environmental safeguard specialist (12 person-months) and a monitoring and evaluation specialist (12 person months). The government will finance project staff time and accommodation including environmental officers.

Annex 1

Rapid Environmental Assessment (REA) Checklist

Instructions:

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.

Project Title:

Lao: Nam Ngum River Basin Development Sector Project Additional Financing

Village/District:

Screening Questions	Yes	No	Remarks
A. PROJECT SITING			
IS THE PROJECT AREA ADJACENT TO OR WITHIN ANY OF THE FOLLOWING ENVIRONMENTALLY SENSITIVE AREAS?			
▪ CULTURAL HERITAGE SITE			
▪ LEGALLY PROTECTED AREA (CORE ZONE OR BUFFER ZONE)			
▪ WETLAND			
▪ MANGROVE			
▪ ESTUARINE			
▪ SPECIAL AREA FOR PROTECTING BIODIVERSITY			
B. POTENTIAL ENVIRONMENTAL IMPACTS			
WILL THE PROJECT CAUSE...			
▪ impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?			
▪ disturbance to precious ecology (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased air pollution due to project construction and operation?			
▪ noise and vibration due to project construction or operation?			
▪ involuntary resettlement of people? (physical displacement and/or economic displacement)			

Screening Questions	Yes	No	Remarks
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?			
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
▪ generation of solid waste and/or hazardous waste?			
▪ use of chemicals?			
▪ generation of wastewater during construction or operation?			