

GMS BIODIVERSITY CONSERVATION CORRIDORS IN CAMBODIA, LAO PDR AND  
VIET NAM

**INITIAL ENVIRONMENTAL EXAMINATION**

11 September 2010

## **A. Introduction**

1. The Greater Mekong Subregion (GMS) Biodiversity Conservation Corridors Phase II Project will enhance arrangements for securing critical ecosystems and environmental quality in GMS economic corridors. Project implementation is expected to start in 2011 and is to be completed in 2018. The Project will include investments in Cambodia, Lao PDR and Viet Nam.

2. The Project has biodiversity conservation as its objective and will generate overwhelming environmental benefits. There are also a few potentially adverse impacts associated with some of its activities due to their location or design, and both during construction and operation. An Initial Environmental Examination<sup>1</sup> (IEE) was carried out to comply with the requirements of the ADB Safeguard Policy Statement<sup>2</sup> following the 2003 ADB Environmental Assessment Guidelines<sup>3</sup>. The IEE has been prepared based on (i) a review of Project-related documents<sup>4</sup> and literature; (ii) site visits; (iii) consultation with national and local authorities and stakeholders; (iv) analysis of typical environmental impacts of project activities and identification of suitable mitigation measures; and (v) a review of national institutional and regulatory frameworks for environmental safeguarding.

## **B. Description of the Project**

3. The impact of the proposed Project will be climate-resilient transboundary biodiversity conservation corridors sustaining livelihoods and investments in Cambodia, Lao PDR, and Viet Nam. The outcome of the proposed Project will be that by 2018, GMS Biodiversity Conservation Corridors are established with supportive policy and regulatory frameworks in Cambodia, Lao PDR and Viet Nam, maintaining ecosystem connectivity and services. The proposed Project is designed as a regional investment project in two provinces in Cambodia (Koh Kong and Mondulakiri), three provinces in Lao PDR (Champasak, Xekong and Attapeu), and three provinces in Viet Nam (Quang Tri, Thua Thien Hue and Quang Nam).

4. The outputs of the Project are (1) institutions and communities are strengthened for biodiversity conservation; (2) biodiversity corridors are restored, ecosystem services are protected and sustainably managed by local resource managers; (3) livelihoods are improved and small-scale infrastructure is supported in target villages and communes; and (4) project management and support services. The Project takes a sector-like approach to many of its activities. Within the overall Project context, specific activities and locations will be determined during project implementation; these activities are referred to as subprojects.

## **C. Description of the Environment**

5. The Project area includes the Central Annamites in Viet Nam and Lao PDR, the Tri-Border Forest landscape in Lao PDR, and the Eastern Plains Dry Forest and the Cardamom Mountains in Cambodia. In Viet Nam, the Project aims at establishing sustainable north-south connectivity between Ngoc Linh/Song Thanh Nature Reserves and proposed Sao La Nature Reserves while also connecting with the Xe Xap National Protected Area (NPA) in Lao PDR. It will further link with the Phong Dien Nature Reserve and Huong Hoa Nature Reserve. In Lao PDR, three corridors will be established, linking Xe Pian National Biodiversity Conservation

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<sup>1</sup> The project is categorised as an environmental category B project in accordance with the 2009 Operational Procedures (OP)<sup>1</sup> for safeguard review.

<sup>2</sup> ADB. 2009. *Safeguard Policy Statement*. Manila.

<sup>3</sup> ADB. 2003. *Environmental Assessment Guidelines*. Manila.

<sup>4</sup> Including BCI Phase I pilot site implementation reports (ADB TA 6289).

Area to Dong Ampham NPA, linking Dong Hua Sao NPA with Xe Pian NPA and linking Dong Ampham NPA with Xe Xap NPA. In Cambodia, the Project will establish conservation corridor linkages in Koh Kong province between the Central Cardamom Protected Forest (PF) and the Southern Cardamom PF, the Botum Sakor National Park and Peam Krasop Wildlife Sanctuary (WS). In the eastern Mondulhiri province, biodiversity conservation corridor functionality will be established between Lomphat WS, Mondulhiri PF, Phnom Prich WS and Seima PF.

6. A common characteristic of all the Project areas is that they are mostly mountainous and covered by forest or have recently been deforested or otherwise degraded. The landscapes are intersected by numerous rivers draining the large amounts of rain of at least one wet monsoon season which is alternated by periods of relative drought. This has resulted in a diverse landscape with dense, evergreen forest, deciduous dipterocarp forests, and numerous other vegetation types, including degraded natural vegetation affected by logging and shifting cultivation. Loss of natural vegetation and fragmentation is more recently also caused by cash-crop concessions, mining, roads and hydropower development.

7. The Project area is very rich in terms of biodiversity and is home to a large number of globally endangered species and habitats; much remains unexplored and new species are regularly found<sup>5</sup>. Transitions are present between temperate and tropical systems, there are large gradients in elevation (sea level to 2,598 m) and high habitat diversity is found in relatively small areas (e.g., Bach Ma PA, with habitats ranging from coastal lagoons to montane forest). The natural ecosystems are the source of a vast amount and array of ecosystem services, locally and globally.

8. Among the mammals of biodiversity conservation interest in the Project area are Asian elephant and tiger, clouded leopard, dhole, gaur, banteng, gibbons, bats, macaques, bears, Sunda pangolin, smooth-coated otter, fishing cat, doucs, Germain's silver langur, Eld's deer, saola, muntjacs, southern serow, pygmy loris, and Javan rhinoceros. There are several hundreds of bird species present in the Project area, including a large number of endangered species: ibises, sarus crane, white-winged duck, woolly-necked stork, adjutants, river tern, masked finfoot, green peafowl, hornbills and pheasants. There are also small populations of three species of globally near-extinct vultures. The rivers of the Project area are home to Irrawaddy and humpback dolphins, as well as the critically endangered Siamese crocodile and a number of nearly extinct endemic turtles. Endangered amphibians include the Annam flying frog.

9. Sites of archaeological and cultural significance in the Project area include burial sites, ranging from Neolithic jars to modern necropolises. The forests and their components are of great significance for the local communities, especially the ethnic groups whose ancestral grounds lie inside the Project area. The cultural value for them lies with traditional food and medicines obtained from the forests of the mountains.

10. Most of the sparse population in the Project area consists of ethnic groups. Livelihoods are generally based on (rainfed) rice cultivation, fishing, collecting and trade of non-timber forest products (NTFPs), mostly at a subsistence level, and often as part of shifting cultivation. Many households are structurally food insecure. Poverty in the Project areas is very high and is caused by many factors, including difficult environmental conditions (terrain, access to water), inadequate infrastructure, weak natural resource management, inadequate conservation

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<sup>5</sup> Including large mammals such as saola (*Pseudoryx nghetinhensis*) and large-antlered muntjac (*Muntiacus vuquangensis*).

policies, limited human resources, and, in certain areas, the long-term effects of war (unexploded ordnance).

#### **D. Forecasting Environmental Impacts and Mitigation Measures**

11. The most significant impact of the Project is expected to be positive and will be generated by restored connectivity between fragmented forests. Improved livelihoods and community infrastructure, increased natural resources management capacity and additional biodiversity conservation skills will further contribute to sustaining the environmental benefits generated by the Project. Possible negative impacts are expected to be generally minor or insignificant, and are related to the location and design of the Project and its activities, and to construction and operation activities. They include localised pollution (waste, pesticides, dust, noise), changes to drainage (erosion, sedimentation, water quality, flooding), erosion, risk of landslides, landscape modifications, habitat loss, impact on cultural heritage elements, distribution of invasive species, introduction of inappropriate species, inappropriate (forest) habitat structure creation, mobilisation of dioxin in polluted soils, and traffic hazards.

12. The assessment of the potential environmental impact of the Project activities was done against the background of existing environmental issues in the Project area: (1) Deforestation and plantation agriculture. These are related to logging, shifting cultivation, roads construction, water reservoir creation, cash crop plantations and mining activities. (2) Hydropower generation. Several hydropower schemes have been completed and many more are planned or under construction. (3) Unexploded ordnance. The recent wars in the region have left large amounts of unexploded ordnance (UXO) scattered throughout the Project area. (4) Mining. There are several dozen large mining concessions (gold, bauxite, ores, coal) in the Project area. (5) Invasive species proliferating on ruderal or disturbed lands. (6) Tourism infrastructure development. (7) Defoliant and herbicide residues. In the 1960s and early 1970s wars, extensive areas of forest and food crops in the Project area were sprayed with defoliant herbicides. A number of hot spots of resulting dioxins pollution still exist.

13. There may be other potential environmental impacts from Project activities and subprojects that will be formulated during Project implementation. The above description will cover most and the Environmental Assessment and Review Framework (EARF) procedures will ensure that any other impacts are identified and addressed in due course.

#### **E. Institutional Requirements and Environmental Monitoring Plan**

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

15. 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 provincial project management units. 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.

16. In addition to the mitigation measures identified and described here, there is a provision under the EARP for additional specific mitigation measures to be identified and implemented.

17. It is recommended that performance monitoring for environmental safeguarding is undertaken six-monthly during the initial three years of the Project and annually thereafter. The frequency of monitoring of specific risks such as slope instability or erosion must be adjusted as required. Environmental Assessment and Review Procedures (EARP) may identify additional monitoring requirements based on the specific subprojects that will be formulated.

18. The six-monthly reports on environmental performance by the Project will be prepared by a National Environmental Safeguarding Specialist (NESS), attached to the Executing Agency for the Project at the interprovincial level. These reports will be submitted to the national overseeing entity, as well as ADB, for approval. In addition, the EARP will define a monitoring and reporting schedule for the subprojects based on the Project work plans. Monitoring and reporting will be carried out in accordance with ADB requirements, as well as any conditions that may be imposed by the national environmental safeguarding authority<sup>6</sup>.

19. The owners of the Project<sup>7</sup> are responsible for compliance with the ADB and the respective national environmental safeguarding requirements. They will oversee the project activities as they are implemented through provincial project management units. Villages, communes and district level local authorities will be involved in Project implementation, in particular in the management of the village and commune development funds. Other technical agencies will provide support services to the provinces.

20. The focus of the environmental safeguarding activities of the Project lies with the prevention and minimising of negative environmental impact during identification of the subprojects. The design, planning and approval phase of subprojects is therefore a critical time during which the foundations for minimal negative environmental impacts are laid. In addition, there will be a second important moment for environmental monitoring during the construction phase of the subprojects. The specific monitoring requirements will be determined during the design of the subprojects and the timing will match the implementation schedule of the subprojects. During operation of the subprojects, environmental monitoring will be carried out as appropriate in function of the characteristics of the activity and of the anticipated possible impact.

## **F. Public Consultation and Information Disclosure**

21. Consultations have taken place throughout the PPTA among central, provincial, district and commune level stakeholders, as well as with the beneficiary communities and villages and implementation partners. Throughout the range of stakeholders, there was widespread support for the Project and its objectives, in particular in areas where the BCI Phase I activities had been implemented. The main environmental concerns at village and commune level related to resettlement, flooding, landslides and food security.

22. The issues that have been identified have all been addressed in the design of the Project. The Project will not undertake any activities that would result in forced or economic

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<sup>6</sup> Ministry of Environment (MOE) in Cambodia, Water Resource and Environment Administration (WREA) in Lao PDR and Ministry of Natural Resources and Environment (MONRE) in Viet Nam.

<sup>7</sup> Forestry Administration (FA) in Cambodia, Provincial Agriculture and Forestry Offices (PAFO) in Lao PDR and Provincial People's Committees (PPC) in Viet Nam.

resettlement of people. Risks of flooding and landslides have been incorporated as attention points in the environmental monitoring. Food security issues will be supported through the livelihoods development activities of the Project.

23. Subprojects will take the considerations of the public into account. The Environmental Assessment and Review Framework has been designed in a way to ensure that the views of all stakeholders are collected and considered and responded to. The Project will determine a process for public consultation and information disclosure, not only on the findings of the environmental safeguarding and review activities but also on the methods used. Public comments will be duly recorded and they will be forwarded to the appropriate Project implementation partners for response. The NESS will keep a detailed record of the public consultation activities and ensure that the public has access to public documents related to the environmental safeguarding process.

## **G. Findings and Recommendation/Conclusion**

24. The Project will generate overwhelmingly positive environmental impacts. Biodiversity conservation in the Project area is of global significance and will support several critically endangered species through the conservation and restoration of habitats essential to their survival.

25. Some of the Project activities have a potential for generating localised, manageable negative environmental impacts. These have been identified, as well as the measures to prevent or mitigate such impacts.

26. The Project takes a sector-like approach to a number of its activities, whereby exact locations and type of activity will be determined during Project implementation by the local implementation partners within the established geographical boundaries and according to the Project objectives. The Project has been designed to take environmental considerations into account for subprojects as and when these are being formulated. A framework for environmental safeguarding of subprojects has been developed and will be applied.

27. The Project activities that have the potential of causing negative environmental impacts include the forestry activities, the support to livelihoods development and improvement, the small-scale infrastructure development, and the activities supported by the village/commune development funds. Identification and design of all of these activities will be finalised during Project implementation.

28. All Project activities that will be defined during implementation will be subject to review for environmental impact during the planning stage, and further, if and as required, during detailed design, construction and operation. The design, location and other characteristics of the subprojects will be amended to minimise any negative environmental impact. The activities will cover the costs for required environmental monitoring and mitigation measures. Proposed subprojects with significant environmental impacts that might alter the environmental classification of the Project are not admissible. In addition to subproject-specific monitoring, there will be regular monitoring of the overall environmental performance of the Project as a whole, in line with the ADB environmental safeguarding requirements. Subprojects will comply with the prevailing national environmental safeguarding regulations.

29. It is recommended that the Project be classified as an Environmental Safeguarding Category B project in accordance with the ADB Safeguard Policy and Environmental

Assessment Guidelines<sup>8</sup>. Significant environmental impacts warranting and Environmental Impact Assessment are unlikely.

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<sup>8</sup> ADB. 2009. *Safeguard Policy Statement*. Manila. ADB. 2003. *Environmental Assessment Guidelines*. Manila.