

Appendix 16. REDD / REDD+ Concept Note, Biodiversity Corridor Viet Nam ADB R-PPTA 7459: GMS Biodiversity Conservation Corridors

23 July 2010

A. Background and Rationale

1. The Greater Mekong Sub-region (GMS) Biodiversity Conservation Corridor Initiative (BCI) Pilot (BCI Phase I) was implemented in Viet Nam in Quang Nam and Quang Tri provinces between 2006 – 2009. At request of the Governments of Viet Nam, Lao PDR and Cambodia, the Asian Development Bank launched a regional project preparation technical assistance (R-PPTA) to examine feasibility of a \$30 million loan project to Vietnam and Grant funded projects of \$19 million to Lao PDR and \$20 million to Cambodia to upscale the GMS Biodiversity Conservation Corridors in three provinces in Viet Nam and Lao PDR and two provinces in Cambodia. The vision is to: ***“Sustain climate resilient trans-boundary forest ecosystem services benefiting local livelihoods.”*** BCI Phase II aims to maintain, restore and enhance carbon capture potential of forest ecosystems by reducing fragmentation within large forest landscapes in the GMS. The ultimate intended impact is to restore and maintain ecosystem services including carbon sequestration, bio-geochemical regulation for sustaining and enhancing livelihoods and economic prosperity in the GMS, and thereby enhancing carbon sinks in globally high-value GMS forest ecosystems.

2. The BCI Phase I has facilitated establishment of decentralized institutional and financial mechanisms (commune-based revolving funds known as C/VDFs) for participatory forest restoration, protection and livelihood improvements with oversight and performance monitoring by district and provincial levels, which is an essential criteria of success for REDD implementation. Also the GMS countries participating in the Biodiversity Corridors Initiative provide an appropriate forum to embed REDD in a sub-regional context under the GMS Working Group on Environment. Vietnam and Lao PDR are currently preparing Reddiness Preparation Proposals (R-PP) to access funding to develop the institutional capacity, baselines, and monitoring systems necessary to participate fully in REDD whenever an international protocol is agreed and becomes effective. The Reddiness phase requires a range of emission reduction activities to be piloted to gain information and experience on a range of practical issues, and the most cost-effective way to do this is to incorporate them into existing or planned projects that are concerned with forest and environmental management and restoration. The focus of the BCI makes it an ideal vehicle for demonstrating how REDD funding can bring multiple benefits for the environment and biodiversity in addition to CC mitigation.

3. In the period 2011 – 2018, BCI Phase II in Viet Nam, Lao PDR and Cambodia, by initiating REDD+ activities in GMS trans-boundary landscape areas based on current BCI work on participatory forest protection and restoration, and land use planning linked to livelihood improvements will bring co-benefits from cash based restoration and conservation. Project stakeholders will be engaged on forest restoration and protection across the three GMS countries and REDD+ activities will be implemented at the village-level, with oversight by district, provincial and national level entities.

4. The principle drivers of emissions of GHGs, mainly carbon dioxide, from the corridor area are the burning and decomposition of residues from forestry operations, including legal and illegal harvesting, clearance of land for mining and conversion to agriculture, shifting cultivation and the clearance and inundation of some forest for hydro-power and other infrastructure projects such as road building. The improved access resulting from the opening of the HCM Highway and other regional transport routes carries the risk of further and even accelerated clearance of land accessible

from the road by migrants moving into the area. There is a risk that in the medium term this in-migration will accelerate as the impact of climate change makes living conditions along the coastal strip more difficult. These drivers of DD are very similar in all three countries and have a regional context due to the trade in forest products and hydro-electricity between the three countries. Illegal logging in the region, which is the major driver of forest degradation in the three countries requires a regional solution.

5. Reference emission levels must apply to a specified area for which data is available and which can be monitored to ensure that leakage is not taking place. The corridor in Vietnam is defined by the communes that are located within the area where the corridor is to be developed, since the forest management units (SUF, Protection and Production) are not contiguous. In Lao PDR the corridor is primarily determined by the boundaries of Protected Areas and protection forest, that lie within five Districts in three provinces and form an almost continuous corridor running along the eastern and south-eastern national border. In Cambodia the situation is similar to Vietnam, with the corridor defined by the Communes rather than forest management units. Therefore it will be necessary to try to establish Baseline emissions and Reference Emission levels at District level in each country. This will have the advantage of monitoring local leakage, but will raise problems regarding the REDD payments for the communities in or adjacent to the corridors if some of the reductions they have achieved are offset by additional emissions elsewhere in the District. It is precisely this sort of issue that makes the piloting of REDD activities so important to find ways of dealing with it. In the medium to longer term a national system with various sub-national levels will need to be established and developed using a standard method so that the information from lower levels forms part of the national REL.

6. For the project, REDD demonstration activities will be undertaken in a few sites and RELs will need to be established and emissions monitored for each site, but covering the whole administrative unit within which the activities are located to capture possible leakage that may result.

7. B. Proposed REDD Interventions under Investment Project

8. A REDD / REDD+ supported funding mechanism supplementing the Biodiversity Corridors loan project in Viet Nam will assist in achieving the following outputs: (a) Updated forest and carbon data benchmarking for establishment of carbon sinks according to forest types using appropriate models for ER calculations and MMV/MRV; (b) Land use zoning into carbon, livelihoods / agro-forestry / biomass production, and REDD forest protection zones completed in selected segments of biodiversity corridors; (c) Forest restoration and protection undertaken using decentralized Commune Development (revolving) Funds (C/VDFs) in sites designated for REDD /REDD+ measures; and (d) Provincial capacity building for REDD, sustainable forest management, and biodiversity corridor management.

9. The following interventions will be undertaken: (i) identification and establishment of carbon sinks and sources according to forest types and its state of degradation or health; (ii) establishment of baselines for the project sites where interventions will be carried out and provincial levels with respect to the rate of deforestation according to a baseline period and projection of a business as usual scenario against which project actions would be expected to achieve "avoided deforestation" and thus net decreases in future CO₂ emissions; (iii) delineation of REDD sites on provincial maps and securing of "registration" and provincial regulatory framework to ensure legal protection; (iv) methodologies for measuring and monitoring changes in carbon sinks according to forest types and by area, which will include the use of remote sensing data and ground truthing; (v) approaches for

the verification and reporting of reduced emissions from deforestation and forest degradation; (vi) for afforestation/reforestation activities, methodological approaches for the establishment of baselines, measurement/monitoring, reporting and verification of CO₂ sequestered as a result of actions taken over time; (vii) Benchmarked datasets establishing critical parameters for monitoring, measurement and verification (MMV/MRV)¹; (viii) assist in establishing carbon sequestration, livelihood improvement, and agro-forestry/biomass production zoning and mapping; and (ix) implement forest restoration and protection achievements in the Biodiversity Corridors in Quang Nam, Thua Thien Hue and Quang Tri through use of decentralized C/VDFs.

Map 1. Transboundary forest ecosystem Viet Nam – Lao PDR (Forest Cover 2000)



10. The REDD baselines and updated model can be fed into the National REDD Readiness Plans in Vietnam and Lao PDR, which share a transboundary forest ecosystem (see map 1 above). There is a biodiversity/forest ecosystem link on a North-South (Dakrong NR – Ngoc Linh/Song Thanh NR) and East-West axis (Bach Ma NP – Xe Xap).

C. Forest ecosystem description and biodiversity values

11. The forest lying within the corridor in Vietnam has been classified in a number of ways: one classification is based on the ecology of the forests and the characteristics of the dominant species, such as “evergreen” and “deciduous”; a second uses the general condition of the forest, basically the stocking density, and recognises rich, moderate and poor quality forest, degraded forest and

¹ MMV is used by FCPF, while it is also referred to as MRV=Monitoring, Reporting and Verification

plantations; the third uses the forest function with three classes – Special-use forest (Protected Areas), Protection forest and Production forest. A study of the forest cover in the communes included in the corridor using remote sensing refers to all the forest as “evergreen” with varying degrees of richness, but the composition of the forest at higher elevations (above about 600m) changes, with an increase in species and genera found in sub-tropical and temperate flora so that different species dominate. There are outcrops of Limestone throughout the corridor that has its own unique flora, but these are not easily distinguishable from satellite imagery. There are substantial areas of secondary forest resulting from shifting cultivation as well as some bamboo forest on degraded areas and substantial areas of plantations, mainly in the more accessible areas. The forests of the Central Annamites are extremely rich and surveys in one NR report almost 1000 vascular plant species and 47 large mammal species, some of which are threatened by collection and hunting respectively. Birds have been well studied and over 200 species have been reported.

12. In Lao PDR the forest is classified by a combination of ecological type and forest condition. The predominant forest types are dry evergreen (6.5% of the area of the 3 provinces), mixed deciduous (27%), dry Dipterocarp (15.9%) and Pine forest (pure and mixed with deciduous 2.5%). Pine forest is found mainly in Sekong province, and Dry Dipterocarp mainly in Champassak. The forest condition is based upon crown closure (CC) classes, with dense forest (>70% CC), medium forest (40-70% CC), degraded forest (20-40% CC) and “potential forest” (<20% CC). The distribution of forest type is given by province, but the data on CC classes is only reported for the national level, but the “potential forest” is over 40% of the area in Sekong and Attapeu, which is indicative of the extent of shifting cultivation in the two provinces.

Despite the degraded nature of much of the forest the corridor is still rich in wildlife, and the pressures on it, especially from hunting is lower than in Vietnam, because population densities are much lower, and communities are small and scattered. The Xe Pian NBCA is one of the most valuable areas of biodiversity within Southeast Asia, covering an area of 240,000ha. Over 29 different habitat types have been identified, with the main forest type being evergreen/mixed forest, covering three quarters of the NBCA. There are 62 species of mammals, 334 recorded species of birds, 44 species of reptile, 21 species of amphibians and 176 species of fish, many of which are threatened. Xe Pian NBCA also contains areas of important wetlands, swamps and streams. There is widespread illegal logging in the Protected Areas and shifting cultivation is still widely practiced throughout much of the protection forest that forms the corridor connecting the three Protected areas; Xe Xap in the north, Dong Amphan in the south east and Xe Pian in the east.

D. Geographical scope and carbon sequestration potential

. Studies in Bach Ma National Park in 2009 found the following carbon stocks according to forest class:

Forest Class	Estimated carbon stock (tonnes C/ha)
Rich forest	401
Medium forest	163
Poor forest	65
Regenerating forest	37
Bare land	33

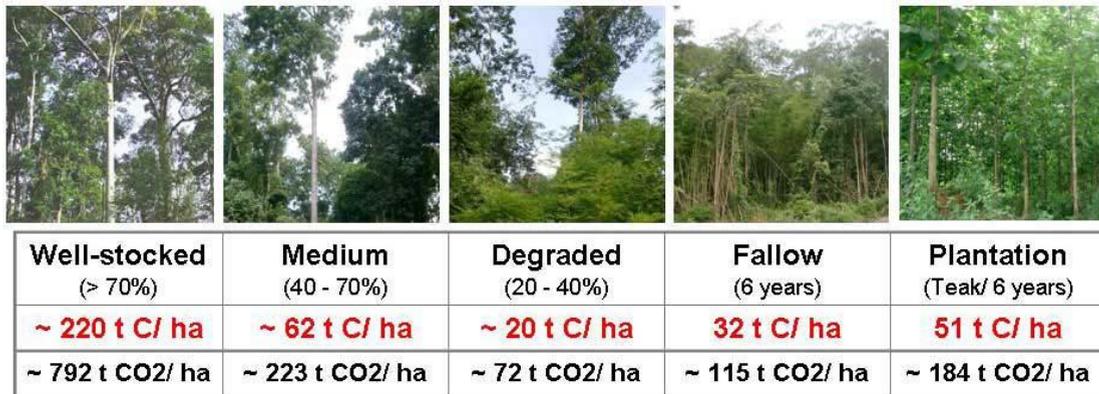
13. The protection of the forest in Bach Ma NP appears to have achieved some success, since the area of rich forest has increased over the past decade and there has been a net sequestration of around 75,000 tonnes of CO₂ annually with a value of around US\$ 380,000, which would make a significant contribution towards the cost of management of the park, had it been realised. However,

throughout the corridor generally there has been a steady decline in the areas of rich forest, and therefore in carbon stocks, as a result of clearance and logging. Therefore, there are two approaches that will need to be followed; the firsts aiming to prevent further loss of carbon stocks, and the second aiming at restoring carbon stocks where ever possible.

14. There are a number of forest types within the proposed BCI Phase 2 project area in Viet Nam Viet Nam (Central Annamites in Quang Nam and Quang Tri Provinces). Each of these forest types has different carbon sequestration potential (above and below ground). In order to support carbon stock baselines and additional absorption capacity through forest restoration in all zones (carbon and livelihood/biomass production zones), it is necessary to undertake research and studies of the carbon cycles in major forest types representative of the REDD+ sites in Viet Nam. In addition, because of its trans-boundary nature, such assessments in the GMS need to take cognizance of forest areas linking Viet Nam with Lao PDR and also Viet Nam and Cambodia (three countries covered under the R-PPTA design). Consultants will assist the relevant authorities with the design and supervision of studies to compare carbon stocks in major forest types (to include the growing cycle of sequestration and decomposition and the subsequent utilization cycle with different carbon conservation regimes). Reports generated will be fed into the National REDD Readiness Plan preparation and also posted on the GMS EOC website.

15. In Lao PDR there have been few studies of carbon stocks, but Figure below shows the range of carbon stocks that have been measured and are used in the provisional baseline for R-PP

Figure 1. Comparison of carbon stocks for different forest quality classes in Lao PDR



16. In the absence of an international protocol for REDD, it is likely that payments for emission reductions will have to be based on measurable reductions in CO₂ emissions below a baseline level that represents what emissions would have been without interventions. As a first step, the geographic area of the Biodiversity Corridor in Viet Nam, to which the site level baseline is to apply, will have to be agreed and registered with the National REDD Readiness Implementation Authority (may also be the Designated National Authority – DNA). Currently, in Viet Nam this is the REDD Focal Point in MARD. In Lao PDR the boundaries of the corridor are clearer since they largely utilise the boundaries of protection forest, currently established with Decrees from the respective Provincial Governors. As soon as the Decree on protection forest is promulgated these will be upgraded to national protection forests. In a similar way to Vietnam, the geographic area of the Corridor in Lao PDR will be agreed and registered with the REDD Task Force and the REDD Office that is expected to be established as part of REDD Reddiness. Biodiversity Corridor delineations on maps

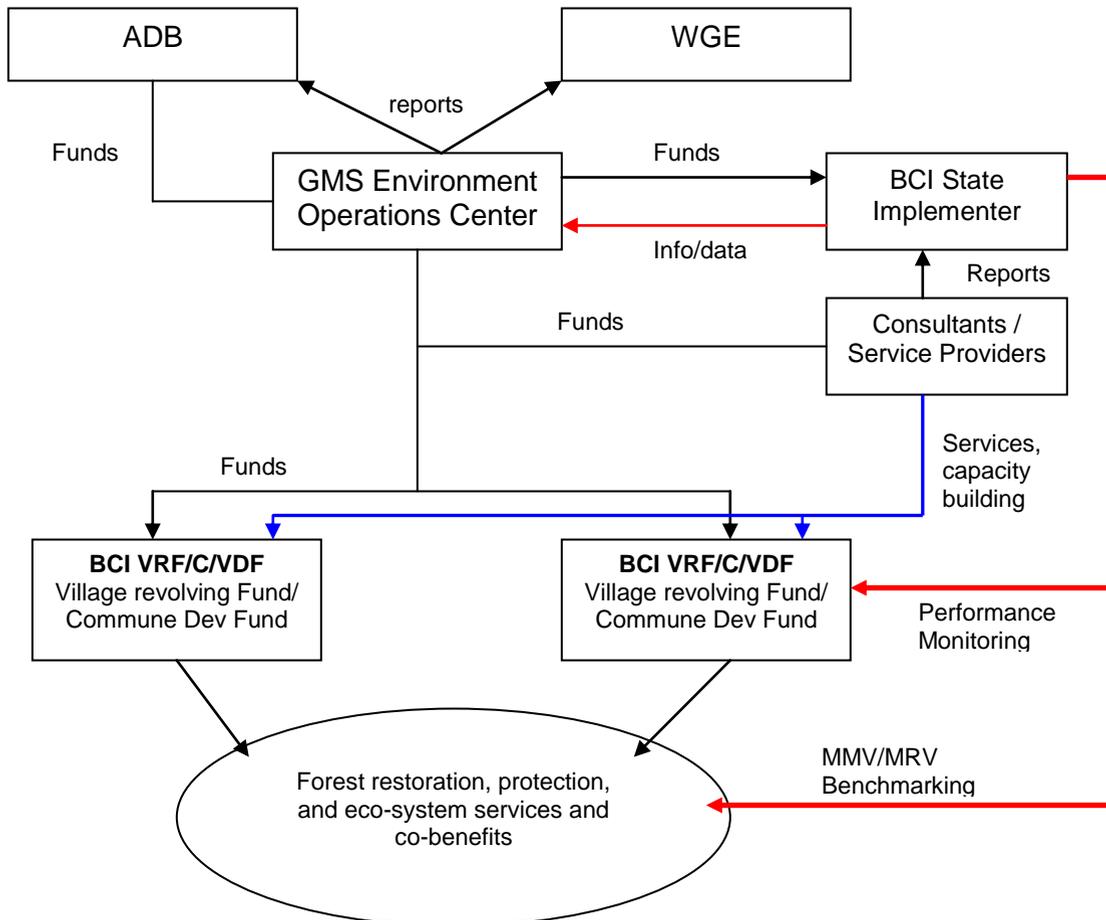
undertaken in BCI Project Site will be verified and precise boundaries of REDD and REDD+ interventions will be marked with GPS points and status of forest verified using satellite images and ground truthing. Establishment of baselines will take into consideration availability and reliability of historical data as well as paper maps and GIS information within the REDD sites. The consultants will assist the relevant authorities at provincial and national levels to document and record on reliable maps the geographical area to which base-line studies will apply and then to identify available sources of the necessary data to establish credible and verifiable baselines. Where reliable data is not available, the consultants will advise on the best proxy data to be used and on the steps needed to develop the necessary data and information at the earliest possible time. The consultants will provide support in building technical capacity at national and provincial/district levels, develop training materials, and undertake the required training, and will advise on the establishment and management of a database within the designated REDD Readiness Plan implementation agency.

REDD+ activities to reduce forest based emissions of CO₂ (forest protection) and increase carbon uptake through forest restoration and afforestation will involve local level stakeholders, which have already been active in implementing similar interventions in the BCI project area. The decentralized delivery mechanism of Commune/Village Development Funds (C/VDFs) will be used for REDD interventions. Government partner agencies in the BCI project site with support of Consultants will identify forests that require deforestation avoidance measures through protection and design a performance based scheme for incentives to reduce deforestation or maintain intact forest areas. At the same time, suitable patches of degraded forest land will be identified for cash based restoration, enrichment planting, gap filling or natural regeneration. Additionally, seed capital will be provided to the C/VDFs to undertake biomass production that may support a local growing market for renewable energy and/or invest in wood plantations that may generate cash revenue at harvest and provide co-benefits of employment and increased household cash flow during planting and maintenance. Satisfactorily performing C/VDFs will have demonstration and replication effect within the country as well as across the GMS. The demonstration activities will be designed with a view to feed into the development of a BCI-REDD-related investment portfolio.

E. Implementation Arrangements for REDD / REDD+ under investment package

17. The proposed REDD / REDD+ interventions can be implemented by state and non-state implementing partners with technical guidance, oversight and consolidated reporting resting with the GMS Environment Operations Center (EOC) in Bangkok. Experience from implementation over the period 2006-2009 shows that the best possible institutional arrangement in the interim period 2009-2011, and beyond until such time as investment frameworks kick-in with execution of REDD projects firmly resting with government agencies, will be the EOC with overall coordination, channeling of funds, technical assistance, guidance and monitoring of REDD+ while it continues partnering with government line agencies and service providers / consultants in the BCI Pilot Sites as relevant and appropriate. Under BCI, villages and communes have established revolving funds, which can be used for channeling funds against agreed performance targets to decentralized levels while monitoring is being done by service providers (state and non-state implementers) as presented in figure 1 below.

Figure 1. Implementation Arrangements under BCI-REDD+



F. Provincial REDD capacity building support at site level

18. REDD, as a concept that entails detailed development of applicable methodologies, will require the involvement of a wide range of stakeholders from national level down to the provincial and site levels in Viet Nam. The GMS Environment Operations Center will support and supplement National REDD Readiness efforts by focusing on provincial and site level strengthening of REDD methodology development and application. While UNDP supported REDD Readiness Plan interventions at national level in Viet Nam and FCPF REDD Readiness implementation funds in Lao PDR will deal with policy issues relating to securing international payments for Emission Reduction Certificates, establishment of protocols for national emission baselines, the appropriate regulatory and legal framework for undertaking REDD activities, and measures for dealing with issues of "leakage" and "permanence", the BCI-REDD+ will focus on building technical capacity at provincial levels with state and non-state partners related to estimation of current carbon stocks, assessment of future emissions in the absence of interventions, the design of interventions that will actually achieve reductions in emissions, monitoring and evaluation of emission reductions. Capacity will need to be developed to handle these aspects effectively in the future, thus requiring a hands-on provision of technical advice and practical training. The consultants will provide advice to the appropriate authorities at national and provincial /site levels in relation to the practical aspects of carbon stock assessments and establishment of emission baselines. The technical support will include on-the-job training, development of training materials and implementation of training courses and workshops.

G. Inputs and cost estimates for REDD implementation in biodiversity corridors

19. Estimated costs for REDD capacity building and designing three sites are given below:

Table. Cost Estimates for REDD Input in BCI Phase 2

Cost Items	Unit	Quantity	Cost (in \$ '000)	No. of Persons to be trained
1. REDD Capacity Building & carbon trading	batch	12	120	300
2. Pilot site identification and preparation	site	3	150	
Identification including:				
2.1 Site selection and design				
2.2 Monitoring (annual) by villagers & supervisor	pd	25		
2.3 Verification (every second year) by third party	pd	5		
3. TA Support				
3.1 National REDD Technical Specialist	month	48	72	
3.2 International REDD Expert	month	8	176	
4. Government Support				
4.1 REDD Focal Person (Central and provincial levels)	month	192	Counterpart Contribution	2
Total (proposed under loan project)			518	