



Additional Financing

Draft for Submission to FIP Committee

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Proposed Administration of Grant Lao People's Democratic Republic: Greater Mekong Subregion Biodiversity Conservation Corridors Project

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 11 January 2016)

Currency unit	–	kip (KN)
KN 1.00	=	\$0.0001227
\$1.00	=	KN8,148

ABBREVIATIONS

ADB	–	Asian Development Bank
AF	–	additional financing
BCC	–	Biodiversity Conservation Corridor
FIP	–	Forest Investment Program
ha	–	hectare
MONRE	–	Ministry of Natural Resources and Environment
REDD+	–	reduced emissions from deforestation and forest degradation
SCF	–	Strategic Climate Fund

NOTE

In this report, "\$" refers to US dollars

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PROJECT AT A GLANCE

1. Basic Data			Project Number: 40253-036
Project Name	LAO: Greater Mekong Subregion Biodiversity Conservation Corridors Project (Additional Financing)	Department /Division	SERD/SEER
Country Borrower	Lao People's Democratic Republic Government of Lao PDR	Executing Agency	Ministry of Natural Resources and Environment
2. Sector			ADB Financing (\$ million)
✓ Agriculture, natural resources and rural development	Subsector(s) Agricultural production Forestry Land-based natural resources management		0.00 0.00 0.00
Total			0.00
3. Strategic Agenda		Subcomponents	Climate Change Information
Inclusive economic growth (IEG)	Environmentally sustainable growth (ESG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive Environmental policy and legislation Global and regional transboundary environmental concerns Natural resources conservation	Climate Change impact on the Project
Regional integration (RCI)	Pillar 4: Other regional public goods		High
4. Drivers of Change		Components	Gender Equity and Mainstreaming
Governance and capacity development (GCD)	Knowledge solutions (KNS)	Civil society participation Institutional development Organizational development Pilot-testing innovation and learning	Effective gender mainstreaming (EGM)
Partnerships (PAR)		International finance institutions (IFI) Official cofinancing	✓
5. Poverty Targeting			Location Impact
Project directly targets poverty	Yes		
Geographic targeting (TI-G)	Yes		
6. Risk Categorization:		Low	
7. Safeguard Categorization		Environment: B Involuntary Resettlement: B Indigenous Peoples: B	
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.00	
Cofinancing		12.84	
Strategic Climate Fund - FIP - Grant		12.84	
Counterpart		0.06	
Government		0.06	
Total		12.90	
9. Effective Development Cooperation			
Use of country procurement systems		No	
Use of country public financial management systems		No	

I. BACKGROUND

1. On 10 December 2010, the Board of Directors of the Asian Development Bank (ADB) approved a grant of \$20,000,000 from ADB's Special Fund Resources (Grant 0242-LAO) to the Lao People's Democratic Republic (Lao PDR) for the Lao PDR component of the Greater Mekong Subregion (GMS) Biodiversity Conservation Corridors (BCC) Project (hereinafter referred to as the Project).¹ The Project became effective on 11 April 2011 and will be completed on 31 March 2019. The impact of the Project is climate-resilient sustainable forest ecosystems benefiting local livelihoods in the biodiversity corridors of Lao PDR, while the outcome is sustainably managed biodiversity corridors in Lao PDR. The outputs are: (i) strengthened institutions and communities for biodiversity corridor management; (ii) restoration, protection and sustainable management of biodiversity corridors; (iii) improved livelihoods and provision of small-scale infrastructure; and (iv) project management and support services.

2. The Project is implemented in the three southern provinces of Attapeu, Champasak, and Sekong, and covers 67 villages across five districts which make up the Triborder Forest landscape. The Ministry of Natural Resources and Environment (MONRE) serves as the executing agency of the Project. A mid-term review of the Project was carried out in November 2014 which showed progress in biodiversity assessment, land use planning and establishment of village development funds and village patrolling teams. However, challenges remain in forest planting, livelihood and infrastructure activities. Following recommendations of the mid-term review, a forest planting program and livelihood program with detailed action plans were prepared and are under implementation. An infrastructure design team was mobilized to support the scoping, planning and implementation of infrastructure sub-projects. Progress has been achieved in all aspects of the Project and it is currently rated on track in the ADB project performance rating system.

II. ADDITIONAL FINANCING

A. Rationale

3. The total forest area in Lao PDR has steadily declined from around 70% of total land area in 1940 to around 40% or about 9.5 million hectares (ha) in 2010. This, coupled with increasing fragmentation of forest areas and a decline in the average growing stock within the residual forest, has reduced the carbon sequestration capacity and resulted in a decline in biodiversity. Within the project area, the provinces of Attapeu and Sekong contain about 1.7 million ha of forest, the equivalent of 18% of the country's total forest area. Much of the forest in these two provinces is located in upland areas characterized by elevations of over 200 meters above sea level and mountainous terrain with steep slopes. Across the country, upland areas account for 25% of the population and 39% of the poor.² Upland communities depend largely on natural resources and agriculture for livelihoods where agriculture is primarily by smallholders practicing rotational cropping. Attapeu and Sekong are also amongst the provinces that have the highest levels of income disparity between upland and other districts.

4. Hence the upland forests of Attapeu and Sekong provinces represent hot spots of rapid deforestation and forest degradation within the project landscape. The key drivers are small-scale forest clearance by local communities for rotational agricultural cropping, and to a lesser extent, by small/medium entrepreneurs for commercial crops such as coffee. Rotational or swidden agriculture has been the traditional practice of upland farmers largely due to the lack of alternative livelihood opportunities and options for more sedentary farming practices.

5. In a bid to address the underlying causes of deforestation and forest degradation, Lao PDR was selected as a pilot country to participate in the Forest Investment Program (FIP), a targeted

¹ ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grants to the Kingdom of Cambodia, Lao Peoples Democratic Republic, and Socialist Republic of Viet Nam for the Greater Mekong Subregion Biodiversity Conservation Corridors Project*. Manila.

² P. Messerli et al, eds. 2008. *Socio-Economic Atlas of the Lao PDR – an Analysis based on the 2005 Population and Housing Census*. Swiss National Center of Competence in Research North-South, University of Bern, Bern and Vientiane: Geographica Bernensia.

sub-program within the framework of Strategic Climate Fund (SCF) under Climate Investment Funds. In particular, FIP aims to assist with improving sustainable forest management practices and undertake readiness activities in support of reduced CO₂ emissions from deforestation and forest degradation (REDD+). In 2012 the FIP Steering Committee approved the FIP Investment Plan for Lao PDR which allocates a portion of the funds to be implemented by ADB.³ The expected outcomes of the FIP Investment Plan for Lao PDR are consistent with objectives, scope and implementing arrangements of the Project. Therefore, the portion of funds from the SCF will be programmed as additional financing (AF) to the Project.

B. Impact, Outcome, and Outputs

6. The AF will focus on conserving areas with high carbon stocks and restoring forest cover in areas with the highest potential for maximizing co-benefits from carbon sequestration, soil, water and biodiversity conservation within the project area. The outcome statement of the Project will be revised accordingly as “sustainably managed biodiversity corridors with communities ready to scale-up feasible REDD+ activities in Lao PDR”. The AF will expand the scope of the Project through a series of modules which will be implemented under the existing outputs.⁴ Accordingly, Output 1 will be expanded through the delivery of REDD+ awareness and training and by strengthening the policy framework for implementation of REDD+. Output 2 will be expanded through forest restoration and patrolling interventions and establishment of a carbon baseline and monitoring mechanism. Output 3 will be expanded by implementing agroforestry and livestock support activities to reduce pressure on forest areas and the carbonization of discarded wood into charcoal as an alternative sustainable livelihood option. Additional interventions under Output 4 will support strengthening project management. The AF activities will be implemented in 21 new villages in two districts (one in each province). The combination of modules applicable to each village cluster will be decided through a consultative process and based on the village land use plans. The revised Design and Monitoring Framework (DMF) is attached as Appendix 1.

C. Revised Investment and Financing Plans

7. The AF to accommodate the expanded project scope will be \$12,900,000 of which SCF will provide grant cofinancing equivalent to \$12,840,000, to be administered by ADB. Expenditure under the AF will be in parallel to those of the ongoing Project. The same disbursement arrangements of the Project will apply to the AF except for block grants which will not be implemented under AF. Retroactive financing will apply for eligible expenses incurred before Grant effectiveness and up to twelve months prior to date of signing of the grant agreement, with a ceiling of 20% of the Grant amount. The revised investment and financing plans are in Tables 1 and 2.

Table 1: Revised Investment Plan
(\$ million)

Item	Current Amount ^a	Additional Financing ^b	Total
A. Base Cost^c			
1. Institutional and community strengthening for biodiversity conservation corridors management and implementation of REDD+	0.94	0.50	1.44
2. Biodiversity corridors restoration, protection, maintenance and REDD+ readiness	3.92	3.85	7.77

³ Government of Lao Peoples Democratic Republic. 2011. *Forest Investment Program Lao Investment Plan*. Vientiane. The portion to be implemented by ADB is listed as a sub-project titled “Protecting Forest for Sustainable Ecosystem Services”.

⁴ The modules include: (i) agroforestry with livestock support – a silvi-pastoral system based on intensifying productivity of existing grazing lands and promoting more sedentary livestock rearing; (ii) agroforestry with crop support – based on a model of alley cropping between commercially valuable tree plantations to meet food requirements with community members gradually phasing out shifting cultivations; (iii) carbonization of non-commercial wood into charcoal – the process of removing biomass from areas designated for inundation or some other development and converting into commercially valuable charcoal; (iv) afforestation and forest rehabilitation; and (v) forest protection and patrolling.

Item	Current Amount ^a	Additional Financing ^b	Total
3. Livelihood and small-scale infrastructure	4.58	2.97	7.55
4. Project management and support	8.81	3.74	12.55
Subtotal (A)	18.25	11.06	29.31
B. Contingencies^d	2.20	1.84	4.04
C. Financing Charges During Implementation	0.00	0.00	0.00
Total (A+B+C)	20.45	12.90	33.35

^a Includes \$0.5 million in taxes and duties which will be financed through ADB ADF grant funds.

^b Includes taxes and duties of \$1.19 million to be financed by the Strategic Climate Fund in compliance with para 9, OM H3/OP. The following principles were followed in determining the amount of taxes and duties: (i) the amount is within reasonable country thresholds; (ii) the amount does not represent an excessive share of the project investment plan; (iii) taxes and duties apply only to SCF-financed expenditures; and (iv) the financing of taxes and duties is relevant to the success of the project.

^c in mid-2010 for the ongoing Project and mid-2015 for the AF.

^d Physical contingencies for additional financing computed at 5% for civil works, consulting services, training, surveys and studies. Price contingencies for additional financing, taking into account a PPP exchange rate, have been computed at 1.9% in 2016, 2.2% in 2017, 1.9% in 2018 and 1.8% thereafter on foreign exchange costs and at 5.5% in 2016, 5.0% in 2017 and 4.5% thereafter on local currency costs.

Sources: Asian Development Bank estimates.

Table 2: Revised Financing Plan

Source	Current		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank	20.00	97.8	0.00	0.0	20.00	60.0
Strategic Climate Fund ^a	0.00	0.0	12.84	99.5	12.84	38.5
Government ^b	0.27	1.3	0.06	0.5	0.33	1.0
Beneficiaries ^b	0.18	0.9	0.00	0.0	0.18	0.5
Total	20.45	100.0	12.90	100.0	33.35	100.0

^a Under the Forest Investment Program financed by the Strategic Climate Fund, administered by ADB.

^b Government and Beneficiaries share adjusted during mid-term review mission to reflect the delay in implementation arrangements.

Note: Bank charges related to operation of the imprest accounts will be financed from the respective grant proceeds.

Sources: Asian Development Bank estimates.

D. Implementation Arrangements

8. The existing project implementation arrangements will be applied to the AF, thus maximizing cost effectiveness and efficiency of implementation. MONRE will remain the executing agency.⁵ The new activities will be implemented through service contracts, which will be incorporated into the procurement plan of the Project. Contracts will be awarded following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) and procurement of goods and services will be in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).⁶ The National Project Management Office will be responsible for administering and disbursing the grant funds in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time).

E. Due Diligence

9. Due diligence has been undertaken for the additional financing. The original safeguard category of B (for environment, indigenous people, and involuntary resettlement) of the Project remains unchanged. Villages identified for the new activities comprise mostly of people belonging to Brao, Sadang, Tarieng, and Yae ethnic groups. Consultations conducted during the design phase of AF confirmed that villagers support the new activities. The Ethnic Groups Development

⁵ The executing agency has been changed from the Ministry of Agriculture and Forestry to the newly created MONRE, which was formalized with Decision No. 3121/MONRE issued by the Minister of MONRE on 18 May 2012.

⁶ Universal procurement will apply (R29-13: Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources).

Framework, the Environmental Assessment and Review Framework, Resettlement Framework and Gender Action Plan of the Project have been updated to reflect the AF. The new activities are not expected to result in significant negative environmental impacts or involuntary resettlement of people. The proposed new activities will promote effective gender mainstreaming by ensuring that the differential needs of men and women are equally addressed. The existing Project and the AF support women's participation in all activities specially in forest conservation, use of forest resources, and alternative livelihood activities. Corresponding gender targets are included in the revised DMF. The financial management arrangements of the Project were reviewed during the mid-term review in November 2014. Based on the findings, the executing agency and ADB agreed to implement several measures to improve the efficiency of financial management and improve financial management skills of the National Project Management Office and Provincial Project Management Offices.

10. The AF is considered to be economically viable based on the benefits from reduced emissions from undertaking the new investments. The interventions are estimated to generate an annual net reduction in CO₂ emission of approximately 97,000 tons. Using the assumed economic price of \$10 per ton of CO₂, the benefits will be, on average, \$0.97 million per year for the first ten-year period (from reduced forest degradation), and \$1.47 million per annum over a thirty-year period. Compared to the threshold of 12%, the AF investments yield an economic internal rate of return of 15.1%. Sensitivity analysis indicated that none of the risk factors appeared to place these investments' economic viability in immediate jeopardy. The financial analysis of interventions at the village level will be conducted during implementation. Financial analysis at the design stage is limited to a cost effectiveness of undertaking recurrent expenditure associated with the project investment, the key expenditure being the recurrent cost of patrolling and maintaining the replanted areas. The cost is estimated at \$0.24 million per year in financial prices and is expected to reduce as trees reach canopy closure. Financial sustainability is assured through legislation by provincial governments on biodiversity conservation corridor management which governs the allocation of resources.

11. Around 420 households will benefit directly from the support for more productive and sustainable agricultural systems. Financial viability of these interventions will be assessed on a case by case basis during implementation. Targeted communities will also receive direct financial benefits in the form of incremental employment, estimated at 160,000 labor days, from forest patrolling (an estimated area of 50,000 ha) and forest rehabilitation (an estimated area of 1,450 ha). In addition, downstream communities are expected to benefit from enhanced ecosystem services generated through the actions of the direct beneficiaries. The Project's institutional and capacity-building interventions are expected to generate significant social benefits to communities, local government units, and private and nongovernment organizations; however, these benefits are not readily quantifiable. Financial sustainability of interventions are further assured by regulations on biodiversity conservation corridor management which have been approved by the respective provincial governors. The regulations govern the utilization of resources to minimize damage to natural ecosystems in the conservation landscapes. Provincial government will seek to secure payments for ecosystem services from protecting rehabilitated forest and that these payments will cover the recurrent cost of protection and enforcement.

III. THE PRESIDENT'S RECOMMENDATION

12. The President recommends that the Board approve ADB administering a grant not exceeding the equivalent of \$12,840,000 to Lao People's Democratic Republic for the additional financing of the Greater Mekong Subregion Biodiversity Conservation Corridors Project (Lao PDR component), to be provided by the Strategic Climate Fund.

REVISED DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with			
Current project Climate resilient sustainable forest ecosystems benefitting local livelihoods (Ministry of Natural Resources and Environment's Vision towards 2030).			
Overall project Unchanged.			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome^a			
<p>Current project Sustainably managed biodiversity corridors in Lao PDR</p> <p>Overall project Sustainably managed biodiversity corridors in Lao PDR with communities ready to scale up REDD+ activities</p>	<p>Current project By 2018:</p> <p>a. Biodiversity Conservation Corridor (BCC) regulations approved in Attapeu, Champasak and Sekong</p> <p>b. Biodiversity Conservation Corridors mapped with priority conservation areas being protected and managed</p> <p>c. Village forest management improved with forest management committees operational in all 67 villages</p> <p>d. Each village forest management committee has 30% female members</p> <p>e. 3,900 ha of forest enhancement, including 800 ha of agroforestry established in the 67 participating communities contributing a 10% increase in hh income</p> <p>Overall project Current targets remain and additionally:</p> <p>f. By 2019, at least 10 communities ready to scale up REDD+ pilots</p>	<p>a. National databases MONRE and MAF</p> <p>b. MOU between Lao PDR & Viet Nam regarding management of Biodiversity Corridor zones in cross border areas</p> <p>c. Text of Biodiversity Corridor Decree or regulatory instrument</p> <p>d. Performance monitoring survey/reports</p> <p>e. Project management information system</p> <p>f. Carbon baseline monitoring</p>	<p>Other external DFIs negatively affect current and planned Project activities in the corridors</p>
Outputs^a			
<p>Output 1</p> <p>Current project Institutions and communities strengthened for biodiversity corridor management</p> <p>Overall project Institutions and communities strengthened for biodiversity corridor management and ready to implement REDD+</p>	<p>1a. Current project By 2018, 67 BCC villages with PLUP approved Overall project: Unchanged</p> <p>1b. Current project By 2018, 62 plots of village forest land and 2,300 household certificates awarded Overall project: "Unchanged"</p> <p>1c. Current project By 2018, 300 km of community forest lands delineated and demarcated in 67 BCC villages Overall project: "Unchanged"</p> <p>1d. Current project By 2018, 3,000 trainees in land use planning, forest management, patrolling and livelihoods Overall project: "Unchanged"</p> <p>1e. Current project By 2018, among the trained persons at the national, provincial, district and village levels, at least 30% are female (overall target)</p>	<p>1a. Corridor maps approved by Provincial Government and MAF/DOF</p> <p>1b. Carbon-sensitive PLUPs with maps for 90 villages</p> <p>1c. Village investment plans of 90 villages; demarcation maps</p> <p>1d. Land Use Certificates</p> <p>1e. Project progress reports</p> <p>1f. Performance monitoring survey/reports</p> <p>1g. NPMO reports; Project completion report</p>	<p>Other developmental activities (commercial plantations, mining, settlements, roads, etc.) create further fragmentation of forest ecosystem and hamper landscape approaches</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>Overall project: “Unchanged”</p> <p>Overall project (added)</p> <p>1f. By 2019, awareness and knowledge on REDD+ systems and opportunities improved in 20 villages within Attapeu and Sekong provinces with 50% being women beneficiaries</p> <p>1g. By 2019, an additional 50 provincial, 75 district, 800 village level persons trained in REDD+ activities with at least 30% of trainees being female and 30% of trainees being from ethnic groups</p>		
<p>Output 2</p> <p>Current project Biodiversity corridors restored, ecosystem services protected, maintained</p> <p>Overall project Biodiversity corridors restored, ecosystem services protected, maintained and REDD+ ready</p>	<p>2a. Current project By 2018, 67 BCC villages with a total of at least 67 patrol teams with at least 40 patrolling interceptions per district per year; and the number of violations reduced by 60% compared to 2015 baseline</p> <p>Overall project: “Unchanged”</p> <p>2b. Current project By 2018, spatial assessment of biodiversity in the BCC completed and used to identify priority protection and management zones by 2016</p> <p>Overall project: “Unchanged”</p> <p>2c. Current project By 2018, 3,900 ha of forest lands planted and maintained using native species (the area of forest planting at the village level is based on the result of the PLUP)</p> <p>Overall project: “Unchanged”</p> <p>2d. Current project By 2018, forest restoration activities include at least 30% of women’s labor input participation on cash basis</p> <p>Overall project: “Unchanged”</p> <p>2e. Current project By 2018, three demonstration sites for connectivity for biodiversity established</p> <p>Overall project: “Unchanged”</p> <p>Overall project (added)</p> <p>2f. By 2019, an additional 50,000 ha of forest effectively patrolled</p> <p>2g. By 2019, an additional 1,450 ha of natural forest land rehabilitated</p>	<p>2a. Land use certificates</p> <p>2b. Provincial and district economic survey statistics</p> <p>2c. Reports of DOFI and DONRE on illegal activities</p> <p>2d. Performance monitoring survey/ reports</p> <p>2e. NPMO reports</p> <p>2f.-2g. ADB review mission and Project completion reports</p>	
<p>Output 3</p> <p>Current project Livelihoods improved and small-scale infrastructure support provided in target villages</p> <p>Overall project “Unchanged”</p>	<p>3a. Current project By 2018, 67 BCC villages with Village Development Funds (VDF) established and onlending to livelihood groups for BCC beneficiaries</p> <p>Overall project: “Unchanged”</p> <p>3b. Current project By 2018, at least 30% of extension trainings for livelihoods in the 67 BCC villages will focus on home gardening, and among the beneficiary households</p>	<p>3a. Provincial and district economic survey/reports</p> <p>3b. Provincial revenue reports</p> <p>3c. Provincial business and enterprise statistics</p> <p>3d. Performance monitoring</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>from home gardening, at least one woman in each household participated in these trainings Overall project: “Unchanged”</p> <p>3c. Current project All VDFs reinvested at least 3 times with a default rate of less than 10% Overall project: “Unchanged”</p> <p>3d. Current project At least 40% of VDF beneficiaries (VDF production group members) are female Overall project: “Unchanged”</p> <p>3e. Current project At least 30% of VDF management board members are women Overall project: “Unchanged”</p> <p>3f. Current project Small-scale infrastructure improving the livelihoods of BCC villages based on the approved infrastructure plan Overall project: “Unchanged”</p> <p>3g. Current project At least 4 profitable value addition businesses linked to other project activities supported in each district Overall project: “Unchanged”</p> <p>Overall project (added) 3h. By 2019, at least 420 additional hh receive cash and technical support to improve productivity and income from livelihoods, with at least 40% of beneficiaries being female</p>	<p>survey/reports 3e-3h. Project progress reports</p>	
<p>Output 4 Current project Project management and support services are operational Overall project “Unchanged”</p>	<p>4a. Current project By March 2011, NPMO in DFRM and PPO in Attapeu, Champasak, and Sekong operational; at least 20% of project staff are female Overall project: “Unchanged”</p> <p>4b. Current project By March 2011, NPMO in DOF and PPO in Attapeu, Champasak and Sekong operational; at least 20% of project staff are female By June 2011, all advance actions regarding procurement of vehicles, equipment and consultants completed Overall project: “Unchanged”</p> <p>4c. Current project By August 2011, first tranche of grant received in imprest accounts Overall project: “Unchanged”</p> <p>4d. Current project By 2012, around 1,000 officials and project staff will be trained on procurement, management, financial controls, monitoring and report Overall project: “Unchanged”</p>	<p>4a. Government statistics 4b. Provincial and district statistics 4c. NPMO reports 4d. ADB review mission reports 4e. Midterm evaluation 4f. Performance monitoring survey/reports 4g. Grant /loan disbursement reports 4h-4l. Project progress reports</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>4e. Current project Timely half yearly (June/December) technical and financial reports produced in Lao and English by NPMO Overall project: “Unchanged”</p> <p>4f. Current project Project Performance and Monitoring System established by early 2012 Overall project: “Unchanged”</p> <p>4g. Current project Timely submission of financial liquidation and withdrawal applications Overall project: “Unchanged”</p> <p>4h. Current project By 2017, Operational Guidelines/manuals circulated on biodiversity corridors management and best Practices Overall project: “Unchanged”</p> <p>4i. Current project By 2017, at least 20 project staff will be trained on procurement, management, financial controls, monitoring and reporting^a Overall project: “Unchanged”</p> <p>Overall project (added) 4j. By 2019, existing project management offices at national level and FIP related provinces and districts commence AF related activities</p> <p>4k. By 2019, at least 20% of additional financing staff are female</p> <p>4l. By 2019, district offices in Dakcheung and Phouvong constructed</p>		

Key Activities with Milestones

1. Institutions and communities strengthened for biodiversity corridor management and ready to implement REDD+

- 1.1. Strengthen policy framework for biodiversity corridor establishment and implementation. (unchanged)
- 1.2. Raise awareness and build technical capacity to replicate model of biodiversity corridors. (unchanged)
- 1.3. Participate in GMS transboundary and subregional Biodiversity Corridor activities and establish cross-border cooperation framework on biodiversity corridor management. (unchanged)
- 1.4. Strengthen capacity on land use planning, zoning, demarcation across landscapes. (unchanged)
- 1.5. Strengthen the capacity of district officials and key provincial level staff in corridor and protected areas management. (unchanged)
- 1.6. Strengthen village level capacity for managing village development funds. (unchanged)
- 1.7. Strengthen the capacity of villagers to manage and protect forest and natural resources in the corridors and move toward effective community-based natural resource management. (with co-management of some parts of the PAs/protection forests) (unchanged)
- 1.8. Secure recognition of biodiversity corridors through provincial level policy and regulations/decisions/decrees and implement management plans. (unchanged)
- 1.9. Design and deliver REDD+ awareness and training courses. (added)
- 1.10. Strengthen policy framework for implementation of REDD+. (added)

2. Biodiversity corridors restored, ecosystem services protected, maintained and REDD+ ready

- 2.1. Undertake participatory demarcation and delineation of forest/conservation corridor areas from village areas. (unchanged)
- 2.2. Identify and undertake landscape connectivity in key fragmentation points through targeted reforestation/enrichment planting, gap filling or natural regeneration. (unchanged)
- 2.3. Identify bare/scrub land available close to villages/clusters for forest plantations, NTFP domestication and supply of timber for value addition. (unchanged)
- 2.4. Implement forest restoration interventions for enhanced carbon storage. (added)

Key Activities with Milestones

2.5. Establish carbon baselines and monitor effectiveness of pilot interventions. (added)

3. Livelihoods improved and small-scale infrastructure support provided in target villages

3.1. Update village/commune level data on socio-economic status and poverty mapping/monitoring. (unchanged)

3.2. Provide support to promoting agriculture/agroforestry based livelihood improvements. (unchanged)

3.3. Explore possibilities of improving market information services using mobile IT technology and private sector services in the clusters / villages or through local associations. (unchanged)

3.4. Provide seed capital for Village Development Funds. (unchanged)

3.5. Provide investment support to prioritized small scale infrastructure. (unchanged)

3.6. Implement agroforestry, livestock and charcoal production pilot interventions to support sustainable alternative livelihoods. (added)

4. Project management and support services provided

4.1. Establish National and Provincial Project Management Offices. (completed)

4.2. Establish financial accounts and internal audit controls. (completed)

4.3. Open project accounts, secure monthly statements. (completed)

4.4. Recruit support staff and consultants. (unchanged)

4.5. Draw up annual and six monthly workplans, personnel scheduling, budgets and procurement plans and seek approvals. (unchanged)

4.6. Procure goods and services applying procurement rules as laid out in PAM. (unchanged)

4.7. Guide and oversee implementation. (unchanged)

4.8. Conduct survey/reports and studies to enhance and support project implementation (unchanged)

4.9. Monitor project implementation. (unchanged)

4.10. Prepare Statement of Expenditure and liquidation documents Submit six monthly financial and technical reports. (unchanged)

4.11. Strengthen project management through additional technical support to implement new interventions (technical and administrative). (added)

4.12. Provide additional vehicles and equipment for project implementation support. (added)

4.13. Construct and furnish 2 district offices. (added)

Inputs**ADB: Grant**

\$20,000,000 (current)
\$0 (additional)
\$20,000,000 (overall)

Strategic Climate Fund: Grant

\$0 (current)
\$12,840,000 (additional)
\$12,840,000 (overall)

Government**Beneficiaries**

\$270,000 (current)	\$180,000 (current)
\$60,000 (additional)	\$0 (additional)
\$330,000 (overall)	\$180,000 (overall)

Assumptions for Partner Financing

Not applicable

ADB = Asian Development Bank, BCC = Biodiversity Conservation Corridor, DFI = development finance institution, DFRM = Department of Forest Resource Management, DOFI = Department of Forest Inspection, DONRE = District Office of Natural Resources and Environment, FIP-AF = Forest Investment Program-Additional Financing, GMS = Greater Mekong Subregion, GOL = Government of Lao PDR, hh = household, MAF = Ministry of Agriculture and Forestry, MONRE = Ministry of Natural Resources and Environment, MOU = memorandum of understanding, NPMO = National Project Management Office, O&M = operation and maintenance, PES = payment for ecosystem PLUP = participatory land use plan, PPO = Provincial Project Office, REDD+ = reduced emissions from deforestation and forest degradation, VDF = village development fund, WREA = Water Resources and Environment Administration.

^a Impact, outcome and output indicators were updated during the mid-term review mission on 3-10 November 2014 and approved by Director/SEER on 19 January 2015.

Source: Asian Development Bank.

Project Administration Manual

Draft for Submission to FIP Committee

Project Number: 40253
Grant Number: G0242-LAO
March 2016

Lao People's Democratic Republic: Greater Mekong
Subregion Biodiversity Conservation Corridors
Project

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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ministry of Natural Resources and Environment (MONRE) and the Provincial Offices of Natural Resources and Environment (PONRE) are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the Recipient and ADB, and in accordance with Government of Lao PDR and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by MONRE and PONRE of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Grant Negotiations the Recipient and ADB shall agree to the PAM and ensure consistency with the Grant agreement. Such agreement shall be reflected in the minutes of the Grant Negotiations. In the event of any discrepancy or contradiction between the PAM and the Grant Agreement, the provisions of the Grant Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

The PAM was updated during the mid-term review of the Project in November 2014 and subsequently for the inclusion of additional financing provided by SCF-FIP in March 2016. The following document presents the PAM, as agreed between the Government and the ADB, for the revised BCC inclusive of the additional financing.

Abbreviations

ADB	=	Asian Development Bank
ADF	=	Asian Development Fund
AF	=	Additional Financing
AFS	=	audited financial statements
CQS	=	consultant qualification selection
DoNRE	=	district office of natural resources and environment
DCO	=	district coordination office
DOF	=	Department of Forestry of the Ministry of Agriculture and Forestry
DOP	=	Department of Planning of the Ministry of Agriculture and Forestry
DMF	=	design and monitoring framework
EA	=	executing agency
EMDP	=	ethnic minority development plan
EMP	=	environmental management plan
FGIA	=	first generation imprest account
FIP	=	Forest Investment Program
GAP	=	Gender action plan
GIC	=	grant implementation consultant
GMS	=	Greater Mekong Subregion
IA	=	implementing agency
IARS	=	imprest account reconciliation statement
ICB	=	international competitive bidding
IPDP	=	Indigenous peoples development plan
IPPF	=	indigenous people planning framework
LWU	=	Lao Women's Union
MAF	=	Ministry of Agriculture and Forestry
MTR	=	Mid-term Review
MOF	=	Ministry of Finance
MONRE	=	Ministry of Natural Resources and Environment
MPWT	=	Ministry of Public Works and Transport
NAFRI	=	National Agriculture and Forestry Research Institute
NCB	=	national competitive bidding
NPMO	=	national project management office
NRM	=	natural resource management
NSC	=	national steering committee
O&M	=	operation and maintenance
PAM	=	project administration manual
PBME	=	project benefit monitoring and evaluation
PONRE	=	provincial office of natural resources and environment
PPMO	=	provincial project management office
PPTA	=	project preparation technical assistance
PSC	=	provincial steering committee
P-WREO	=	Provincial Water Resources and Environment Office
QCBS	=	quality- and cost based selection
RP	=	resettlement plan
RRP	=	report and recommendation of the President to the Board
SIR	=	subproject investment reports
SOE	=	statement of expenditure
SPS	=	Safeguard Policy Statement
TOR	=	terms of reference

I. PROJECT DESCRIPTION

A. Project Rationale, Location and Beneficiaries

1. The Biodiversity Conservation Corridors (BCC) Project is one three-country projects to enhance transboundary cooperation and management of forest ecosystems within and between countries of the Greater Mekong Subregion (GMS). The GMS Governments of Cambodia, Lao PDR and Viet Nam, with support from ADB have identified the most important biodiversity conservation landscapes in the subregion that are vulnerable to increased development pressures and environmental degradation. The project seeks to build resilience by reducing vulnerability within these landscapes.

2. In Lao PDR, the BCC addresses the fragmentation of the biodiversity rich forest landscapes of southern provinces of Attapeu, Champasak and Sekong. The BCC will promote sustainable resource use, restoration and protection of these productive landscapes to enhance the provision of critical ecosystem services necessary for sustaining local livelihoods and investments in hydropower, transport, water and food-security enhancing sectors.

3. The BCC represents upscaling of the GMS Biodiversity Conservation Corridors Initiative (BCI) which was implemented as a pilot project between 2006–2009 in 11 villages in Champasak Province. The BCC will maintain and consolidate forest ecosystem connectivity between Xe Xap National Protected Area (NPA) in Sekong with Dong Ampham NPA in Attapeu and Xepian and Dong Hua Sao NPAs in Champasak.

4. The design of the biodiversity corridors is embedded within a multipurpose, sustainable, biodiversity landscapes approach. The BCC Project covers 69¹ villages in 5 districts located across the 3 provinces with a total population of approximately 27,500 consisting of over 4,700 households. Details of the BCC villages are shown in the table below. The BCC area is predominantly mountainous covered with protection forests and NPAs, where ethnic minority groups make up over 53% of the population. Of the 69 selected BCC villages, 46% (29) are considered poor villages, with monthly incomes from farming and non-timber forest products ranging between \$30–\$427. The majority of households (74%) in these villages are of people belonging to ethnic minorities.

BCC Project Sites in Lao PDR

Province	District	Village	Total Population	# of Households	
Champasak	1 District Pathoumphone	21 Villages	13,241	2,309	
			21	13,241	2,309
		1. Sanot	701	130	
		2. Thongpha	619	108	
		3. Thahou	519	83	
		4. Somsouk	494	74	
		5. Thopsok	557	85	
		6. Houayko	178	31	
		7. Nabon	489	84	
		8. Nakok	649	114	
		9. Laonga	687	99	
		10. Kiat Ngong	983	168	
		11. Namom	802	153	
		12. Kele Gnai	971	168	
13. Ta Ong	267	53			

¹ The number of villages was reduced from 69 to 67 during the mid-term review because of Government's policy to combine small villages.

Province	District	Village	Total Population	# of Households	
		14. Tavang	215	36	
		15. Phalay	1,424	258	
		16. Saming	988	164	
		17. Khonthout	674	135	
		18. Keng Na Arn	710	134	
		19. Thongxai	453	87	
		20. Kala	645	115	
		21. Houayton	216	30	
Attapeu	Phouvong		23	9,073	1,591
			4	1,117	193
		1. B. Lamong	300	61	
		2. B. Phoungang	313	30	
		3. B. Phoukeua	212	42	
		4. B. Namxouan	292	60	
	Sanamxai		19	7,956	1,398
		1. B. Senkeo	145	29	
		2. B. Hat-Oudomxai	381	70	
		3. B. Sompoy	1,185	248	
		4. B. Sivilai	358	65	
		5. B. Tangao	238	50	
		6. B. Boungkeo	413	72	
		7. B. Khanmaknao	334	54	
		8. B. Pakbo	513	71	
		9. B. Hatxay-Soung	473	70	
		10. B. Namkong	437	73	
		11. B. Don	349	58	
		12. B. Nongmouang	438	83	
		13. B. Pin-Dong	253	44	
		14. B. Bengvilai	319	46	
		15. B. Kaxe	568	98	
		16. B. Phonmani	259	45	
		17. B. Chanto	321	51	
		18. B. Matka	442	69	
		19. B. Phonsa-At	530	102	
Sekong	Dakcheung		25	5054	789
			15	3,219	487
		1. B. Ayoun	232	14	
		2. B. Dakman	157	29	
		3. B. Dakta-Ok-Gnai	248	35	
		4. B. Dakta-Ok-Noy	175	25	
		5. B. Dakdom	243	44	
		6. B. Daksiang	187	16	
		7. B. Daklu	147	26	
		8. B. Daklan-Deuy	219	38	
		9. B. Daksiang Bi	244	41	
		10. B. Kongnong	215	26	
		11. B. Tangpuang	71	17	
		12. B. Tangmi	190	41	
		13. B. Tangyeuy	305	44	
		14. B. Tangno	190	36	
		15. B. Tangtalang	396	55	
	Kaleum		10	1,835	302
		1. B. Songkhon	450	78	
		2. B. Panon-Kaliang	108	15	
		3. B. Tavang-Bon	107	18	
		4. B. "Agnuang	170	41	
		5. B. Aching-Akeo	186	39	
		6. B. Chateu-Oung-Pale	104	17	
		7. B. Ka-Ouang-Ateng	185	27	
		8. B. Alot	166	19	
		9. B. Klo	225	33	

Province	District	Village	Total Population	# of Households
		10. B. Aloung-Laba	134	15
3 Provinces	5 Districts		27368	4689
LEGEND	Sample Villages			

5. The BCC will (i) provide secure forest rights for poor households and ethnic minority groups for their collective management of forest resources; (ii) restore habitat on degraded forest lands with planting of natives tree species and agroforestry models with improved sources of non-timber forest products; (iii) improve livelihoods and income enhancing small scale infrastructure; and (iv) generate over one million cash-based labor days through BCC activities. Delineation and demarcation of these corridors will be in consultation with primary beneficiaries based on a participatory land use planning approach.

6. In line with the targets of the 7th National Socio Economic Development Plan (NSEDP) 2011-2015, the proposed BCC will restore and maintain forest cover to contribute to the national target of 70% forest cover by 2015 and to contribute to achieving social sector targets such as decreasing poverty to below 19% of population by 2015 and improve access of population to clean water and use of latrines.

7. In 2007, Lao PDR joined the Forest Carbon Partnership Facility (FCPF) and was given grant funding to prepare a Readiness Preparation Proposal (R-PP) to establish how the country would prepare for participating in the Reducing Emissions from Deforestation and forest Degradation (REDD+) initiative, under the United Nations Framework Convention on Climate Change (UNFCCC). The R-PP was submitted at the end of 2010 and approved by FCPF in early 2011, and included a REDD+ strategy to provide the framework for implementing a range of REDD+ activities in the following five years. In 2010, Lao PDR was selected as one of a pilot country to participate in piloting REDD+ activities to be funded by the Forest Investment Program (FIP). A FIP Investment Plan² for Lao PDR was approved in 2012 which proposed that the FIP funds should be provided as additional financing to ongoing projects in order to benefit from the established implementation arrangements and so minimize transaction costs.

8. The FIP is one of three funds within the Strategic Climate Fund (SCF) administered by ADB, which is part of the global package of Climate Investment Funds providing finance for targeted programs to pilot new approaches in climate change adaptation and mitigation. The main purpose of the FIP is to finance large-scale piloting of measures to Implement national strategies for REDD as set out in the R-PP.

9. In 2013, the ADB and the Government of Lao PDR (GOL) undertook a project preparatory exercise to assess scope and implementing and financing arrangements of the proposed FIP investment. Based on the outcomes it was agreed that the FIP grant would be implemented as additional financing (hereinafter referred to as AF) of the BCC and be implemented in Phouvong District of Attapeu Province and Dakcheung District of Sekong Province. These areas were identified since they represent "hot spots" of deforestation and forest degradation. The AF will cover 21 villages in five Kum Bans in these two districts. These villages are different from the 69 villages targeted under the original financing.

10. The AF will seek to test the strategies for increasing the carbon storage potential within the project areas. The approach for identifying interventions will be a partial participatory land-use planning (PLUP) process based on reaching collective understanding of the causes and

² Government of Lao People's Democratic Republic. 2011. *Forest Investment Program Lao Investment Plan*. Vientiane.

drivers of carbon emissions. Consequently, the Project staff and community members will agree upon socially and environmentally acceptable strategies for reducing emissions and building carbon stocks. The range of programs is described below; however the specific technical detail and scope of each model will need to be defined during the planning process. As such, the AF will be implemented using a sector like approach and will require Project staff to keep updating the implementation plan and budgets.

11. The AF interventions will target 21 non-BCC villages in 5 Kum Bans in the two districts of Phouvong and Dakcheung. Kum Ban level details of these two districts are provided in the following tables.

**Dakpar-Tateau-Xekeman Kum Ban Area
(Dakcheung District, Sekong Province)**

DISTRICT	CLUSTER (Kum Ban)	VILLAGE	Number of families	Total population	BCC Village	Forest to cropland	Degr. For. To cropland	Cropland to regrowth
DAKCHEUNG (Upper Xekaman Catchment)	DAKPAR	Bronggnai	27	238		697	846	47
		Brongnoi+Bronj	65	401				
		Dakpaneu	25	219				
		Dak moung	31	191				
		Dakpar km 20	40	274				
		Dakpar+Daklan	33	266	Yes			
	TATEAU	Dak Trang	25	152		149	503	277
		Dak Mi	33	169				
		Dak Bu	109	352	Yes			
		Dak Le	27	153				
		Dak Tring	18	113				
		Dak Mong Yai+H	28	147				
	XEKAMAN	Dak Ta Ouk Noy	41	200	Yes	547	874	
		Dak Muan	54	347				
		Dak Dome	30	263	Yes			
		Dak Mun	34	174	Yes			
		Dak Ta Ouk Yai	36	161	Yes			
		Dak Yrung	37	194				
Dak Diang		23	217					
Mangha		75	389					
Total			791	4,620	6	1,393	2,223	386

Vongvilai-Namkong Kum Bans (Attapeu Province)

DISTRICT	CLUSTER (Kum Ban)	VILLAGE	Number of families	Total population	BCC Village	Forest to cropland	Degr. For. To cropland	Cropland to regrowth	
PHOUVONG (Upper Namkong Catchment)	VONGVILAI	Vongsomphou	261	1,439		288	192	227	
		Vangyang	200	1,128					
		Phouhome	171	871					
		Phouxay	58	288					
		Lamong	89	370	Yes				
	NAMKONG	Namkong	139	139		203	381	384	
		Vonglakhone	86	435					
		Viangxai	200	1,132					
	Total			1,204	5,802	1	491	573	611

Note: Village names may have changed due to merger of certain villages.

12. The AF outputs, activities, implementation and financing arrangements, procurement and disbursement arrangements are incorporated into the BCC structure and are included in this revised project administration manual (PAM). Accordingly henceforth the BCC and AF are referred to as the Project.

B. Impact and Outcome

13. The impact of the Project is climate resilient sustainable forest ecosystems benefitting local livelihoods while the outcome is sustainably managed biodiversity corridors in Lao PDR with communities ready to scale-up REDD+ activities.

C. Outputs

14. The original BCC outputs consist of: (i) institutional and community strengthening; (ii) biodiversity corridors restoration, ecosystem services protection, and maintained; (iii) livelihood improvement and small-scale infrastructure support provided in target villages; and (iv) project management and support services.

15. The AF investments are integrated within the existing outputs as modules including: (i) agroforestry with livestock support; (ii) agroforestry with crop support; (iii) utilization of non-commercial wood for charcoal production; (iv) afforestation and forest rehabilitation; and (v) forest protection and patrolling. The AF also supports monitoring of carbon stocks, water quality, and institutional capacity building. The AF activities will be implemented in Attapeu and Sekong Provinces.

16. The four outputs are detailed in the descriptions below along with changes agreed upon during the mid-term review mission.

1. Output 1: Institutions and Community Strengthened for Biodiversity Conservation Corridor Management and Ready to Implement REDD+

17. Under output 1, investments strengthen the capacity of the national, provincial, district and Kum Ban (development cluster) levels in corridor planning, corridor management, and providing protection and sustainable use policies, guidelines, and local regulations for enforcing the biodiversity corridor management plan. In particular, activities under output 1 will contribute to: (i) Biodiversity Corridor policy and legal framework, and management plans by 2018 covering at least 690,000 ha of forest and non-forest land in 67 villages spread across Attapeu, Champasak, and Sekong provinces in southern Lao PDR; (ii) participatory land use maps and village investment plans are ready by the end of 2014 in 69 villages covering 5 districts in 3 provinces; (iii) by the end of 2015, all villages receive collective forest land management certificates; and (iv) by Project end, over 90 provincial, 60 district, and 690 village level persons are trained in Project activities; from the trained persons, at least 40% are female with a large portion from ethnic minority groups.

18. Particular emphasis will be placed on GIS-based mapping of village conservation forests and community forests and developing management plans for these forests. The delineated corridor maps together with a draft management plan will be submitted to Provincial Office of Natural Resources and Environment (PONRE) for endorsement in each province and to Ministry of Natural Resources and Environment (MONRE) for approval. The village forests will be demarcated. The biodiversity corridor area will be demarcated along major road arteries and in villages. The Project will promote GMS transboundary cooperation between Lao PDR,

Cambodia, and Viet Nam by supporting exchange visits and sharing of information regarding scientific research, biodiversity database, forest cover, and management of transboundary forest ecosystems.

19. The collective forest management certificate or registration at district level will be provided to villages that enter into a co-management contract with the state owners/managers of forest land. This contract will enable the group to protect and manage the natural forest according to the approved management plan guidelines.

20. Provincial, district and cluster/village level target groups will be specifically trained in skills of biodiversity corridor management, patrolling, conservation, and water and forest protection. It is expected that by Project completion, provincial level staff will have acquired GIS based mapping skills—enabling its staff to integrate different layers of information and data into composite maps integrating conservation, climate change and development.

21. The AF will support awareness and capacity building on REDD+, training will be provided to provincial (6 courses) and district staff (12 courses) and at the community and village level (112 courses) within the districts of Dakcheung and Phouvoung and will specifically seek to support both female and ethnic groups. In addition, each participating district will host an annual forum on REDD+ for consolidating experience, and introducing new innovations and developments from within the REDD+ community. The AF will support construction/rehabilitation of the District offices of Natural Resources and Environment (DoNRE) in the two participating districts.

22. At the village level a modified land use planning process that identifies and assesses the drivers and causes of forest use, loss and degradation will be tested as possible strengthening of current PLUP processes. The planning will identify priority drivers and management responses for piloting implementation. Each subproject will be monitored under the carbon assessment and monitoring program.

23. Changes to output 1 agreed during the MTR include:

By 2018:

- (i) 67 BCC villages with PLUP approved – the reduction of two villages does not change the scope of the BCC grant program but represents the merger of participating villages. The MTR has agreed that PLUP will be completed by the end of the first quarter 2015 those incomplete will no longer participate in the BCC Grant funded project activities with savings reallocated;
- (ii) 62 plots of village forest land and 2,300 household certificates awarded – the change reflects the forest certification program in Laos and how this involves two differing certification approaches. The first being certificates awarded to community groups while the other being an individual household certificate;
- (iii) 3,000 trainees in land use planning, forest management, patrolling and livelihoods – an increase of approximately 500 trainees; and
- (iv) Among the trained persons at the national, provincial, district and village levels, at least 30 percent are female (overall target).

2. Output 2: Biodiversity Corridors Restored, Ecosystem Services Protected, Maintained and REDD+ Ready

24. The second output supports (i) village and cluster-based forest protection through patrolling and enforcement systems,³ (ii) forest restoration through community forest planting programs and through habitat connectivity planting demonstration sites, and (iii) the development of biodiversity data sets to define corridor management priorities and systems.

25. About 170,000 ha of the village forests within the total corridor landscape of 17,000 square kilometers will be patrolled by village patrols/guards. The coverage of forest area to be protected is on average 2,500 ha/village. During MTR it was agreed that the NPMO would develop a plan for the institutionalization of patrolling at a community level within the enforcement units at the commune and district level before 30 June 2015. If a province fails to prepare and approve such patrolling plans by the specified date, funding can be allocated to other provinces for patrolling or cancelled.

26. The investment under output 2 supports forest restoration covering 3,900 ha through enrichment and restoration planting, non-timber forest product (NTFP) planting and agroforestry. Restoration activities include payments for labor provided by households, in particular to women, thus improving household incomes.

27. Following the MTR, the planting program at the community level was restructured into a two-step process. Step one involves the development of a community forest planting plan for each in the district and province that covers the remainder of the Project life. The plan was prepared prior to June 2015 and defines the planting program in 2016 through the end of the Project. The plan was prepared by a provincially led forestry team supported by the grant implementation consultants (GICs) experts and identifies all sites to be planted by geo-reference, the size of site, the proposed planting model, the government forest norms to be applied, a cost estimate and a time line for planting, maintenance and ongoing inputs. The plan was reviewed by the NPMO and the GIC team leader prior to being approved by the respective Provincial authorities. The approved plan is the basis for preparing yearly work plans and the release of funds, the assessment of work completed and the assessment of survival and ongoing maintenance. Each planted site will be inspected twice in the first 12 months and annually thereafter by a team comprising the Provincial Forestry Department, PPMO and the GICs expert. All assessments by this team will be subject to independent verification by the monitoring program.

28. Connectivity planting program will involve two demonstration sites of around 400 ha each. The sites will be identified by the biodiversity assessment and corridor management contractor using existing data models. Each site will be field inspected and a proposed silviculture program will be prepared for investment during the planting season starting 2016. The silviculture will focus on conservation and habitat objectives and will be integrated with wider land use patterns through the use of agroforestry planting on the margins of natural forest planting.

29. The biodiversity assessment program will be extended and updated. First a habitat gaps model will be developed from existing data sets and used to prioritize and define the habitat planting demonstration sites and their management. Second vegetation data layers will be

³ The patrolling was moved from output 1 to output 2 at MTR so that it was more closely aligned with the forest level investment activities supported by the BCC grant.

updated through improved satellite imagery, using a time series from 2000 and 2015 to identify habitat change dynamics, and through a survey of mammals using camera traps. These new data layers will be incorporated into the biodiversity assessment models and used to define priorities for future management and two biodiversity assessment and corridor management knowledge products will be developed.

30. Community level planting is undertaken by community planting teams. Seedling supplies will need to be scheduled to fit the planting plan with preference given to existing commercial nursery supplies and if necessary BCC community based nurseries. Planting will be supervised by the PPMO and District forest staff.

31. Disbursement for forest planting will be triggered through the annual plan approval process. Failure to inspect planting will lead to all forest planting in that Province being suspended with resources allocated to other provinces. The forest inspection will validate planting areas, species and quality of work, which if approved will release funds for the labor input. A further inspection at around 9 months will identify and or, validate maintenance work, the need for blanking or additional maintenance. This inspection report will trigger the release of funds for year one maintenance. Each year all sites will be inspected until the Projects maintenance support ceases. All site inspections will be further monitored independently as part of the Project M&E to ascertain and verify their accuracy, and to assess impact.

32. The additional financing will support communities in the two districts (Dakcheung and Phouvong) to pilot models for future upscaling into a REDD+ project proposal. The models will seek to restore and protect ecosystem services with a primary focus on increasing the stock of carbon within the two Kum Ban clusters of these districts. Carbon benefits will derive from avoided emissions from both deforestation and forest degradation due to increased protection, alternative land use models, and alternative uses of forest and non-forest resources.

33. The AF will support community based patrolling of 50,000 ha, and community afforestation and forest rehabilitation, and large scale afforestation within a private–public management partnership, covering 1,450 hectares. Strengthening enforcement capacity will be provided at the Kum Ban and village levels for community-based forest protection with the involvement of law enforcement officials from Department of Forest Inspection (DoFI). The forest restoration activities include assisted natural forest restoration and enrichment planting with indigenous species and protection against free-range grazing.

34. The additional financing will support (i) measuring and monitoring carbon emission impacts – targeted reduction of 97,000 tonnes per year by 2026; and (ii) planning, demarcation and UXO removal.

35. Changes to output 2 targets based on MTR include:

By 2018:

- (i) 67 BCC villages with a total of at least 67 patrol teams with at least 40 patrolling⁴ interceptions per district per year; and by 2018 the number of violations reduced by 60% compared to the 2015 baseline–MTR changes include the additional

⁴ Note patrolling was moved from output 1 to output 2 to integrate this with the forest management and restoration activities.

- activity of integration of the community patrol with commune, and district institutions for enforcement and compliance including an institutionalization plan.
- (ii) Spatial assessment of biodiversity in the BCC completed and used to identify priority protection and management zones by 2016 – the contractor work has been (i) extended to conduct a habitat gap analysis and prioritization plan that will be used to identify and design a habitat connectivity planting program in two Provinces of Attapeau and Sekong; (ii) the assessment extended to the wider BCC corridor in Champasak and to add additional mammalian data layers through field surveys using camera trapping, and a habitat data update dynamics assessment using improved satellite images for 2000 to 2015.
 - (iii) The forest planting programs have been consolidated into two budgets (i) for the community based forestry based on PLUP outputs, and (ii) biodiversity habitat planting to increase connectivity for supporting fauna. The planting programs will no longer be based on prescribed planting models as per the original PAM but will be based on the completion of a planting plan prepared by the PPMU. Provincial and District Forestry staff and the GICs forest consultants must review and ratify the plan prior to Government approval. The plan will be used as input for the annual work plans. All silviculture and planting prescriptions and budgets using current forestry norms of Government will apply and ADB disbursement will be based on the prior approval of the planting plan.
 - (iv) For all forest planting a planting validation and monitoring program is introduced. Each planting area will be inspected within two months of planting being completed, to assess the accuracy of planting and quality of work. Remedial programs if required will be specified. A further inspection within 9 months will be used to assess survival rates and maintenance of plantings with blanking and additional maintenance scheduled for the following year. Disbursement for planting will be based on an advance not exceeding the cost of planting materials delivered on to the site by the suppliers labor funding will be released to the community on the first inspection if the areas and quality of work is approved. Maintenance will be released on the inspection – each planted area will be maintained for a period of 2 or 3 years as per the approved plan.

3. Output 3: Livelihoods Improved and Small-scale Infrastructure Support Provided in Target Villages

36. Under Output 3 of the BCC, on-demand livelihood and small scale infrastructure subprojects identified through participatory consultations, with supporting due diligence as required by both ADB and the Government will be supported. Each of the participating villages under the BCC funded grant will receive a block grant allocation [i.e., Village Development Fund (VDF)] for livelihood improvement purposes. The VDF will provide micro credit facilities to households to borrow for approved livelihood activities with repayments to the VDF with interest to generate a revolving mechanism.

37. The VDF is a decentralized financial instrument, managed by the villagers who elect a VDF Management Board or Committee. It operates on the basis of guidelines issued by the national project management office (NPMO). The establishment and sustainability of the revolving fund concept requires capacity development and technical support and the Project has made provision for this.

38. Other livelihood funds are allocated for the use of each village to develop and demonstrate new technologies and support home garden improvements. These funds will

support extension and training as well as demonstration support and will be limited to project beneficiaries that will contribute to improved biodiversity in the Project area.

39. Further, the selected communes will receive small scale infrastructure support for each for the participating villages. The small scale infrastructure subprojects will be reprioritized following the MTR. The MTR found the current arrangement for prioritizing infrastructure projects to be unworkable and agreed with Government on the following change to the process. A more focused set of infrastructure priorities will be developed based on which more detailed design and supporting feasibility studies will be conducted. Special attention will be given to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

40. The subprojects will avoid resettlement, land acquisition, and physical displacement or denial of access to resources currently under use by the beneficiaries. Small-scale infrastructure investments will only be undertaken on the basis of demand and agreement of the beneficiaries to in-kind contribution (e.g. labor, land, and willingness to undertake O&M, etc.). The selection criteria for sample subprojects are further detailed below.

41. Following the MTR the proposed Small Scale Infrastructure program was considered too ambitious and beyond the scope of implementation systems and capacity with far too many subprojects many with only weak links to the Project Outcome. Further, the first subproject detailed designs and feasibility studies provided by the NPMO were assessed as inadequate. The ADB and Government agreed to contract a detailed design and feasibility service provider that would (i) review the current subproject list and work with PPMOs to rationalize the scope of subprojects and the number, (ii) based on the agreed subproject priorities complete detailed design and feasibility studies for submission to the NPMO and ADB, and prepare bid documents and supervision of the subprojects.

42. All subprojects eligible for financing under the Project will be screened to ensure consistency with ADB and Lao PDR social and environmental safeguards. The following eligibility criteria, agreed between the Government of Lao PDR and the ADB are used during the subproject identification and screening phase; the subproject is:

- (i) one of the top three priorities of the beneficiaries in the village documented through participatory, multi-stakeholder consultations conducted by the project;
- (ii) affordable within the block allocation set aside for the village of approximately \$40,000;
- (iii) technically feasible (engineering wise) and satisfies criteria of mountainous area community based conditions;
- (iv) in conformity with land use plans in the village/ village cluster;
- (v) directly or indirectly benefits ethnic minorities and poor households – with special consideration for female-headed households;
- (vi) does not negatively impact on ethnic minorities' traditional socio-cultural and belief practices (e.g. child-rearing, health, education, arts, and governance);
- (vii) enhances livelihood systems of ethnic minorities (e.g., food production system, natural resource management, crafts and trade, employment status);
- (viii) avoids areas (land or territory) that will result in physical displacement from traditional or customary lands occupied, owned, or used by ethnic minorities;
- (ix) demonstrates local commitment to the subproject with confirmation by beneficiaries (inclusive of women and ethnic groups), and district authorities;

- (x) ensures that only activities that have a minimal negative impact on the environment are selected, and that the requirement for impact assessment, monitoring and management are met in a cost-effective way;
- (xi) complies with ADB's environmental safeguarding requirements and with the National Law on Environmental Protection;
- (xii) conforms with Category B subprojects of ADB's environmental classification system and also with Category 1 as outlined in Lao PDR's Decree on Environmental Impact Assessment of April 2010;
- (xiii) arrangements satisfactory to the Project have been made for undertaking operations & maintenance (O&M); not covered under any other on-going programs or projects (duplication avoidance); and
- (xiv) not located in any area where a major development, such as a new hydropower scheme, a mine, or a Special Economic Zone, is planned.

43. During construction phase, the Social Safeguards and Environmental Safeguards Specialists/National Consultants will make site visits to document any significant adverse impacts from construction and seek to address these through proposed mitigation measures.

44. The village level beneficiaries will receive training on technical maintenance and its repair. The households will be given orientation by the appropriate department responsible.

45. The District Governor will be requested to provide a written environmental protection commitment, which concludes the GOL compliance. Compliance with ADB environmental safeguards will be assessed through the regular ADB monitoring and reporting.

46. The benefiting households will draw up a plan for O&M that will include provision of voluntary labor inputs for maintenance work. Project M&E will be conducted for project duration. Guidance is provided under the ethnic minority development framework (EMDF) and resettlement framework.

47. The PPMO will report on the successful completion of the subproject to the NPMO and provide a beneficiary feedback form showing the level of satisfaction. This will be accompanied by reports from the Social and Environmental Safeguards Specialists on the due diligence and orderly implementation of the subproject as per guiding principles and safeguard criteria of the ADB and GOL.

48. Procurement of civil works contract for the subprojects will be carried out by the NPMO in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). The first two contracts, following ADB standard documents, will require prior approval of ADB regardless of the value of the contracts. Subsequent contracts will only be submitted to ADB for post approval.

49. Upon mobilization of the contractors, the NPMO will issue an order to proceed to the national consulting firm to carry out supervision of construction works. The NPMO will also recruit safeguard monitoring entities to monitor the implementation of social and environmental safeguard measures identified in the Resettlement Plan (RP), the Environmental Management Plan (EMP), the Gender Action Plan (GAP) and the Indigenous Peoples Plan (IPP). The monitoring entities will be recruited following CQS procedures. The DCO will provide assistance and support to both the national consultants and the safeguard monitoring entities in supervision and monitoring of the implementation of the subprojects.

50. Under Output 3, the AF will focus on (i) agroforestry with pasture based grazing to remove cattle from forest margins while providing productivity gains and revenues from the agroforestry planting; (ii) agroforestry with cropping that seeks to integrate agroforestry and cropping in a mutually beneficial manner; and (iii) the carbonization of noncommercial wood from forest and land use change concessions for charcoal production. Agroforestry production for livelihood enhancement will be carried out on forest land with insufficient tree cover to regenerate naturally. Livelihood activities will be prioritized at the start of project through a participatory consultative process with due recognition given to considerations of female members and ethnic groups. Activities will be screened based on needs identified in village development plans. 420 additional households will receive cash and technical support to improve productivity and income from livelihoods under the AF.

51. The implementation of the community level livelihood activities will be undertaken through a contracted service providers. AF will not adopt the VDF/block grant modality that is implemented under the BCC grant financing.

52. Changes to output 3 targets based on MTR include:

By 2018:

- (i) Funds for livelihood programs were reallocated into three categories – the VDF support and establishment costs, village livelihood funds and small scale infrastructure;
- (ii) All livelihood activities will target beneficiaries with forest land and forest resource use certificates;
- (iii) 67 BCC villages with Village Development Funds (VDF) established, and onlending to livelihood groups comprising BCC beneficiaries;
- (iv) All VDF funds are to be recycled at least 3 times to target beneficiaries with a default rate of less than 10%—additional VDF TA technical support is included to achieve this;
- (v) At least 40% of VDF beneficiaries (VDF production group members) are female – supported through the increase in non-VDF livelihood funding and the targeting onto home garden programs;
- (vi) At least 30% of VDF management board members are women;
- (vii) At least 30% of extension trainings for livelihoods in the 67 BCC villages will focus on home gardening, and among the beneficiary households from home gardening, at least one woman in each household participated in these trainings;
- (viii) Non-VDF were collapsed into a single budget line that will be accessed through a livelihood planning program, to enable a more demand driven livelihood program to be implemented – funding was increased to \$680,000;
- (ix) Small scale infrastructure improving the livelihoods of BCC villages based on the approved infrastructure plan – the scope of infrastructure investment has been reduced by limiting the number of types of infrastructure to be eligible, the provision of a contracted design team to assess priorities and complete detailed designs, reduced investment level to \$3.1 million (approximately 50% of initial allocation) to offset cost increases in project management and implementation, and through the impact of inflation that was not included in the original cost estimates; and
- (x) At least 4 profitable value addition businesses linked to other project activities supported in each District.

4. BCC Output 4: Project Management and Support Services

53. Output 4 provides services for project management. Capacity building for NPMO, provincial project management office (PPMO) and district staff is provided for project administration, procurement, financial management, progress reporting, impact monitoring, social and environmental safeguards and contract management. Some project staff are from provinces and districts, and lack familiarity with ADB and government procedures. Therefore considerable capacity building is necessary to facilitate the smooth implementation of the Project. The MTR found that the decentralized administrative capacity to be inadequate and after discussion with the Ministry of Finance it was agreed to recentralize the financial management function, whilst also building capacity at the Provincial level and once established enabling a limited step by step financial decentralization to be reintroduced.

54. The Project supports the project management structure comprising of supervision by the NPMO based in MONRE in Vientiane, and implemented by provincially based PPMOs established within PONRE offices in participating provinces. The support includes refurbishment of premises, equipping of offices, provision of vehicles, as well as provisions for implementing the Project including travel allowances, per diems and office operational budgets. In addition, the Project finances the recruitment of grant implementation consultants to provide implementation support and access to technical expertise needed in implementing subprojects. This recognizes the current implementation capacity and the general lack of familiarity with ADB procedures particularly among provincial and lower level staff.

55. The AF will further strengthen project management through the provision of additional vehicles and equipment for field monitoring and supervision, technical support for REDD+, additional consultant inputs for identified technical expertise which will be incorporated within BCC grant implementation consultant contract and additional inputs for procurement support – to assist with the use of service providers for implementation of AF activities. These additional inputs will enable GOL to ensure full time commitment of staff to implement the BCC and AF programs.

56. AF will also support scaling up efforts to strengthen provincial and district level capacity, including construction/rehabilitation of the provincial project management offices (PPMOs) in Sekong and Attapeu provinces and district coordination offices (DCOs) in Phouvong and Dakcheung districts respectively. AF supports 1 provincial coordinator per province and two staff positions for each District, along with with REDD+, agro-forestry and small enterprise development specialists; the establishment of Kum Ban level 'working groups' for Forestry/REDD+, livelihood support and village enterprise development; monitoring social and environmental safeguards; and specific initiatives to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

57. Changes to output 4 targets based on MTR include:

By 2018:

- (i) The main changes to output 4 reflect significant changes to the original PAM (i) the changes to the implementation arrangements where the lack of capacity in both the NPMOs and PPMOs has created a significant constraint to implementation, (ii) changes to the unit costs of Project operations and management activities as the original PAM incorrectly failed to include price contingencies resulting in large cost shortfalls, (iii) changes to the implementation

- arrangements and the mix of human resource skills within the NPMO and PPMO, (iv) changes to the financial management procedures and arrangements from a decentralized imprest account system to a centralized imprest account and financial management procedure;
- (ii) A full time national Project Manager was included as a government contracted position, the NPMO financial management team was upgraded with the appointment of a full time Accountant Assistant;
 - (iii) Additional consulting contracts were included to support the detailed design and feasibility studies for the small scale infrastructure program (the two existing local engineer position has been reassessed and reduced to one part time role from 2015) and for the independent safeguard monitoring that is a Grant covenant but was not resourced in the original PAM;
 - (iv) Additional resources are allocated to monitoring and evaluation activities and the work planning and budget coordination meetings budget lines; and
 - (v) A Project wide capacity building plan will be completed by the NPMO with support from the GIC's team prior to further training being undertaken from the 1st of January 2015 to ensure training is prioritized and properly developed and delivered as part of capacity strengthening for the Project strategy.

D. Technical Considerations of Modules Introduced Under Additional Financing

58. The AF will pilot approaches for conserving biodiversity and reducing emissions from deforestation and forest degradation. Specifically AF will target: promoting CO₂ emission mitigation activities and protection of forest ecosystem services through understanding and offsetting the causes and drivers of land use change. Emphasis will be placed on protection of the most densely stocked areas of forest within each village territory as these have the highest conservation value and also give rise to the greatest level of emissions of CO₂ if they are felled.

59. The AF interventions are structured into modules which will be contracted out to service providers to overcome the challenge of limited implementation capacity at the subnational level. All contracting will be conducted by the NPMO and is supported with the provision of both International and National Procurement Specialists to undertake the procurement program. The service provider will (i) conduct a planning exercise with a proposed investment option identified, costs and assessed using screening and approval requirements required of all BCC programs, (ii) provide logistic and implementation support, (iii) ensure monitoring and assessment is conducted as per BCC procedures.

60. Disbursement to the service providers will be triggered on (i) advance based on an approved work plan, (ii) a community plan that is approved, (iii) implementation outputs specified in the work plan, (iv) monitoring reports and findings provided as per contract. The following section describes the modules in greater detail. Appendix 4 contains the list of activities and expected outputs from each of these modules.

1. Community Forest Delineation and Patrolling

61. This module, to be undertaken under the direction of the GIC, will assist villagers to protect and patrol their forest land for a two-year time frame. During this time, the subproject will provide participating villages with: (i) field equipment necessary for patrolling; (ii) inform villagers of the legal basis behind patrolling; (iii) train villagers in a patrol system that includes apprehending those caught doing illegal activities and reporting events; and (iv) train villagers, and project staff in recording events by using the SMART patrolling database. As indicated

above, emphasis will be placed on protection of the most densely stocked areas of forest within each village territory as these have the highest conservation value and also give rise to the greatest level of emissions of CO₂ if they are felled.

2. Community Afforestation

62. A carbon assessment process will identify villages that contribute to carbon emissions from shifting cultivation and these will be assessed on viability of using afforestation for enhancing their village protection forests. Enhancing forests will require a commitment by the village (i.e., agreeing not to continue swidden cultivation on the newly enhanced forest or other forest under their control). If the village burns a forest, the project will immediately cease all support to the village.

63. Under this module which is to be implemented as per the existing BCC procedures under the direction of the GIC, villagers will be assisted to enhance their village forest where required, over a three-year time frame. During this time, participating villagers will be supported to undertake an assessment of the specific approach to be used in afforestation – i.e., full replanting (mainly on land that is severely degraded); enhancing an existing forest with partial replanting; or natural regeneration. The area and location of replanting, enhancement, or natural regeneration will be designated and agreed with participating villagers. Seedlings and other material necessary for the replanting will be purchased. Villagers will be trained in replanting techniques, maintenance techniques, and in protection, especially from farm animals. Villagers will be paid for their labor in replanting and maintaining the forest and the BCC inspection and auditing systems for planted areas will apply.

3. Large-Scale Afforestation Possibly through Joint Venture

64. After the village level carbon assessments are completed, the village assessment team will identify potential areas for large-scale afforestation. This will be done using remote sensing technology supplemented by ground truthing. Locations to be assessed will be in the catchments of the two AF districts. Forests will be assessed on the basis of: (i) proximity to shifting cultivation (if closer than 5 km, then afforestation will not proceed in that location); (ii) the ability of a replanted forest to provide other services, such as reducing soil erosion and increasing water retention; (iii) the ability of the afforestation contractor to manage a new forest in a given location for four years after replanting. Other considerations may also be included on a case by case basis.

65. After assessing locations, this module will support: (i) advice on approaches to large-scale afforestation – i.e., full replanting (mainly on land that is severely degraded), enhancing an existing forest with partial replanting, or natural regeneration; (ii) purchase of required seedlings and other material necessary for the replanting; (iii) training of contract labor, including from the villages, in replanting techniques, maintenance techniques, and in protection, especially from farm animals. This will be done under the direction of the GIC in collaboration with an afforestation contractor if such an approach is adopted.

4. Agroforestry – Cropping Subproject

66. During the village level carbon assessment, villages identified as contributing to carbon emissions from shifting cultivation will be assessed for alternative livelihood opportunities under the project. The process will involve exploring a series of technical options, starting with options that have a higher probability of success i.e., less risk to local farmers and households. Shifting

cultivation is driven by the need to produce sufficient rice or an alternate product to get through lean periods or to purchase rice. Therefore the proposed alternative interventions must ensure that adequate rice is produced or sufficient output of another crop is produced to purchase rice for household food security.

67. The subproject is based on experience in Lao PDR of addressing shifting cultivation through the development of an agroforestry – cropping system based on alley cropping between economic trees. Agroforestry cropping systems (crops and trees), agro silviculture pastoral systems (crops, tree and livestock) and silvo-pasture (trees and livestock) have been shown to generate viable returns after a 3 year period (e.g., \$632/ha/yr in one case). Other developers are using similar models where two crops of rice are followed by a fallow/livestock year with similar outcomes. These developers work with villages to find suitable land for such systems and then work with government to obtain medium- to long-term (15 – 50 years) leases for the land. The village holds the rental agreement and the developer provides a payment equivalent to the land rent costs for the lease period to the Village Development Fund or similar structure. The project then supports villagers to establish the agroforestry plots and works through government extension services to improve crop production and livestock.

68. Per capita rice consumption in Laos is set at 180 kg of rice or 290 kg of paddy rice (62% conversion efficiency) – for a 5 person household the total requirement is approximately 1.5 tonnes per annum. For dry land rainfed rice in upland areas yields lower than 1 t/ha is common such that 1.5 to 2 ha of rice is required. Under an agro-silvicultural system yield of 1.5 t/ha should be possible.

69. At these yields a village of 170 households requires 113 ha of land to produce their annual rice requirements per annum. For a 2 years cropping – 1 year fallow rotation a total area of 180 ha will be necessary. Inclusion of the silviculture land requirement increases the area required by 1.35 times such that a 2 crop 1 fallow rotation will require 245 ha. A more conservative 1 crop 2 year fallow system will require 340 ha. If the pilot demonstrates a production system that provides 50% of the rice requirement the total area per village is from 120 ha to 170 ha is required.

70. A similar process will be adopted under the AF. Villages will be assisted with identification of suitable land for the agri-silvi-pastoral development and if necessary the rental payment will be provided. Over the first year of tree establishment and cropping it is expected that shifting cultivation may continue however thereafter a community agreement to forego the shifting cultivation will be required. The area of the new agri-silvi-pastoral system will need to reflect the scale required to secure rice or its equivalent. Without the food security shifting cultivation will resume and may expand.

5. Agroforestry – Cattle Grazing Subproject

71. During the village level carbon assessment any villages that are identified as contributing to carbon emissions from forest degradation due to cattle grazing removing understory vegetation will be assessed for a range of potential subprojects linked to agro-silvi-pasture interventions. For cattle driven forest degradation the options are to move grazing lands, to adopt a cut and carry contained livestock sector, or to modify and intensify existing grazing lands. The lowest risk option will generally be the improvement of existing grazing lands followed by an option to move grazing to other improved areas. The interventions proposed need to ensure that they fit with livestock owner's capability and perceptions regarding the role and management of livestock within the wider household livelihood strategy.

72. Based on experience in Lao, it is estimated that a silvi-pastoral system would require a total of 390 tree per ha and grazing with a range of animals undertaken ranging from pigs goats and poultry systems. These systems after three years produced 200 kg/ha of fruit and supported the equivalent of 7 goats per ha. Net incremental income increased by approximately \$100/ha/yr. Similar systems internationally have been developed to support cattle grazing under trees with significant productivity gains reported in most countries ranging from Brazil to New Zealand. Further the Stora Enso model in Laos uses one year in tree as grazing for fertility build up and fallow successfully.

73. The AF program was scoped based on the village profile data for the Dakcheung Village Dak Moun. The village has a total land area of 13,481 ha, that supports 48 households and a total population of 386. Currently 1,249 ha approximately 10% of the total land area is used for grazing large livestock. As part of the Land Allocation and Land Use Planning project in 2012 the area allocated to large livestock was reduced to 768 ha which is spread over 3 blocks of land. For details of the expected outputs, tasks, activities and expected inputs see Terms of Reference in Appendix 2.

Village Livestock Example

Type of Livestock	Number (head)	Price and income
Buffalo	40	3-5 million Kip/head (8 million kip for big and fat herd)
Cattle	45	2.5 -5 million Kip/head (6 million kip for big and fat herd)
Goat	30	0.3 – 0.8 million kip/head (1 million kip for big and healthy head)
Pig	50	0.5-1.2 million Kip /head (often dead by diseases)
Poultry	100	Often dead by diseases

6. Carbonization of Non-commercial Wood from Cleared Forest and Hydro-power Dam Sites to Charcoal

74. Removal of biomass from areas to be inundated by reservoirs for hydro-power or irrigation is essential to limit the production of methane and carbon dioxide from the anaerobic decomposition of the biomass after flooding. This decomposition also consumes dissolved oxygen in the water and renders it uninhabitable for fish. MONRE has produced detailed guidelines for the removal of biomass from reservoirs⁵ and most concessions for hydro-power development issued since 2010 have the requirement that the operator prepare and implement a Biomass Disposal Plan. However, to date biomass disposal has mainly consisted of removing commercial timber species, but leaving all non-commercial and branchwood behind. This residual biomass can potentially be carbonized to produce charcoal as a domestic or commercial fuel. The same applies to the biomass from primary or secondary forest that is cleared for agriculture. Both of these options for sources of woody biomass provide potential benefits for local communities as a source of cash income from selling charcoal. In the future there is the possibility of producing biochar, which can be incorporated into the soil to improve its structure and lock up the carbon.

⁵ Water Resources and Environment Administration. (now within MONRE). 2010. *Environmental Guidelines for Biomass Removal from Hydropower Reservoirs in Lao PDR, Strengthening Environmental Management Phase II (SEM II)*. Vientiane.

75. During the village level carbon assessment, villages will be assessed on the potential to produce charcoal from biomass residues. Criteria will include: (i) the quantities of biomass available and the physical conditions for harvesting it; (ii) a substantial proportion of the villagers express an interest in learning how to operate the technology. The pilot trials will aim to: (i) examine the technical and financial aspects of harvesting and preparing the raw material; (ii) test the performance of the retorts; and (iii) examine the quality of the product with different species for feedstock. For details of the expected outputs, tasks, activities and expected inputs see Terms of Reference in Appendix 3.

76. All AF activities will adhere to the technical, social and safeguard criteria applied to the BCC subprojects.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

1. Ongoing BCC Project Readiness Activities

Indicative Activities	2010			2011					Due date	Who responsible*	
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May			
Advance contracting actions											NPMO
Establish project implementation arrangements											MONRE ^a / NPMO
ADB Board approval (10 Dec 2010)										SEER	
Loan signing (28 Feb 2011)											SEER/OGC/ MOF
Government legal opinion provided										MONRE ^a / MOF	
Government budget inclusion										MONRE ^a / MOF	
Loan effectiveness (28 May 2011)											SEER/OGC

BCC = Biodiversity Conservation Corridor, FIP = Forest Investment Program, MOF = Ministry of Finance of Lao PDR, NPMO = National Project Management Office, OGC = Office of the General Counsel (ADB), SEER = Environment, Natural Resources and Agriculture Division of the Southeast Asia Department (ADB), TOR = terms of reference.

^a The executing agency has been changed from the Ministry of Agriculture and Forestry to the newly created MONRE, which was formalized with Decision No. 3121/MONRE issued by the Minister of MONRE on 18 May 2012.

2. Additional Financing Project Readiness Activities

Indicative Activities	2015			2016					Due date	Who responsible*	
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May			
(i) Submit AF proposal to FIP Sub Committee									Mar 2016	SEER	
(ii) Grant negotiations									Mar 2016	SEER/OGC/ MOF/MONRE	
(iii) ADB Board Approval										Jun 2016	SEER
(iv) Grant Signing										Sep 2016	SEER/OGC/ MOF/MONRE
(v) Grant Effectiveness										Sep 2016	SEER/OGC
(vi) Advertise positions of NPMO and PPMO Project Managers										1 st Qtr 2016	SEER/ MONRE
(vii) Prepare TORs and bid documents for service contracts and technical and administrative positions										1 st Qtr 2016	SEER/ MONRE

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
Executing agency (EA)	
<ul style="list-style-type: none"> • Ministry of Natural Resources and Environment 	<p>MONRE will be responsible for overall project management and coordination through Department of Forest Resource Management (DFRM).</p>
<ul style="list-style-type: none"> • Ministry of Finance 	<p>MOF will be responsible for the establishment and management of imprest account</p>
<ul style="list-style-type: none"> • National Project Management Office 	<p>DFRM will establish a NPMO responsible for the day to day implementation of project activities at national level. Among others, the NPMO will be responsible for:</p> <ul style="list-style-type: none"> ➤ overall coordination and management of the Project; ➤ establishment and management of sub-accounts; ➤ recruitment of grant implementation consultants (GICS); ➤ recruitment of national consultants; ➤ recruitment of safeguard monitoring entities; ➤ procurement of civil works contracts for subproject construction; ➤ procurement of training services; procurement at national level of office equipment, and vehicles; and ➤ submission of progress reports to GOL and ADB.
<ul style="list-style-type: none"> • Provincial Steering Committee 	<p>Provincial Steering Committees (PSC), chaired by provincial vice governors, will be established in each of the provinces of Champasak, Attapeu, and Xekong to ensure inter-agency coordination at provincial level and to:</p> <ul style="list-style-type: none"> ➤ review implementation progress, and ➤ approve provincial work-plans and budgets.
Implementing agencies (IAs)	
<ul style="list-style-type: none"> • Provincial Offices of Natural Resources and Environment (PoNRE) 	<p>PPMOs will be established in the PoNRE of each of the provinces of Champasak, Attapeu, and Xekong to be responsible for day to day implementation and management of subprojects.</p> <p>Among others, the PPMOs will be responsible for:</p> <ul style="list-style-type: none"> ➤ establishment and management of sub-accounts; ➤ procurement of office equipment; ➤ supporting the supervision, monitoring and audit of local investment programs including the planting and

livelihoods programs;

- coordination of project activities at provincial level; and
- liaison with the district coordination offices

The PPMO will also provide secretariat services to the PSC.

- **District Offices** **Coordination** DCOs will be established within participating district agriculture and forestry offices (DONRE). The DCO will assist in implementation at the district level, and will be responsible for:
 - assistance with all community consultation and development activities;
 - assistance with survey/reports;
 - securing agreement in-kind contribution for demand driven subprojects relating to livelihoods and small scale infrastructure as requested by beneficiaries;
 - ensuring no physical displacement, denial of access to resources, or involuntary resettlement activities through subprojects;
 - coordination of environment management activities;
 - coordination of all other safeguard and gender activities;
 - assistance in the identification of business development and enterprise activities or initiatives;
 - monitoring of implementation of subprojects; and
 - report on progress of implementation.
-

Financiers

- **Asian Bank** **Development**
 - provide financing for 97.8% of the BCC Project cost through an ADF Grant;
 - provide financing for 99.5% of the AF Project cost through SCF-FIP;
 - monitor project implementation arrangements, disbursement, procurement, consultant selection, and reporting;
 - monitor schedules of activities, including funds flow;
 - review compliance with agreed procurement procedures;
 - review compliance with Grant Covenants;
 - monitor effectiveness of safeguard procedures.
 - monitor project conformity with ADB anti-corruption policies;
 - undertake a periodic review mission; and
 - undertake midterm project review jointly with the Government
-

B. Key Persons Involved in Implementation

Executing Agency**MONRE**

Name:
Address:
Telephone:
Email Address:

NPMO

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C. Project Organization Structure

77. MONRE is the executing agency for the Project. In turn, MONRE will establish an NPMO that will be responsible for project coordination and management, including financial management of project accounts, procurement of goods and works, recruitment of consultants, and monitoring and reporting.

78. At the midterm review of the original BCC Project⁶, slow implementation progress was found to be related to (i) project management constraints, (ii) inadequate financial procurement and disbursement capacity within the proposed decentralized project structures, (iii) lack of project implementation planning, and (iv) a need for improved integration of the livelihoods programs. Consequently it was agreed to create a full time project manager role for the day to day operation of the project, to recentralize financial management and the use of project plans for the forestry investment and livelihood investment programs. These plans will enable a more demand driven approach to planting and livelihoods where the approved plan will be incorporated into the annual work plan approval process. These approvals will provide the basis for disbursement.

79. In the three provinces of Attapeu, Champasak and Sekong, the implementing agencies will be PONREs. A PPMO will be established in each PONRE, to be responsible for financial management at provincial level, and coordination and management of implementation of subprojects. The PPMO will also coordinate and supervise the work of the district coordination offices (DCOs).

80. A provincial steering committee (PSC) will be established in each of the three provinces to ensure inter-agency coordination at provincial level. The PSC will be chaired by the provincial vice governor or his representative including governors from the participating districts. The PSC will meet bi-annually or as required to: review implementation progress; ensure adequate levels of coordination between key agencies; approve provincial work-plans and budgets; and approve subprojects for financing under the grant. Subproject investment reports (SIRs) shall be approved by PSCs after obtaining the necessary concurrence of ADB for social and environmental safeguards. The PPMO will provide secretariat services to the PSCs.

81. To assist in implementation at the district level, the DCOs will be established within participating district office of natural resources and environment (DONRE). The DCOs will provide coordination and supervision of subproject activities at district level. In particular, they will be responsible to assist with: identification of associated initiatives during subproject feasibility; community development activities; coordination of participatory consultation activities, securing and documenting agreement relating to on-demand subprojects relating to livelihoods and small scale infrastructure prioritized by the beneficiaries, ensuring that no physical displacement, denial of access, or resettlement activities are being promoted by any subproject; conduct environment management activities; indigenous people development activities; gender action activities; and monitoring and reporting on physical progress of implementation. The structures and staffing of each level are presented below.

82. The DCO in Dakcheung and Phouvong districts will support the AF activities by participating in activities implemented by service contractors and monitoring and endorsing the outputs. Similar to the national and provincial levels, the DCO will incorporate the AF activities

⁶ Held between 3-10 November 2014

as a set of additional activities in their respective BCC annual work plans and budgets.

83. Implementation of the AF activities will require some additional technical specialists to supplement the BCC GIC team. These include: team leadership, GIS, carbon measurement monitoring and trading expert, REDD / community forestry expert, procurement, training (REDD) and gender specialists and unallocated inputs. These specialists are added to the BCC GIC package.

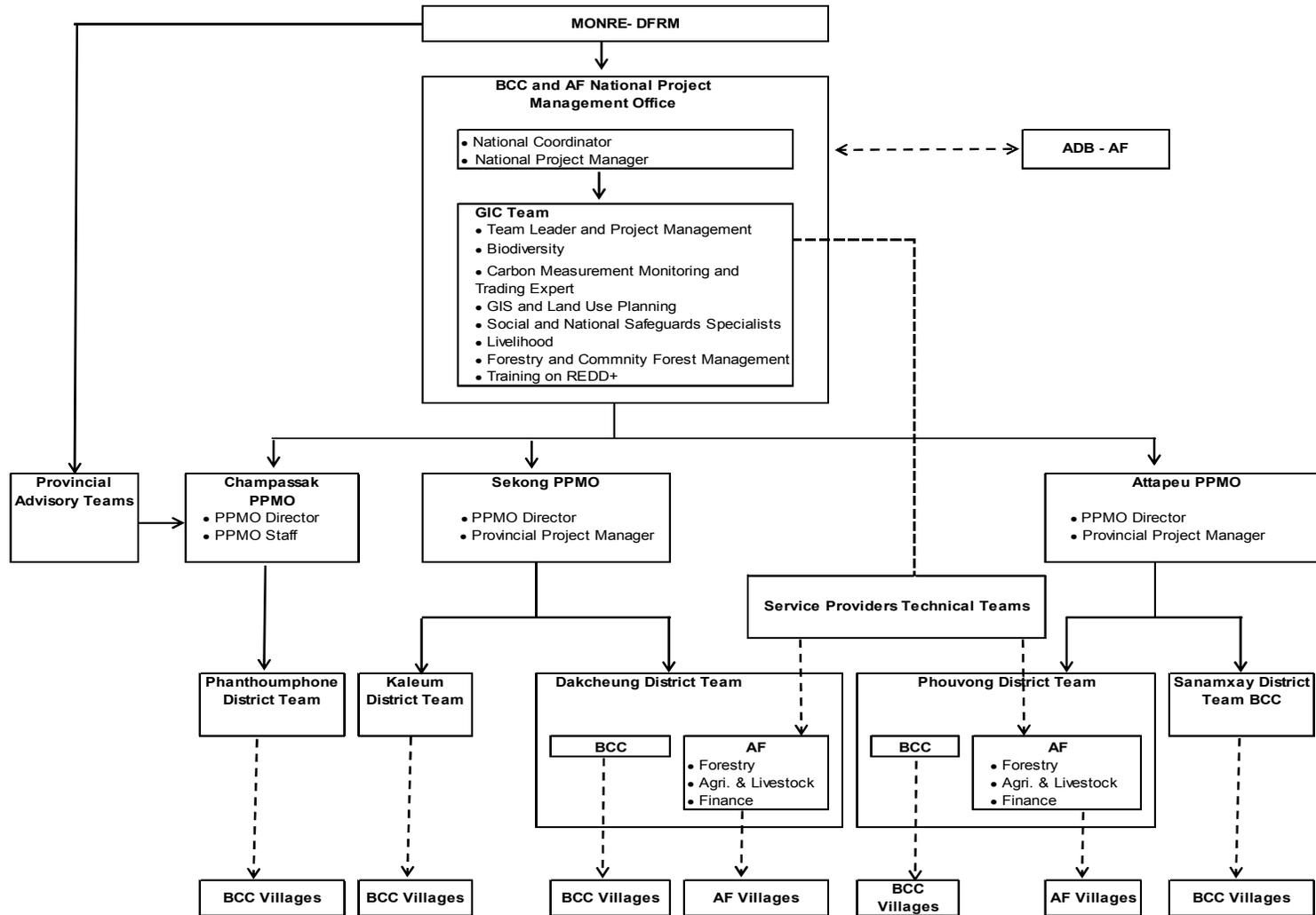
84. The investment programs to reduce CO₂ emissions, address both the need to improve livelihoods of local communities and activities needed to improve forest protection and management. The former mainly cover supporting the communities to change farming practices to deal with declining soil fertility for crops to avoid the need to rotate crops through large forest areas and to improve fodder for livestock to reduce the damage to forest regeneration from free range grazing. Such improved systems are expected to increase productivity and so improve food security, increase income and reduce poverty. Many of the technical skills required to develop system specifications for the program and to supervise and endorse the work of service providers lie in various departments in MAF. The following MAF Departments and Divisions will need to be engaged by DFRM to support project staff with implementation through the relevant PAFOs and DAFOs: Livestock Department, Department of Agriculture Extension, Department of Agriculture, Department of Forest Inspection (enforcement), Department of Forestry, Forest Inventory and Planning Division (FIPD) for establishing reference emission levels (REL) and monitoring, recording and verifying (MRV), Forest Research Centre in NAFRI for advice on selection of tree species and nursery practices.

85. The additional staffing required to implement the AF activities will be closely integrated into the existing BCC management structure, but modifications will be made to ensure that the AF activities and all financial dealings and records are kept separately, so that the performance of the AF investments can be evaluated independently in future.

86. The existing Provincial Steering Committee will provide interdepartmental coordination and support to both the existing BCC and the AF activities in their respective Provinces.

87. In Dakcheung and Phouvong districts where AF activities are to be carried out the current BCC Provincial Director will have the support of the additional staff to implement AF matters. These staff will coordinate and monitor the implementation of the activities of the service providers at the village level.

Figure 1: Project Organization Structure



ADB = Asian Development Bank; AF = additional financing; BCC = Biodiversity Conservation Corridors; DFRM = Department of Forest Resource Management; GIC = grant implementation consultant; MONRE = Ministry of Natural Resources and Environment; PPMO = provincial project management office; REDD+ = reducing emissions from deforestation and forest degradation

IV. COSTS AND FINANCING

A. Project Cost

88. The total Project cost is estimated at \$33.35 million. The Government requested a grant equivalent to \$20,000,000 from ADB's Special Funds resources to help finance the original Project. The Government contribution towards the original financing is \$0.27 million which covers the cost of resettlement and land acquisition (if any) related to the Project. The AF to accommodate the modified project scope will be \$12,900,000 of which ADB SCF will provide grant cofinancing equivalent to \$12,840,000, to be administered by ADB. The Government will finance the equivalent of \$0.06 million for incremental cost of administration. Beneficiary contributions are limited to the operation and maintenance of small scale infrastructure and are estimated at \$0.18 million. Taxes and Duties of \$1.69 million will be financed by the ADB ADF and SCF Grants.

89. Expenditure under the AF will be in parallel to those of the ongoing Project. A separate imprest account will be established for the AF. The same disbursement arrangements of the BCC Project will apply to the AF except for block grants, which will not be implemented under the AF. The financial management arrangements of the AF are considered adequate. Retroactive financing will apply for eligible expenses incurred before Grant effectiveness and up to twelve months prior to date of signing of the grant agreement, with a ceiling of 20% of the Grant amount. The revised investment and financing plans are in Tables 1 and 2.

Table 1: Revised Investment Plan
(\$ million)

Item	Current Amount ^a	Additional Financing ^b	Total
A. Base Cost^c			
1. Institutional and community strengthening for biodiversity conservation corridors management and implementation of REDD+	0.94	0.50	1.44
2. Biodiversity corridors restoration, protection, maintenance and REDD+ readiness	3.92	3.85	7.77
3. Livelihood and small-scale infrastructure	4.58	2.97	7.55
4. Project management and support	8.81	3.74	12.55
Subtotal (A)	18.25	11.06	29.31
B. Contingencies^d	2.20	1.84	4.04
C. Financing Charges During Implementation	0.00	0.00	0.00
Total (A+B+C)	20.45	12.90	33.35

^a Includes \$0.5 million in taxes and duties which will be financed through ADB ADF grant funds.

^b Includes taxes and duties of \$1.19 million to be financed by the Strategic Climate Fund in compliance with para 9, OM H3/OP. The following principles were followed in determining the amount of taxes and duties: (i) the amount is within reasonable country thresholds; (ii) the amount does not represent an excessive share of the project investment plan; (iii) taxes and duties apply only to SCF-financed expenditures; and (iv) the financing of taxes and duties is relevant to the success of the project.

^c in mid-2010 for the ongoing Project and mid-2015 for the AF.

^d Physical contingencies for additional financing computed at 5% for civil works, consulting services, training, surveys and studies. Price contingencies for additional financing, taking into account a PPP exchange rate, have been computed at 1.9% in 2016, 2.2% in 2017, 1.9% in 2018 and 1.8% thereafter on foreign exchange costs and at 5.5% in 2016, 5.0% in 2017 and 4.5% thereafter on local currency costs.

Sources: Asian Development Bank estimates.

Table 2: Revised Financing Plan

Source	Current		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank	20.00	97.8	0.00	0.0	20.00	60.0
Strategic Climate Fund ^a	0.00	0.0	12.84	99.5	12.84	38.5
Government	0.27	1.3	0.06	0.5	0.33	1.0
Beneficiaries	0.18	0.9	0.00	0.0	0.18	0.5
Total	20.45	100.0	12.90	100.0	33.35	100.0

^a Under the Forest Investment Program financed by the Strategic Climate Fund, administered by ADB.

Note: Bank charges related to operation of the imprest accounts will be financed from the respective grant proceeds.

Source: Asian Development Bank estimates.

B. Detailed Cost Estimates by Expenditure Category

1. Detailed Cost Estimates by Expenditure Category (Overall BCC Project Including Additional Financing)

Expenditure Accounts Project Cost Summary	(Kip Billion)			(US\$ '000)			% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total	
I. Investment Costs							
A. Civil Works							
1. Office Refurbishments	1.7	0.1	1.8	207.2	10.1	217.3	1
2. Small Scale Infrastructure	22.1	2.5	24.6	2,700.0	300.0	3,000.0	10
3. Resettlement	2.1	-	2.1	250.0	-	250.0	1
Subtotal	25.9	2.6	28.5	3,157.2	310.1	3,467.3	12
B. Afforestation Activities	48.1	2.6	50.7	5,870.6	318.5	6,189.1	21
C. Vehicles and Equipment							-
Vehicles	3.1	1.4	4.5	373.3	173.0	546.3	2
Equipment	7.3	0.3	7.6	889.8	41.4	931.2	3
Subtotal	10.4	1.7	12.1	1,263.1	214.4	1,477.5	5
D. Goods and Services	23.4	1.7	25.1	2,858.8	213.9	3,072.7	10
E. Livelihood Inputs	8.2	-	8.2	994.8	-	994.8	3
E. Consultancy Services							-
Locally Contracted Services	19.4	2.3	21.6	3,582.0	277.5	3,859.5	13
International Consultants	24.1	14.1	38.1	2,938.7	1,720.5	4,659.2	16
Subtotal	43.4	16.3	59.8	6,520.7	1,998.0	8,518.7	29
G. Capacity Building, Training, Workshops	13.3	8.7	22.0	1,621.7	1,066.4	2,688.0	9
H. Project Implementation Management	20.9	1.0	21.8	2,545.4	112.1	2,657.5	9
Total Investment Costs	193.5	34.6	228.1	24,832.3	4,233.4	29,065.8	99
II. Recurrent Costs							-
A. Government Expenses	0.6	-	0.6	71.4	-	71.4	0
B. O&M of Commune Infrastructure	1.5	-	1.5	178.9	-	178.9	1
Total Recurrent Costs	2.1	-	2.1	250.3	-	250.3	1
TOTAL BASELINE COSTS	195.6	34.6	230.2	25,082.6	4,233.4	29,316.1	100
Physical Contingencies	4.5	0.4	4.9	548.6	47.8	596.3	2
Price Contingencies	20.0	(0.0)	20.0	3,356.2	81.6	3,437.7	12
TOTAL PROJECT COSTS	220.2	35.0	255.2	28,987.4	4,362.8	33,350.0	114

Note: Figures may not sum due to rounding.

2. Detailed Cost Estimates by Expenditure Category (ongoing ADB Grant)

Expenditure Accounts	Project Cost Summa (Kip Billion)			(US\$ '000)			% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total	
I. Investment Costs							
A. Civil Works							
1. Office Refurbishments	0.9	-	0.9	113.6	-	113.6	1
2. Small Scale Infrastructure	22.1	2.5	24.6	2,700.0	300.0	3,000.0	16
3. Resettlement	2.1	-	2.1	250.0	-	250.0	1
Subtotal	25.1	2.5	27.6	3,063.6	300.0	3,363.6	18
B. Afforestation Activities	18.2	-	18.2	2,223.7	-	2,223.7	12
C. Vehicles and Equipment							
Vehicles	2.6	0.3	2.9	314.0	36.5	350.5	2
Equipment	4.6	0.0	4.7	561.8	6.0	567.8	3
Subtotal	7.2	0.3	7.5	875.8	42.4	918.2	5
D. Goods and Services	17.5	0.7	18.3	2,139.7	87.0	2,226.7	12
E. Livelihood Inputs	8.2	-	8.2	994.8	-	994.8	5
F. Consultancy Services							
Locally Contracted Services	18.0	1.5	19.5	2,196.5	184.8	2,381.3	13
International Consultants	18.7	11.7	30.5	2,285.5	1,430.5	3,716.0	20
Subtotal	36.8	13.2	50.0	4,482.0	1,615.3	6,097.3	33
G. Capacity Building, Training, Workshops	2.8	0.2	3.1	345.0	30.1	375.1	2
H. Project Implementation Management	15.0	0.3	15.3	1,830.8	31.2	1,862.0	10
Total Investment Costs	130.8	17.3	148.1	15,955.3	2,106.1	18,061.4	99
II. Recurrent Costs							
A. Government Expenses	0.1	-	0.1	12.8	-	12.8	-
B. O&M of Commune Infrastructure	1.5	-	1.5	178.9	-	178.9	1
Total Recurrent Costs	1.6	-	1.6	191.7	-	191.7	1
Total BASELINE COSTS	132.4	17.3	149.7	16,147.0	2,106.1	18,253.1	100
Physical Contingencies	1.5	0.1	1.5	177.4	11.0	188.4	1
Price Contingencies	12.0	0.1	12.1	1,972.3	36.5	2,008.7	11
Total PROJECT COSTS	145.9	17.5	163.4	18,296.6	2,153.6	20,450.2	112

Note: Figures may not sum due to rounding.

3. Detailed Cost Estimates by Expenditure Account (Additional Financing Only)

Expenditure Accounts Project Cost Summary	(Kip Billion)			(US\$ '000)			% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total	
I. Investment Costs							
A. Civil Works							
1. Office Refurbishments	0.77	0.08	0.85	93.60	10.10	103.70	1
Subtotal	0.77	0.08	0.85	93.60	10.10	103.70	1
B. Afforestation Activities	29.90	2.61	32.52	3,646.92	318.53	3,965.44	36
C. Vehicles and Equipment							
Vehicles	0.49	1.12	1.61	59.26	136.50	195.76	2
Equipment	2.69	0.29	2.98	328.04	35.40	363.44	3
Subtotal	3.18	1.41	4.59	387.30	171.90	559.20	5
D. Goods and Services	5.90	1.04	6.94	719.13	126.92	846.04	8
E. Consultancy Services							
Locally Contracted Services	11.36	0.76	12.12	1,385.49	92.67	1,478.15	13
International Consultants	5.36	2.38	7.73	653.22	290.02	943.24	9
Subtotal	16.72	3.14	19.86	2,038.71	382.68	2,421.39	22
G. Capacity Building, Training, Workshops	10.47	8.50	18.97	1,276.68	1,036.26	2,312.94	21
H. Project Implementation Management	5.86	0.66	6.52	714.60	80.94	795.54	7
Total Investment Costs	72.79	17.44	90.23	8,876.93	2,127.33	11,004.26	99
II. Recurrent Costs							
A. Government Expenses	0.48	-	0.48	58.60	-	58.60	1
Total Recurrent Costs	0.48	-	0.48	58.60	-	58.60	1
TOTAL BASELINE COSTS	73.27	17.44	90.72	8,935.53	2,127.33	11,062.86	100
Physical Contingencies	3.04	0.30	3.34	371.15	36.77	407.93	4
Price Contingencies	8.04	(0.12)	7.92	1,383.89	45.05	1,428.95	13
TOTAL PROJECT COSTS	84.36	17.62	101.98	10,690.58	2,209.15	12,899.73	117

Note: Figures may not sum due to rounding.

C. Allocation and Withdrawal of Grant Proceeds

1. ADF Grant Allocation Table (Revised at Midterm Review)

GMS BIODIVERSITY CONSERVATION CORRIDORS IN CHAMPASAK, ATTAPEU AND XEKONG PROVINCES				
CATEGORY				ADB FINANCING
Number	Item	Amount Allocated ^{a/}		Percentage and Basis for Withdrawal from the Grant Account
		Category	Subcategory	
1	Works	3,000,000		100 percent of total expenditure claimed
2	Office Refurbishment	117,064		100 percent of total expenditure claimed
3	Vehicles and Equipment	935,935		
3A	Vehicles		350,462	100 percent of total expenditure claimed
3B	Equipment		585,473	100 percent of total expenditure claimed
4	Goods and Services	5,351,777		100 percent of total expenditure claimed
5	Livelihood Inputs	1,014,474		100 percent of total expenditure claimed
6	Consulting Services	6,802,088		100 percent of total expenditure claimed
7	Training	479,027		100 percent of total expenditure claimed
8	Project Management	2,299,635		100 percent of total expenditure claimed
	Total	20,000,000		

Notes and explanations: Project Management includes the non-contracted staff costs, costs of NPMO,PPMO and District travel, steering committees, budget and work planning meetings, monitoring costs, office (including utilities) and vehicle operating costs and the costs associated with Corridor Zonation, PLUP, Forest certificate awards and boundary demarcation

2. Additional Financing Allocation Table

GMS BIODIVERSITY CONSERVATION CORRIDORS IN CHAMPASAK, ATTAPEU AND XEKONG PROVINCES			
CATEGORY			ADB FINANCING
Number	Item	Amount Allocated [\$] Category	Percentage and Basis for Withdrawal from the Grant Account
1	Works, Goods and Services and Project Management	12,840,000	100 percent of total expenditure claimed
	Total	12,840,000	

D. Detailed Cost Estimates by Financier

1. Detailed Cost Estimates by Financier (Overall BCC Project Including Additional Financing)

Expenditure Accounts by Financier (US\$ '000)	ADB Grant		ADB Strategic Climate Fund ^a		Government		Provinces		Beneficiary Contribution		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Investment Costs												
A. Civil Works												
1a. Office Refurbishment - ADB Grant	117.1	100.0	-	-	-	-	-	-	-	-	117.1	0.4
1b. Office Refurbishment - ADB SCF	-	-	138.7	100.0	-	-	-	-	-	-	138.7	0.4
2a. Small Scale Infrastructure - ADB Grant	3,000.0	100.0	-	-	-	-	-	-	-	-	3,000.0	9.0
3. Resettlement	-	-	-	-	-	-	255.0	100.0	-	-	255.0	0.8
Subtotal	3,117.1	88.8	138.7	4.0	-	-	255.0	7.3	-	-	3,510.8	10.5
B. Afforestation Activities												
1a. Afforestation Activities - ADB Grant	2,395.8	100.0	-	-	-	-	-	-	-	-	2,395.8	7.2
1b. Afforestation Activities - ADB SCF	-	-	4,522.9	100.0	-	-	-	-	-	-	4,522.9	13.6
Subtotal	2,395.8	34.6	4,522.9	65.4	-	-	-	-	-	-	6,918.7	20.7
C. Vehicles and Equipment												
1a. Vehicles - ADB Grant	350.4	100.0	-	-	-	-	-	-	-	-	350.4	1.1
1b. Vehicles - ADB SCF	-	-	206.9	100.0	-	-	-	-	-	-	206.9	0.6
2a. Equipment - ADB Grant	585.5	100.0	-	-	-	-	-	-	-	-	585.5	1.8
2b. Equipment - ADB SCF	-	-	462.6	100.0	-	-	-	-	-	-	462.6	1.4
Subtotal	935.9	58.3	669.5	41.7	-	-	-	-	-	-	1,605.4	4.8
D. Goods and Services												
1a. Goods and Services - ADB Grant	2,956.0	100.0	-	-	-	-	-	-	-	-	2,956.0	8.9
1b. Goods and Services - ADB SCF	-	-	990.7	100.0	-	-	-	-	-	-	990.7	3.0
Subtotal	2,956.0	74.9	990.7	25.1	-	-	-	-	-	-	3,946.7	11.8
E. Livelihood Inputs												
1. Livelihood Inputs - ADB Grant	1,014.5	100.0	-	-	-	-	-	-	-	-	1,014.5	3.0
Subtotal	1,014.5	100.0	-	-	-	-	-	-	-	-	1,014.5	3.0
F. Consultancy Services												
1a. Locally Contracted Services - ADB Grant	3,086.1	100.0	-	-	-	-	-	-	-	-	3,086.1	9.3
1b. Locally Contracted Services - ADB SCF	-	-	1,737.0	100.0	-	-	-	-	-	-	1,737.0	5.2
2a. International Contracted Services - ADB Grant	3,716.0	100.0	-	-	-	-	-	-	-	-	3,716.0	11.1
2b. International Contracted Services - ADB SCF	-	-	996.2	100.0	-	-	-	-	-	-	996.2	3.0
Subtotal	6,802.1	71.3	2,733.2	28.7	0	0	0	0	0	0	9,535.3	28.6
G. Capacity Building, Training, Workshops												
1a. Capacity Bldg, Training, Workshops - ADB Grant	479.0	100.0	-	-	-	-	-	-	-	-	479.0	1.4
1b. Capacity Bldg, Training, Workshops - ADB SCF	-	-	2,777.7	100.0	-	-	-	-	-	-	2,777.7	8.3
Subtotal	479.0	14.7	2,777.7	85.3	-	-	-	-	-	-	3,256.7	9.8
K. Project Implementation and Management												
1a. Project Implementation and Management - ADB Grant	2,299.6	100.0	-	-	-	-	-	-	-	-	2,299.6	6.9
1b. Project Implementation and Management - ADB SCF ^c	-	-	1,007.3	100.0	-	-	-	-	-	-	1,007.3	3.0
Subtotal	2,299.6	69.5	1,007.3	30.5	-	-	-	-	-	-	3,306.9	9.9
Total Investment Costs	20,000.0	60.4	12,840.0	38.8	-	-	255.0	0.8	-	-	33,095.0	99.2
II. Recurrent Costs												
A. Government Expenses ^d	-	-	-	-	72.5	100.0	-	-	-	-	72.5	0.2
B. O&M of Commune Infrastructure ^e	-	-	-	-	-	-	-	-	182.5	100.0	182.5	0.5
Total Recurrent Costs	-	-	-	-	72.5	28.4	-	-	182.5	71.6	255.0	0.8
TOTAL PROJECT COSTS	20,000.0	60.4	12,840.0	38.8	72.5	0.2	255.0	0.8	182.5	0.5	33,350.0	100.0

^a Under the Strategic Climate Fund administered by the Asian Development Bank and will be disbursed in parallel with the ADB Grant.

^b Project and Implementation includes allowances for Government (MONRE) staff participation in BCC Project activities (not salary costs) and the annual audit costs of the BCC Project

^c Project and Implementation includes allowances for Government (MONRE) staff participation in project activities for Additional Financing (not salary costs).

Project implementation and management also includes annual audit costs of the Additional Financing estimated at US\$62,500 financed by the SCF Grant.

^d In-kind.

^e In-kind.

Note: Figures may not sum due to rounding.

E. Detailed Cost Estimates by Outputs/Components

1. Detailed Cost Estimates by Outputs/Components (Overall BCC Project Including Additional Financing)

Expenditure Accounts by Components - Base Costs (US\$ '000)	Institutional & Community Category Strengthening Share %		Biodiversity Corridors, Restoration, Category Protection Share %		Livelihood and Small Scale Category Infrastructure Share %		Project Management and Category Support Share %		
	Total								
I. Investment Costs									
A. Civil Works									
1. Office Refurbishments	217.3	103.7	48%	-	0%	-	0%	113.6	52%
2. Small Scale Infrastructure	3,000.0	-		-		3,000.0		-	
3. Resettlement	250.0	-		-		250.0		-	
Subtotal	3,467.3	103.7	3%	-	0%	3,250.0	94%	113.6	3%
B. Afforestation Activities	6,189.1	-	0%	3,323.7	54%	2,865.4	46%	-	0%
C. Vehicles and Equipment									
Vehicles	546.3	-	0%	-	0%	-	0%	546.3	100%
Equipment	931.2	-	0%	5.1	1%	9.2	1%	916.9	98%
Subtotal	1,477.5	-	0%	5.1	0%	9.2	1%	1,463.1	99%
D. Goods and Services	3,072.8	-	0%	1,936.0	63%	47.9	2%	1,088.9	35%
E. Livelihood Inputs	994.8	-	0%	-	0%	994.8	100%	-	0%
F. Consultancy Services									
Locally Contracted Services	3,859.4	-	0%	-	0%	21.8	1%	3,837.6	99%
International Consultants	4,659.2	-	0%	-	0%	-	0%	4,659.2	100%
Subtotal	8,518.6	-	0%	-	0%	21.8	0%	8,496.8	100%
G. Capacity Building, Training, Worksho	2,687.9	612.4	23%	1,868.9	70%	107.1	4%	99.5	4%
H. Project Implementation Management	2,657.5	664.6	25%	641.6	24%	71.6	3%	1,279.8	48%
Total Investment Costs	29,065.7	1,380.7	5%	7,775.4	27%	7,367.9	25%	12,541.7	43%
II. Recurrent Costs									
A. Government Expenses	71.4	58.6	82%	-	0%	-	0%	12.8	18%
B. O&M of Commune Infrastructure	178.9	-		-	0%	178.9	100%	-	0%
Total Recurrent Costs	250.3	58.6	23%	-	0%	178.9	71%	12.8	5%
Total BASELINE COSTS	29,316.0	1,439.3	5%	7,775.4	27%	7,546.8	26%	12,554.5	43%
Physical Contingencies	596.4	23.3	4%	175.7	29%	272.4	46%	125.0	21%
Price Contingencies	3,437.7	331.2	10%	1,060.8	31%	357.7	10%	1,688.1	49%
Total PROJECT COSTS	33,350.0	1,793.8	5%	9,011.9	27%	8,176.8	25%	14,367.6	43%

Note: Figures may not sum due to rounding.

2. Detailed Cost Estimates by Outputs/Components – BCC Project (ADB Grant)

Expenditure Accounts by Components - Base Costs (US\$ '000)	Institutional & Community Strengthening		Biodiversity Corridors, Restoration Protection		Livelihood and Small Scale Infrastructure		Project Management and Support		Total
	Total	Category Share (%)	Category Share (%)	Category Share (%)	Category Share (%)	Category Share (%)	Category Share (%)		
I. Investment Costs									
A. Civil Works									
1. Office Refurbishments	113.6	- 0%	- 0%	- 0%	- 0%	- 0%	113.6 100%	113.6	
2. Small Scale Infrastructure	3,000.0	- 0%	- 0%	- 0%	3,000.0 100%	- 0%	- 0%	3,000.0	
3. Resettlement	250.0	- 0%	- 0%	- 0%	250.0 100%	- 0%	- 0%	250.0	
Subtotal	3,363.6	- 0%	- 0%	- 0%	3,250.0 97%	113.6 3%	113.6 3%	3,363.6	
B. Afforestation Activities	2,223.7	- 0%	2,223.7 100%	- 0%	- 0%	- 0%	- 0%	2,223.7	
C. Vehicles and Equipment									
Vehicles	350.5	- 0%	- 0%	- 0%	- 0%	350.5 100%	350.5		
Equipment	567.8	- 0%	- 0%	- 0%	- 0%	567.8 100%	567.8		
Subtotal	918.2	- 0%	- 0%	- 0%	- 0%	918.2 100%	918.2		
D. Goods and Services	2,226.7	- 0%	1,090.0 49%	47.9 2%	1,088.9 49%	- 0%	2,226.7		
E. Livelihood Inputs	994.8	- 0%	- 0%	994.8 100%	- 0%	- 0%	994.8		
F. Consultancy Services									
Locally Contracted Services	2,381.3	- 0%	- 0%	21.8 1%	2,359.5 99%	2,381.3			
International Consultants	3,716.0	- 0%	- 0%	- 0%	3,716.0 100%	3,716.0			
Subtotal	6,097.3	- 0%	- 0%	21.8 0%	6,075.5 100%	6,097.3			
G. Capacity Building, Training, Workshops	375.1	273.2 73%	- 0%	72.1 19%	29.7 8%	375.1			
H. Project Implementation Management	1,862.0	664.6 36%	607.8 33%	15.0 1%	574.6 31%	1,862.0			
Total Investment Costs	18,061.4	937.8 5%	3,921.5 22%	4,401.7 24%	8,800.5 49%	18,061.4			
II. Recurrent Costs									
A. Government Expenses	12.8	- 0%	- 0%	- 0%	12.8 100%	12.8			
B. O&M of Commune Infrastructure	178.9	- 0%	- 0%	178.9 100%	- 0%	178.9			
Total Recurrent Costs	191.7	- 0%	- 0%	178.9 93%	12.8 7%	191.7			
Total BASELINE COSTS	18,253.1	937.8 5%	3,921.5 21%	4,580.6 25%	8,813.3 48%	18,253.1			
Physical Contingencies	188.4	14.1 7%	39.0 21%	29.2 15%	106.2 56%	188.4			
Price Contingencies	2,008.7	204.4 10%	708.6 35%	16.1 1%	1,079.7 54%	2,008.7			
Total PROJECT COSTS	20,450.2	1,156.2 6%	4,669.0 23%	4,625.8 23%	9,999.2 49%	20,450.2			

Note: Figures may not sum due to rounding.

3. Detailed Cost Estimates by Outputs/Components (Additional Financing Only)

Expenditure Accounts by Components - Base Costs (US\$ '000)	Institutional & Community Category Strengthening Share %			Biodiversity Corridors, Restoration, Category Protection Share %		Livelihood and Small Scale Category Infrastructure Share %		Project Management and Category Support Share %	
	Total		Share %		Share %		Share %		Share %
I. Investment Costs									
A. Civil Works									
1. Office Refurbishments	103.7	103.7	100%	-	0%	-	0%	-	0%
Subtotal	103.7	103.7	100%	-	0%	-	0%	-	0%
B. Afforestation Activities	3,965.4	-	0%	1,100.0	28%	2,865.4	72%	-	0%
C. Vehicles and Equipment									
Vehicles	195.8	-	0%	-	0%	-	0%	195.8	100%
Equipment	363.4	-	0%	5.1	1%	9.2	3%	349.1	96%
Subtotal	559.2	-	0%	5.1	1%	9.2	2%	544.8	97%
D. Goods and Services	846.0	-	0%	846.0	100%	-	0%	-	0%
E. Consultancy Services									
Locally Contracted Services	1,478.2	-	0%	-	0%	-	0%	1,478.2	100%
International Consultants	943.2	-	0%	-	0%	-	0%	943.2	100%
Subtotal	2,421.4	-	0%	-	0%	-	0%	2,421.4	100%
F. Capacity Building, Training, Workshop	2,312.9	339.2	15%	1,868.9	81%	35.0	2%	69.8	3%
G. Project Implementation Management	795.5	-	0%	33.8	4%	56.6	7%	705.2	89%
Total Investment Costs	11,004.3	442.9	4%	3,853.9	35%	2,966.3	27%	3,741.2	34%
II. Recurrent Costs									
A. Government Expenses	58.6	58.6	100%	-	0%	-	0%	-	0%
Total Recurrent Costs	58.6	58.6	100%	-	0%	-	0%	-	0%
Total BASELINE COSTS	11,062.9	501.5	5%	3,853.9	35%	2,966.3	27%	3,741.2	34%
Physical Contingencies	407.9	9.2	2%	136.7	34%	243.2	60%	18.8	5%
Price Contingencies	1,428.9	126.8	9%	352.2	25%	341.6	24%	608.4	43%
Total PROJECT COSTS	12,899.7	637.5	5%	4,342.8	34%	3,551.0	28%	4,368.4	34%

Note: Figures may not sum due to rounding.

F. Detailed Cost Estimates by Year

1. Detailed Cost Estimates by Year (Overall BCC Project Including Additional Financing)

LAO BCC_FIP_Feb 2015										
Expenditure Accounts by Years -- Base Costs (US\$ '000)	Total	Base Cost								
		2011	2012	2013	2014	2015	2016	2017	2018	2019
I. Investment Costs										
A. Civil Works										
1. Office Refurbishments	217.3	-	33.2	19.9	15.5	45.0	1.0	102.7	-	-
2. Small Scale Infrastructure	3,000.0	-	-	-	-	-	900.0	1,500.0	600.0	-
3. Resettlement	250.0	-	150.0	100.0	-	-	-	-	-	-
Subtotal Civil Works	3,467.3	-	183.2	119.9	15.5	45.0	901.0	1,602.7	600.0	-
B. Afforestation Activities	6,189.2	-	77.1	110.2	-	980.7	1,862.6	984.0	1,143.3	1,031.3
C. Vehicles and Equipment										
Vehicles	546.2	-	350.5	-	-	-	195.8	-	-	-
Equipment	931.2	-	129.9	376.8	4.5	56.6	300.8	21.6	41.1	-
Subtotal Vehicles and Equipment	1,477.4	-	480.4	376.8	4.5	56.6	496.6	21.6	41.1	-
D. Goods and Services	3,072.8	0.1	89.8	246.7	378.0	378.0	692.2	734.1	553.8	-
E. Livelihood Inputs	994.8	-	-	12.7	22.0	766.6	88.0	105.6	-	-
F. Consultancy Services										
Locally Contracted Services	3,859.4	-	95.0	290.5	421.3	442.3	685.3	831.1	689.6	404.3
International Consultants	4,659.2	-	258.7	345.8	738.3	1,783.3	1,025.6	179.9	169.9	158.0
Subtotal Consultancy Services	8,518.7	-	353.7	636.3	1,159.6	2,225.6	1,710.8	1,010.9	859.5	562.3
G. Capacity Building, Training, Workshops	2,688.0	-	35.6	30.1	92.4	63.0	765.0	510.3	801.1	390.5
H. Project Implementation Management	2,657.5	-	131.7	231.5	318.7	557.6	580.6	314.1	339.7	183.6
Total Investment Costs	29,065.7	0.1	1,351.4	1,764.2	1,990.7	5,073.0	7,096.8	5,283.3	4,338.5	2,167.6
II. Recurrent Costs										
A. Government Expenses	71.4	-	5.4	7.3	-	-	14.7	14.7	14.7	14.7
B. O&M of Commune Infrastructure	178.9	-	-	-	-	17.6	46.1	57.6	57.6	-
Total Recurrent Costs	250.3	-	5.4	7.3	-	17.6	60.8	72.3	72.3	14.7
Total BASELINE COSTS	29,316.0	0.1	1,356.9	1,771.5	1,990.7	5,090.6	7,157.6	5,355.5	4,410.7	2,182.3
Physical Contingencies	596.3	-	3.0	2.0	32.8	54.3	128.9	135.2	149.6	90.6
Price Contingencies	3,437.7	-	0.2	0.1	266.6	452.0	756.2	749.4	830.2	383.0
Total PROJECT COSTS	33,350.0	0.1	1,360.0	1,773.6	2,290.2	5,597.0	8,042.6	6,240.1	5,390.5	2,655.9
Share of Total Costs	100%	0%	4%	5%	7%	17%	24%	19%	16%	8%

Note: Figures may not sum due to rounding.

2. Detailed Cost Estimates by Year – BCC Project (ADB Grant)

Expenditure Accounts by Years -- Base Costs (US\$ '000)	Base Cost									
	Total	2011	2012	2013	2014	2015	2016	2017	2018	2019
I. Investment Costs										
A. Civil Works										
1. Office Refurbishments	113.6	-	33.2	19.9	15.5	45.0	-	-	-	-
2. Small Scale Infrastructure	3,000.0	-	-	-	-	-	900.0	1,500.0	600.0	-
3. Resettlement	250.0	-	150.0	100.0	-	-	-	-	-	-
Subtotal	3,363.6	-	183.2	119.9	15.5	45.0	900.0	1,500.0	600.0	-
B. Afforestation Activities	2,223.7	-	77.1	110.2	-	479.7	1,195.7	361.1	-	-
C. Vehicles and Equipment										
Vehicles	350.5	-	350.5	-	-	-	-	-	-	-
Equipment	567.8	-	129.9	376.8	4.5	56.6	-	-	-	-
Subtotal	918.2	-	480.4	376.8	4.5	56.6	-	-	-	-
D. Goods and Services	2,226.7	0.1	89.8	246.7	378.0	378.0	378.0	378.0	378.0	-
E. Livelihood Inputs	994.8	-	-	12.7	22.0	766.6	88.0	105.6	-	-
F. Consultancy Services										
Locally Contracted Services	2,381.3	-	95.0	290.5	421.3	402.7	402.7	402.7	366.3	-
International Consultants	3,716.0	-	258.7	345.8	738.3	1,783.3	580.0	10.0	-	-
Subtotal	6,097.3	-	353.7	636.3	1,159.6	2,186.0	982.7	412.7	366.3	-
G. Capacity Building, Training, Workshops	375.1	-	35.6	30.1	92.4	63.0	48.6	63.0	42.4	-
H. Project Implementation Management	1,862.0	-	131.7	231.5	318.7	557.6	398.2	112.1	112.1	-
Total Investment Costs	18,061.4	0.1	1,351.4	1,764.2	1,990.7	4,532.4	3,991.3	2,932.5	1,498.8	-
II. Recurrent Costs										
A. Government Expenses	12.8	-	5.4	7.3	-	-	-	-	-	-
B. O&M of Commune Infrastructure	178.9	-	-	-	-	17.6	46.1	57.6	57.6	-
Total Recurrent Costs	191.7	-	5.4	7.3	-	17.6	46.1	57.6	57.6	-
Total BASELINE COSTS	18,253.1	0.1	1,356.9	1,771.5	1,990.7	4,550.0	4,037.4	2,990.1	1,556.4	-
Physical Contingencies	188.4	-	3.0	2.0	32.8	54.3	36.7	32.8	26.8	-
Price Contingencies	2,008.7	-	0.2	0.1	266.6	452.0	465.9	418.5	405.5	-
Total PROJECT COSTS	20,450.2	0.1	1,360.0	1,773.6	2,290.2	5,056.4	4,539.9	3,441.4	1,988.7	-
Share of Total	100%	0%	7%	9%	11%	25%	22%	17%	10%	0%

Note: Figures may not sum due to rounding.

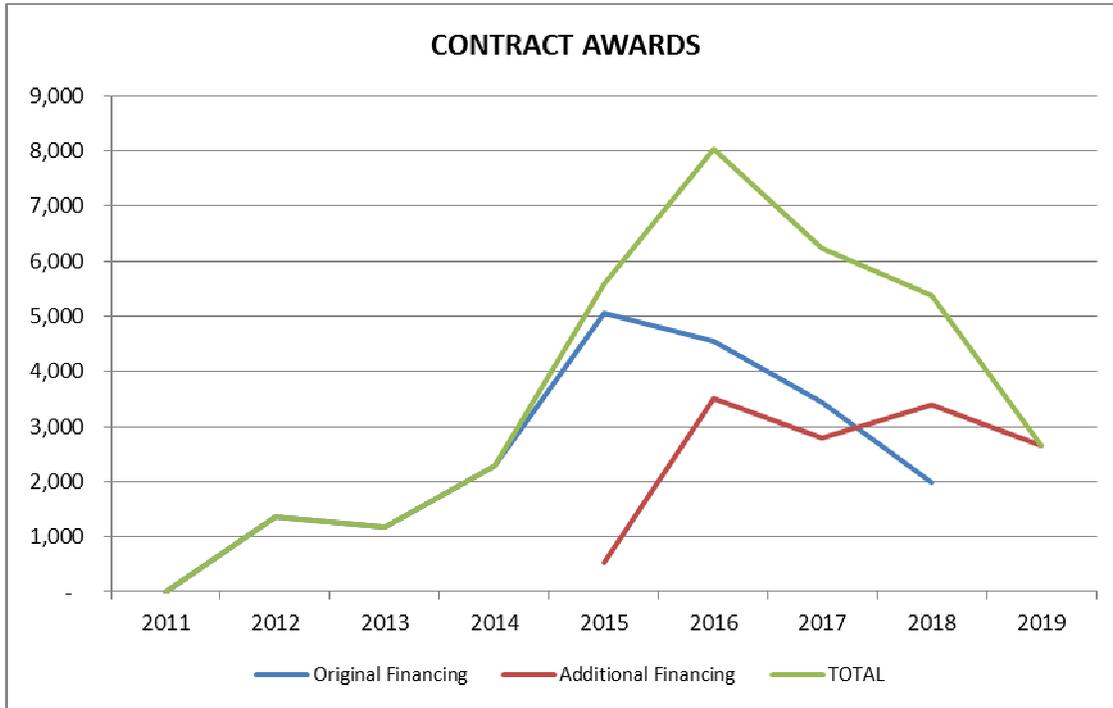
3. Detailed Cost Estimates by Year (Additional Financing Only)

Expenditure Accounts by Years -- Base Costs (US\$ '000)	Total	Base Cost									
		2011	2012	2013	2014	2015	2016	2017	2018	2019	
I. Investment Costs											
A. Civil Works											
1. Office Refurbishments	103.7	-	-	-	-	-	1.0	102.7	-	-	
Subtotal	103.7	-	-	-	-	-	1.0	102.7	-	-	
B. Afforestation Activities	3,965.4	-	-	-	-	501.0	666.9	623.0	1,143.3	1,031.3	
C. Vehicles and Equipment											
Vehicles	195.8	-	-	-	-	-	195.8	-	-	-	
Equipment	363.4	-	-	-	-	-	300.8	21.6	41.1	-	
Subtotal	559.2	-	-	-	-	-	496.6	21.6	41.1	-	
D. Goods and Services	846.0	-	-	-	-	-	314.2	356.1	175.8	-	
E. Consultancy Services	0										
Locally Contracted Services	1,478.2	-	-	-	-	39.6	282.5	428.3	323.4	404.3	
International Consultants	943.2	-	-	-	-	-	445.6	169.9	169.9	158.0	
Subtotal	2,421.4	-	-	-	-	39.6	728.1	598.2	493.2	562.3	
F. Capacity Building, Training, Workshops	2,312.9	-	-	-	-	-	716.4	447.4	758.7	390.5	
G. Project Implementation Management	795.5	-	-	-	-	-	182.4	202.0	227.6	183.6	
Total Investment Costs	11,004.3	-	-	-	-	540.6	3,105.6	2,350.8	2,839.7	2,167.6	
II. Recurrent Costs	0										
A. Government Expenses	58.6	-	-	-	-	-	14.7	14.7	14.7	14.7	
B. O&M of Commune Infrastructure	-	-	-	-	-	-	-	-	-	-	
Total Recurrent Costs	58.6	-	-	-	-	-	14.7	14.7	14.7	14.7	
Total BASELINE Costs	11,062.9	-	-	-	-	540.6	3,120.2	2,365.4	2,854.3	2,182.3	
Physical Contingencies	407.9	-	-	-	-	-	92.2	102.3	122.8	90.6	
Price Contingencies	1,428.9	-	-	-	-	-	290.3	331.0	424.7	383.0	
TOTAL PROJECT COSTS	12,899.7	-	-	-	-	540.6	3,502.7	2,798.7	3,401.8	2,655.9	
Annual Share of Total		0%	0%	0%	0%	4%	27%	22%	26%	21%	

Note: Figures may not sum due to rounding.

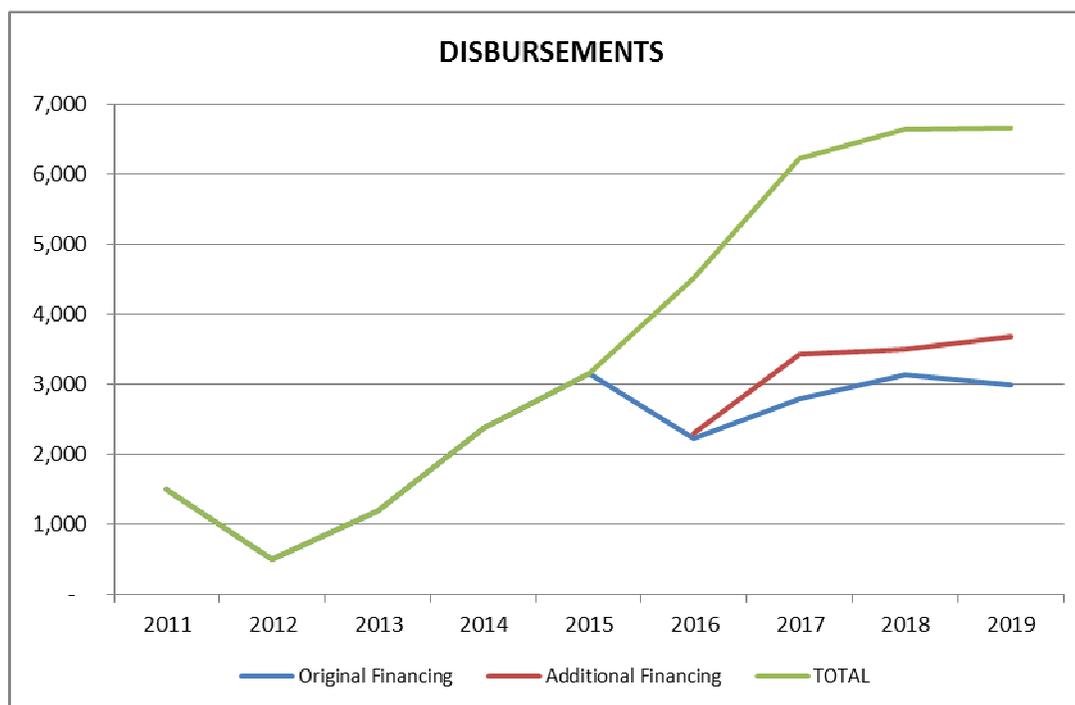
G. Contract and Disbursement S-curve

1. Contract Award S Curve



Contract Awards	2011	2012	2013	2014	2015	2016	2017	2018	2019
Original Financing	0	1,360	1,174	2,290	5,056	4,540	3,441	1,989	
Additional Financing					541	3,503	2,799	3,402	2,656
TOTAL	0	1,360	1,174	2,290	5,597	8,043	6,240	5,391	2,656

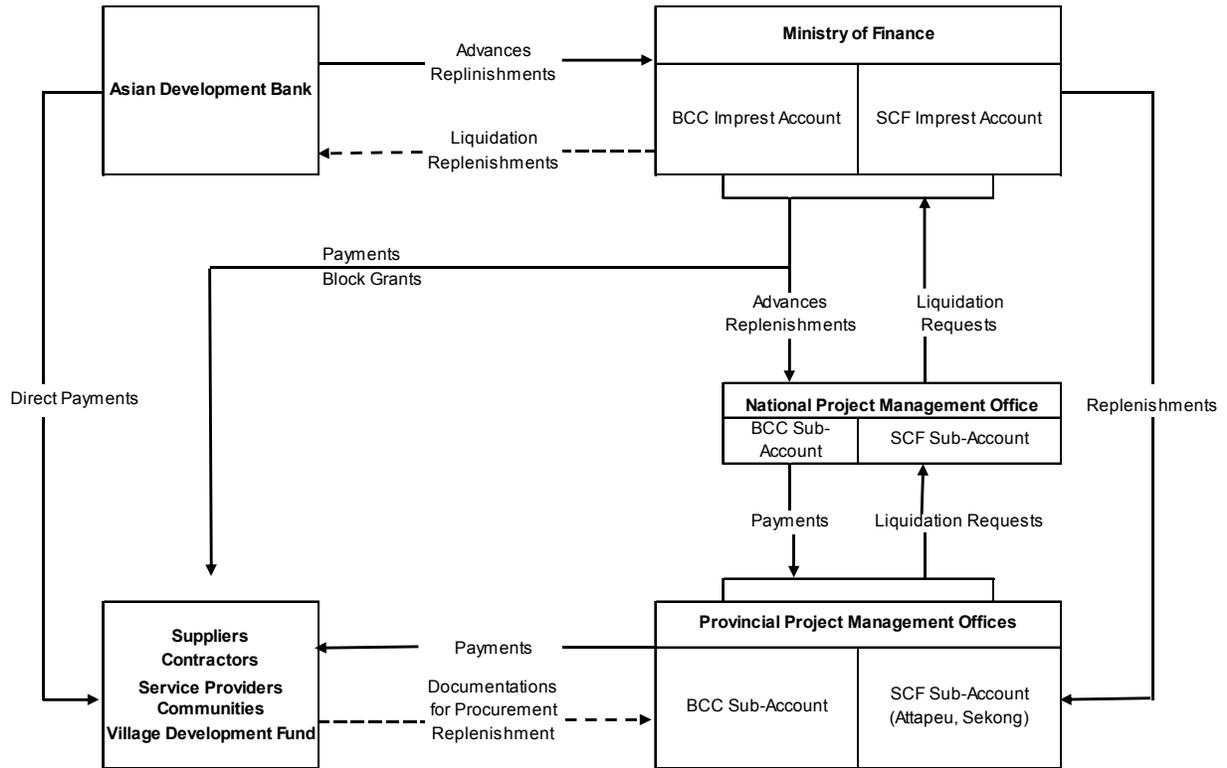
2. Disbursement S Curve



Disbursements	2011	2012	2013	2014	2015	2016	2017	2018	2019
Original Financing	1,500	501	1,181	2,374	3,159	2,227	2,784	3,136	2,989
Additional Financing						2,292	3,431	3,501	3,676
TOTAL	1,500	501	1,181	2,374	3,159	4,519	6,215	6,637	6,665

Source: Asian Development Bank estimates.

H. Fund Flow Diagram



V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

90. A financial assessment was carried out during the preparatory phase of the Project. The financial management arrangements were reviewed during the MTR in November 2014 based on which the financial management assessment was updated for the AF in December 2014. The main findings are summarized below.

91. **Country issues.** According to the latest available assessments by ADB and World Bank, the overall fiduciary risk in the Lao PDR is considered high. This is due to insufficient transparency over the use of public finances and limited public access to Government budget and financial information. In addition there is generally low awareness of modern practices of internal controls in the public sector. The financial management capacity of government staff at provincial and district levels is weak and needs to be strengthened. The external audit oversight function by the State Audit Organization (SAO) also needs improvement. There is a lack of well-trained and qualified local accountants and auditors in the country. There is reportedly a widely held public perception that the commitment to implement reforms is low, despite recent passage of laws and decrees aimed at strengthening public financial management. The level of corruption is perceived to be increasing according to investigations and survey results by international civil society and research organizations. At the country level, deficiencies in financial management systems include: (i) weak public financial management (PFM) systems; (ii) the shortage of financial management skills; and (iii) failure to follow PFM rules. There is a significant risk associated with shortfall in counterpart fund allocations with donor-assisted projects particularly in the provinces.

92. **Project specific issues.** MONRE and PONREs have limited experience with ADB procurement, disbursement, accounting and reporting requirements. Although they have been implementing the BCC project, experience to date confirms that financial, accounting, and auditing rules and systems are weak particularly at the subnational level. Based on the MTR findings, MONRE, MOF and ADB agreed to implement several measures to improve the efficiency of financial management and improve financial management skills of the NPMO and PPMOs.

93. Foremost, systems and procedures need to be strengthened along with additional monitoring and guidance in order to improve the overall performance of EA/IAs in implementing financial management of the project. The current system of financial management adopts an imprest account operated by Ministry of Finance (MOF) and subaccounts operated by the NPMO and 3 PMOs. During the MTR the PPMOs explained that project implementation was being impeded due to cash flow constraints at the provincial level. The suggestion was to increase account ceilings of the subaccounts to ensure adequate funds for implementation of key activities. However, a review of procedures and replenishment processing times did not support these claims, as neither factor was the underlying cause of delay. The major factor was the time taken to process expenditure documentation by the PPMOs through to the point of submission to ADB. Therefore in consultation with MOF, it was agreed that the solution is not to increase the ceiling of the subaccounts but to improve processing efficiency. It was agreed that a ceiling increase would be considered only after processing delays are fully resolved including a full accounting of all outstanding payments from provincial imprest subaccounts.

94. MONRE, MOF and ADB also agreed that the following measures be adopted:

- (i) financial management be linked to a consolidated work planning and budget process where each provincial work plan and budget has to be ratified by the NPMO to ensure budget and cost control systems are aligned;
- (ii) all financial management and processing will be centralized at the NPMO with approved work plans used to trigger advances. Future replenishment will be based on each province providing supporting documentation for fund release. In situations where documentation is overdue, a Provincial program will not be able to access more advance funds;
- (iii) ADB and the NPMO will seek additional technical support from (TA 8086-LAO: Supporting Decentralized Rural Infrastructure Development) to assist the NPMO and PPMOs to develop a financial management guidelines and to undertake training at the provincial level with support from MOF training programs;
- (iv) Wherever applicable, funds will be transferred directly from either the imprest account or the NPMO subaccount to service providers, including payment directly to community level accounts if they exist; and
- (v) The NPMO and MOF will develop criteria to assess financial management by the provinces. If after one year MOF and the NPMO are satisfied with improvements in financial management, provinces will be allowed to resume increased financial management responsibility through their subaccounts. Prior approval of ADB will be required.

Financial Management Risk Assessment and Mitigation Measures

Risk Type	Risk description	Risk Without Mitigation	Mitigation Measures	Risk With Mitigation
1. Public financial management risks.	Weak public financial management (PFM) systems, particularly accounting, budget preparation and execution, cash planning and performance measurement.	High	Asian Development Bank (ADB), World Bank and other development partners support on-going efforts to strengthen PFM arrangements, through technical assistance and lending.	Moderate to High
	Shortage of skills in financial management, including financial analysis, management accounting, financial reporting and audit.	High	On-going and planned efforts by ADB, World Bank and other development partners to support PFM reforms and capacity building in all PFM aspects. Government and development partner support for scholarships abroad.	Moderate to High

Risk Type	Risk description	Risk Without Mitigation	Mitigation Measures	Risk With Mitigation
	Malpractice and abuse of PFM rules by employees.	Moderate to High	Since 2007, significant progress has been made in strengthening the State Audit Organization (SAO). The new State Audit Law 2007 enhances its independence by having the SAO report to the National Assembly. Staffing has been doubled and regional offices opened outside Vientiane. The SAO has already started capacity-building activities to improve financial audits with support from development partners. An action plan for 2009–2020 focuses on building its capacity and defining its resource requirements with support from development partners. ^a	Moderate
Project-specific risks				
2. Government financing risks	Government may be unable to meet funding obligations due to budget constraints.	Moderate	Project financing plan has been formulated in consultation with the government. Counterpart financing is limited to recurrent costs of existing staff.	Low to Moderate
3. Procurement risks.	Procurement capacity within MONRE is limited.	High	MONRE / NPMP will contract staff experienced with procurement practices acceptable to ADB. Training for financial management and procurement will be provided by the financial management and procurement consultants.	Moderate
	Potential corruption from weak procurement oversight.	Moderate	Standard ADB bidding documents and procedures will be used. Grievance redress procedures, including misuse of funds, will be published on the project website, and mechanisms put in place to address any grievances received.	Moderate / Low

Risk Type	Risk description	Risk Without Mitigation	Mitigation Measures	Risk With Mitigation
4. Funds flow.	Funds may not reach intended beneficiaries in a timely manner.	High	All financial management and processing will be centralized at the NPMO with approved work plans used to trigger advances. Replenishment will be based on each province providing supporting documentation for fund release. Wherever applicable, funds will be transferred directly from either the imprest account or the NPMO subaccount to service providers, including payment directly to community level accounts if they exist.	Moderate / High
5. Staffing	MONRE as executing agency and PONRE as implementing agencies have limited staff capability in financial management, accounting, budgeting, internal controls and financial reporting.	Moderate / High	The NPMO will contract experienced financial management staff. All financial processing and management will be undertaken at NPMO following the MTR discovery of significant shortfall in documentation and procedural capability at the provincial level.	Moderate
6. Project external audit.	Delay in the submission of externally audited project accounts due to heavy workload of the SAO.	Moderate	MONRE has recruited an external auditor. The audit of the BCC Project will be financed by the ADB grant proceeds and the audit of the Additional Financing will be financed by the SCF grant proceeds.	Low
	Annual audit may not meet ADB requirements.	Moderate / Low	An external auditing firm will be recruited using the Consultants' Qualifications Selection (CQS) method with a Terms of Reference based on the agreed Standardized Terms of Reference for External Financial Audit Services.	Low
7. Coordination	Risk of continued ambiguities regarding the responsibilities between National and Provincial Mandates, and Authority	Moderate/ Low	The project will support continued dialogue at the national and provincial level (through a national and provincial steering committees), as required,	Low / Moderate
8. Information systems	Accounting software is in use, but not being utilized to its full capacity.	Moderate	Training and capacity development will be supported to strengthen the technical capacity of NPMO/PPMO staff.	Low

Risk Type	Risk description	Risk Without Mitigation	Mitigation Measures	Risk With Mitigation
Overall Risk		High to Moderate		Moderate

^a ADB. 2011. *Country Partnership Strategy 2012-2016 for Lao People's Democratic Republic, Appendix 2, No. 2 of linked documents: Risk Assessment and Risk Management Plan (Summary)*. Manila.

ADB = Asian Development Bank; MONRE = Ministry of Natural Resources and Environment; PONRE = Provincial Office Natural Resources and Environment

Source: Asian Development Bank and the Ministry of Natural Resources and Environment.

B. Disbursement

95. The ADB and SCF grant proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time), and detailed arrangements agreed upon between the Government and ADB. Subsequent to mid-term review, revisions on the disbursement arrangements were made and are reflected below. Online training for project staff on disbursement policies and procedures is available at: http://wpqr4.adb.org/disbursement_elearning. Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

C. Imprest Account

96. Upon project effectiveness, the government will establish a project imprest account at the Bank of Lao PDR (currently operated by the Ministry of Finance) in US Dollars to receive ADB grant funds. The imprest account will be replenished in accordance with standard procedures outlined in the ADB's Loan Disbursement Handbook and have a ceiling of \$2.0 million. The NPMO will be responsible for establishing, managing and replenishing and liquidating a subaccount to meet national level project costs. The PPMOs will set up subaccounts with commercial banks designated by the Bank of Lao PDR in each of the three provinces, to be used to meet provincial cost items not financed at the NPMO level. All accounts will be audited annually by an independent auditor.

97. The NPMO will be responsible for: (i) preparing disbursement projections; (ii) requesting budgetary allocations for counterpart funds; (iii) collecting supporting documents; and (iv) preparing and sending withdrawal applications to the MOF for onward submission to ADB. The NPMO will also be responsible for checking and signing off on all disbursement documents prior to submission to MOF. Liquidation of the PPMO subaccounts will be subject to submission of full documentation to the NPMO. The imprest account and subaccounts will be established and maintained for the loan proceeds only and managed, replenished and liquidated in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time),⁷ and other detailed arrangements agreed upon between the Borrower and ADB. The imprest and subaccounts are to be used exclusively for share of eligible expenditures. The Ministry of Finance is accountable and responsible for proper use of advances to the imprest account, including advances to the sub-accounts.

98. The EA may request for initial and additional advances to the imprest account based on an Estimate of Expenditure Sheet.⁸ The total outstanding advance to the imprest account should not exceed the estimate of ADB's share of expenditure to be paid through the account for the forthcoming six (6) months. Every liquidation and replenishment request of the imprest

⁷ Available at: <http://www.adb.org/documents/loan-disbursement-handbook>

⁸ Following the format provided in Appendix 10B of the Loan Disbursement Handbook

account, must be accompanied by (i) a Statement of Account (Bank Statement), and (ii) the Imprest Account Reconciliation Statement. Supporting documents should be submitted to ADB or retained by the EA in accordance with ADB's Loan Disbursement Handbook when liquidating or replenishing the imprest account.

99. The review of financial management arrangements carried out during the MTR revealed that the PPMO subaccounts posed a significant constraint on project implementation due to slow and incomplete replenishment procedures resulting in extremely low account balances. The main factor contributing to this was the lack of appropriate paper work and supporting compilation of replenishment requests. To address this issue, it was agreed that financial management processes will be centralized at the NPMO to ensure unreplenished expenditure is appropriately recorded and accounted for, and to ensure both systems and capacity are first established before subsequent decentralization of financial management systems. PPMO will submit full supporting documents to NPMO to substantiate their expenditures. NPMO has the capacity to operate ADB's imprest fund and Statement of Expenditures (SOE) procedures.

100. A separate imprest account in US dollars will be established to receive the SCF grant funds (i.e., the AF), with a ceiling of \$1 million. The fund flow arrangements for the SCF grant will be the same as those of the ADB grant except for disbursements to block grants which are not implemented under AF. Accordingly subaccounts will be established at the NPMO and the PPMOs of Sekong and Attepeu provinces and be operated under the same arrangements as the ADB grant fund management arrangements described above.

1. Direct Payment and Statement of Expenditures

101. ADB or SCF grant proceeds may be disbursed directly to contractors and consultants by ADB in accordance with the approved contracts, using direct payment procedures. For individual payments up to \$100,000 equivalent from the imprest account, ADB's SOE procedure may be used by NPMO to reimburse eligible expenditures and to liquidate advances. SOE records should be maintained and made readily available for review by ADB's disbursement and review missions or upon ADB's request for submission of supporting documents on a sampling basis, as well as for independent audit. NPMO will be responsible for ensuring that SOEs are operated in accordance with ADB's requirement. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB.

102. Before the submission of the first withdrawal application, the recipient shall submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the recipient, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000 equivalent. Individual payments below this amount should be paid (i) by the recipient and subsequently claimed to ADB through reimbursement; or (ii) from the imprest fund, unless otherwise accepted by ADB. Sample forms for withdrawal of grant proceeds, replenishment of imprest accounts, and SOE can be downloaded from the ADB website.

2. Disbursement and Liquidation Procedures for Counterpart Funds

103. Only salaries of staff seconded to the Project are to be financed from Government counterpart funds. These will be financed through the regular payroll mechanism for Government employees.

D. Accounting

104. The executing agency will maintain separate project accounts and records by funding source for all expenditures incurred on the Project. Project accounts will follow international accounting principles.

E. Auditing and Public Disclosure

105. The NPMO will cause the detailed consolidated project accounts to be audited in accordance with international standards on auditing by an auditor acceptable to ADB. The audited accounts will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the executing agency. The annual audit report will include an audit management letter and separate audit opinion which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the statement of expenditure procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents.

106. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

107. The Government and the NPMO have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts (covering failure of submitting audited accounts and financial statements by the due dates). In case of delays in submission of audited account and financial statements, a formal warning will be issued, and disbursements may be suspended, for accounts more than 6 months overdue. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

108. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011)⁹. After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

⁹ Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

109. All advance contracting will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. Retroactive financing will apply for eligible expenses incurred before Grant effectiveness and up to twelve months prior to date of signing of the grant agreement, with a ceiling of 20% of the Grant amount. The recipient, the EA and IAs have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the Project.

110. The NPMO has recruited the GIC. A variation to the GIC contract will be prepared for the AF activities. Consulting services are necessary for smooth implementation of the Project and to strengthen community participation in subproject design and subsequent operations and maintenance. Prompt appointment of consultants for implementation support is critical to ensure efficient implementation. Late recruitment of consultants is a significant factor in delayed project implementation and is also likely to have a negative impact on achievement of project benefits.

B. Procurement of Goods, Works and Consulting Services

111. All procurement of goods and works to be financed under the ADB grant will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). Civil work packages will comprise a number of small works scattered in remote areas of the three provinces, and are not likely to attract international bidders. Packages for works valued at less than \$3 million but more than \$100,000 or equivalent shall be procured following NCB procedures. NCB will follow the national procurement legislation and regulations (specifically the Prime Minister's Decree No. 03/PM of the Lao People's Democratic Republic, effective 09 January 2004, and Implementing Rules and Regulations effective 12 March 2004), subject to modifications and clarifications as required for consistency with the ADB Procurement Guidelines. The first two contracts, following ADB standard documents, will require prior approval of ADB regardless of the value of the contracts. Subsequent contracts will only be submitted to ADB for post approval. For works below \$100,000 equivalent, shopping procedures may be followed. Packages for goods costing less than \$1 million equivalent but more than \$100,000 shall be procured through NCB procedures. Smaller packages for goods valued at less than \$100,000 may be procured using shopping procedures. Smaller packages for goods valued at less than \$10,000 may be procured using direct contracting procedures, subject to the criteria set under PAI 3.05. Most of the reforestation activities, forest protection payment (patrolling), livelihood improvement block grants, and Village Development Fund (VDF) seed capital are community based services; and hence community participation works and services valued at less than \$30,000 per contract or per transaction will be procured using direct contracting procedures. Village development funds have been established at the time of the MTR with the transfer of agreed amounts to each participating community bank account direct from the imprest account.

112. Before the start of any procurement, ADB and the Government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Guidelines.

C. Procurement Plan Revised at Review Mission (February 2016)

113. The following 18-month procurement plan indicates threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines.. The procurement plan shall be updated annually. It may be revised, as required following a project review mission. This plan is updated to reflect the changes made during the review of the BCC in February 2016 and also includes the procurements planned under the AF. In case procurement arrangements need to be changed during implementation, the EA and IAs shall prepare a letter justifying the change with the updated procurement plan and submit the documents for ADB approval. The change in procurement arrangements shall be done in consultation with ADB. ADB will be responsible for posting the initial procurement plan and subsequent updates on ADB website.

Basic Data

Project Name: GMS Biodiversity Conservation Corridors Project	
Project Number: 40253-036	Approval Number:
Country: Lao People's Democratic Republic	Executing Agency: Ministry of Natural Resources and Environment
Project Financing Amount: \$ ADF - \$20 million ADB Financing: ADF - \$20 million Non-ADB Financing: \$12.8 million	Implementing Agency: Department of Forest Resource Management
Date of First Procurement Plan : 5 November 2010	Date of this Procurement Plan: 01 February 2016

1. Methods, Thresholds, Review and 18-Month Procurement Plan

a. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
National Competitive Bidding (NCB) for Works	\$3,000,000 but \geq \$100,000	Draft English language version of the procurement documents will be submitted for ADB review and approval regardless of the estimated contract amount. ADB approved procurement documents will be used as a model for all subsequent NCB financed by ADB, and need not be subjected to further prior review. ADB will review the bid evaluation report and award of contract on a post review basis. NPMO to procure all NCB packages. Prior review for the first 2 packages and subsequent packages post review.
National Competitive Bidding for Goods	\$1,000,000 but \geq \$100,000	Same as for NCB works, above. NPMO to procure all NCB packages. Prior review for the first 2 packages and subsequent packages post review.
Shopping for Works	Below \$100,000	Post review
Shopping for Goods	Below \$100,000	Post review
Community Participation for works, services, and transactions (seed capital, block funds)	\leq \$30,000 per contract	Post review. Contract template to be reviewed and approved by ADB, subject to the criteria and provisions set forth under PAI 5.10.

Direct Contracting	≤ \$10,000	Post review
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Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS)	Prior review. The NPMO has recruited implementation consultants from a firm, using full technical proposal.
Least-Cost Selection (LCS)	Prior review. The NPMO will recruit Audit Services from a firm, using full technical proposals.
Consultants Qualification Selection (CQS)	Prior review. The NPMO will recruit firms, using biodata technical proposals.
ICS	Prior review. Involves small contracts with specialist organizations or individuals for time critical work.

b. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments

c. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
	Independent safeguard monitoring	0.16	CQS	Prior	Q3/2016	BTP	

d. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package	General	Estimated	Number	Procurement	Review	Bidding	Advertisement	Comments

Number	Description	Value	of Contracts	Method	(Prior / Post)	Procedure	Date (quarter/year)	
	Office Renovation	\$0.063	Multiple	Shopping	Post		Q2/2016	By NPMO, PPMOs
001-RFQ-2015	Camera, Laptop and GPS for enforcement teams	\$0.024	1	Shopping	Post		Q4/2015	By NPMO
002-RFQ-2015	Cloth for enforcement teams	\$0.050	1	Shopping	Post		Q4/2015	By NPMO
003-RFQ-2015	Shoes and Belt for enforcement teams	\$0.036	1	Shopping	Post		Q4/2015	By NPMO
	Multiple, demand driven, small scale infrastructure subproject works	\$3.000	Multiple	Shopping	Post		Q2/2016	By NPMO NCB and Prior-review of 1 st 2 packages if more than \$100k
	Community Forest Planting program (multiple sites over the next 60 months)	\$0.368	Multiple	Shopping/ CPP for goods and services	Post		Q3/2015	By NPMO
	Corridor habitat connectivity demonstration (2)	\$0.8	Multiple	Shopping / NCB (based on approved plan)	Post		Q2/2016	NPMO/PPMO
	Agroforestry Planting program	\$0.79	Multiple	Shopping/ CPP (based on approved plan)	Post		Q2/2016	
	Village livelihood improvement subprojects	\$0.362	Multiple	Shopping / Community	Post		Q2/2016 & Q4/2016	By PPMOs
	Village Development Funds (VDF) seed capital	\$0.352	69 village funds	Direct Contracting / transfer of seed capital on eligibility	Post		Q3/2015	By NPMO
	Community service contracts for boundary marking	\$0.262	Multiple	Shopping/ CPP	Post		Q1/2014	By PPMOs

Consulting Services								
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/ year)	Type of Proposal	Comments

2. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Comments

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior / Post)	Type of Proposal	Comments

3. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and on-going contracts, and completed contracts.

Awarded and Ongoing Contracts

Goods & Works							
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Comments
	Project Sign Board, Boundary demarcation	\$0.080		Shopping/ Direct Contracting	Q4/2013		
	Insurance for Staffs and project Vehicles	\$0.050	\$0.018	Shopping		28 Oct. 2014	Lao Viet Insurance Co., Ltd.

Consulting Service							
Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comments
	GIC Contract	\$2.572	\$2.572	QCBS 80:20			GITEC, June 2012
	SSI design engineers	\$0.52	\$0.59	CQS	Q4/2014	30 Sep. 2015	G14082 Fraser Thomas
	Auditor Service	\$0.075	\$0.060	LSC			ACCMIN, August 2014 (for renewal)
	Community service contracts for forest patrolling over 8 years in 69 villages	\$1.376		Community			
	National Project Manager	\$0.060	\$0.049	ICS		Aug 2014	By NPMO (G12108 Venevongphet)
	National Procurement Specialist	\$0.043	\$0.043	ICS (12 pm, renewal)			Sengphet T, November 2011
	National Finance Specialist	\$0.210	\$0.210	ICS (12 pm, renewal)			Soumalie S, November 2011
	National Monitoring & Evaluation Specialist	\$0.084	\$0.084	ICS (3 CVs, 12 pm)			Phomma S, October 2013
	National Social Safeguard Specialist	\$0.168	\$0.168	ICS (12 pm, renewal)			Sanhti D, September 2012
	National Environment Specialist	\$0.143	\$0.143	ICS (12 pm, renewal)			Khamsene S, September 2011
	Translator	\$0.067	\$0.067	ICS (12 pm, renewal)			Bounhome P, May 2014
	Accounting Support Staff (4)	\$0.168	\$0.168	ICS (12 pm, renewal)			Various
	Administration Officers (4)	\$0.168	\$0.168	ICS (12 pm, renewal)			Various
	Forestry Technicians (5)	\$0.274	\$0.274	ICS (12 pm, renewal)			Various

Consulting Service							
	Agriculture extension (5)	\$0.274	\$0.274	ICS (12 pm, renewal)			Various
	Drivers (4)	\$0.084	\$0.084	ICS (12 pm, renewal)			Various
	Biodiversity Assessment Phase 2	\$0.29	\$0.287	ICS	Q1/2014	Jul 2015	Follow-on program; contract variation for G11547 issued in July 2015

1. Completed Contracts

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Date of Completion	Comments
	Motor Vehicles (pickups and motorbikes)	\$0.410	\$0.410	NCB/Shopping		August 2012	December 2012	
	Equipment for resource mapping	\$0.106	\$0.60	Shopping/ Direct Contracting		June 2013	September 2013	
	Additional Motorcycles (16 units)	\$0.038	\$0.023	Shopping			April 2014	
	Engineering and survey equipment rental (Topcon)	\$0.020	\$0.018	Shopping			February 2014	
	Truck 4WD for PCD	\$0.040	\$0.035	Shopping		April 2014		By PCD (Lao Toyota Service Co., Ltd)

Consulting Services								
Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Date of Completion	Comments
	National Environment Specialist	\$0.143	\$0.143	ICS			Khamsene S, Sep. 2011	
	VDF Consultants	\$0.156	\$0.156	ICS			Nakhonekham K, Aug. 2013	

	(3)						Somsouk S, Sep. 2013	
							Bounmy S, Oct. 2013	
	GIS, for Bio Assessment	\$0.160	\$0.160	ICS			Khampaseuth K, Dec. 2013	
	Botanist, for Bio Assessment				Vichith L, Dec. 2013			
	Biologist, for Bio Assessment				Chanthavy V, Dec. 2013			
	Civil Engineer 1	\$0.216	\$0.055	ICS	Q2/2013	2 Jan. 2014	Vannalerd S, Feb. 2014	
	Civil Engineer 2		\$0.047	ICS	Q2/2013	18 Aug. 2014	Thavisith O. Sep. 2014	

4. Non-ADB Financing - Additional Financing

The following table lists goods, works and consulting services contracts over the life of the project, financed by non-ADB sources.

Goods and Works						
General Description	Estimated Value ('000's) (cumulative)	Estimated Number of Contracts	Procurement Method	Advertisement Date (quarter/year)	Comments	
District Office Construction	101	2	Shopping	Q1/2017		
Office furniture, landscaping etc.	31	2	Shopping	Q2/2017		
Boundary Demarcation	168.7	2	Shopping	Q3/2016	PPMO	
Unexploded ordnances UXO	339	1	SSS	Q3/2016	NPMO Via Govt Program Alloc	
Vehicles	207	2	NCB	Q3/2016	NPMO (5-4wd and 8 motorbikes) Advance Action	
Equipment – Field	121	4	Shopping	Q3/2016	NPMO Advance action	
Equipment Offices	321	>5	Shopping	Q3/2016	NPMO Advance action	
Forest patrolling	434	21 for 2 yrs	CPP	Q3/2016	PPMO (21 village for 2 yrs)	
Community Afforestation	599	>21	CPP	Q1/2017		

Consulting Services					
General Description	Estimated Value (\$'000's)	Estimated Number of Contracts	Recruitment Method	Advertisement Date (quarter/year)	Comments

	(cumulative)				
Service Provider for provincial, district and village trainings	529.4	1	QCBS 90:10	Q3/2016	Awarded by NPMO Advance action
District Office Detailed Design	6.5	1	Direct Contracting	Q3/2016	PPMO Advance action
Carbon Measurement consultants	2160	1	QCBS(90:10)	Q3/2016	Awarded by NPMO
Consulting Services – firm contract	1,167	1	GIC contract variation	Q3/2016	NPMO (91 pm) Advance Action Estimated amount includes taxes
Contracted Govt Staff -FIP provincial project managers (2) -National project manager (1 - contract variation) -National procurement specialist (1) - National financial management (1- variation) -Project Accounts Assistant (1) -Project Admin Assistant (1) - Provincial accountants (2) -District field Coordinators (2)	1,023	Multiple (total 11 positions)	ICS	Q3/2016	NPMO (643 pm) Advance Action
Annual Project Monitoring	30	1	ICS	Q4/2016	NPMO (15 months)
Independent Evaluation – Impact Assessment – Monitoring and Evaluation	356.9	1	CQS	Q3/2018	NPMO
Completion Report	12	1	ICS	Q2/2019	NPMO
Audit	62.5	1	LCS	Q3/2016	NPMO
B: Service Contracts					
Livelihoods – Agroforestry Service Provider	3,504	1	QCBS (90:10)	Q3/2016	NPMO Advance action Package includes purchase of materials, procurement of labor (where applicable), and program design and implementation.
Large-Scale Afforestation	501	1	CQS	Q3/2017	
Biocarbon Production	46.9	>1	CQS	Q3/2016	NPMO

5. National Competitive Bidding

a. General

The procedures to be followed for National Competitive Bidding (NCB) shall be those set forth for “Public Bidding” in Prime Minister’s Decree No. 03/PM of the Lao People’s Democratic Republic, effective 09 January 2004, and Implementing Rules and Regulations effective 12 March 2004, with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the Procurement Guidelines.

b. Application

Contract packages subject to NCB procedures will be those identified as such in the project Procurement Plan. Any changes to the mode of procurement from those provided in the Procurement Plan shall be made through updating of the Procurement Plan, and only with prior approval of ADB.

c. Eligibility

Bidders shall not be declared ineligible or prohibited from bidding on the basis of barring procedures or sanction lists, except individuals and firms sanctioned by ADB, without prior approval of ADB.

d. Advertising

Bidding of NCB contracts estimated at \$500,000 or more for goods and related services or \$1,000,000 or more for civil works shall be advertised on ADB’s website via the posting of the Procurement Plan.

e. Procurement Documents

The standard procurement documents provided with Ministry of Finance, Procurement Monitoring Office shall be used to the extent possible. The first draft English language version of the procurement documents shall be submitted for ADB review and approval, regardless of the estimated contract amount, in accordance with agreed review procedures (post and prior review). The ADB-approved procurement documents will then be used as a model for all procurement financed by ADB for the project, and need not be subjected to further review unless specified in the procurement plan.

f. Preferences

- (i) No preference of any kind shall be given to domestic bidders or for domestically manufactured goods.
- (ii) Suppliers and contractors shall not be required to purchase local goods or supplies or materials.

g. Rejection of all Bids and Rebidding

Bids shall not be rejected and new bids solicited without ADB’s prior concurrence.

h. National Sanctions List

National sanctions lists may be applied only with prior approval of ADB.

i. Corruption Policy

A bidder declared ineligible by ADB, based on a determination by ADB that the bidder has engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing an ADB-financed contract shall be ineligible to be awarded ADB-financed contract during the period of time determined by ADB

j. Disclosure of Decisions on Contract Awards

At the same time that notification on award of contract is given to the successful bidder, the results of the bid evaluation shall be published in a local newspaper or well-known freely accessible website identifying the bid and lot numbers and providing information on (i) name of each Bidder who submitted a Bid, (ii) bid prices as read out at bid opening, (iii) name of bidders whose bids were rejected and the reasons for their rejection, (iv) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. The executing agency/implementing agency shall respond in writing to unsuccessful bidders who seek explanations on the grounds on which their bids are not selected.

k. Member Country Restrictions

Bidders must be nationals of member countries of ADB, and offered goods, works and services must be produced in and supplied from member countries of ADB for the ADB-financed grant. Universal procurement will apply to the AF-financed activities.

D. Consultant's Terms of Reference

114. The Grant Implementation Consultants (GIC) comprise a total of 360.5 person-months including 33.8 person-months of international specialists and 326.8 person-months of national specialists. Consultants were recruited according to ADB's Guidelines on the Use of Consultants (2013 as amended from time to time). The Project will require three types of consulting services to assist and support the NPMO and PPMOs with: (i) project implementation support including policy development at national level; (ii) preparation of subprojects; and (iii) safeguard monitoring during implementation. The outputs and deliverables from all consulting services shall be in accordance with the Government policies, and in support of the provincial development strategies and the needs of the beneficiaries.

115. The GIC were recruited by the NPMO through a firm using Quality- and Cost- Based Selection (QCBS) procedures using a ratio of 80:20. The detailed terms of reference (TOR) for the GIC as per Contract variation # 2, Dec 2015, are in Appendix 2.

116. The NPMO has recruited consultants to assist in the preparation of feasibility studies, detailed design, preparation of bidding documents, and supervision of construction of small-scale infrastructure subprojects using consultant's qualification selection (CQS).

117. The NPMO will also be responsible for recruitment of individual consultants, national institutes such as NGO, universities to monitor implementation of social and environmental safeguard measures and to carry out service contracts under the AF as described in Section VI.C.4 above. These institutes will also be recruited using CQS procedures. The packages for these entities are considered to be \$500,000 or less and would not justify the preparation of detailed technical proposals. Furthermore, CQS procedures will reduce recruitment time to ensure timely implementation of these critical inputs.

118. Following the MTR the procurement plan has been updated with additional packages for a GIC contract variation, the contracting of an infrastructure design and feasibility team to be provided by a firm to be selected using CQS, and independent safe guard monitoring as required under the Grant Agreement. Forest planting is now included as a single budget line, small scale infrastructure has been reduced and the livelihoods budget increased according to agreement reached by the Government and ADB during the MTR.

119. The AF activities will require an additional 24 person months of international and 67 person months of national consultants, which will be included as a contract variation to the GIC contract. An additional 637 person months of inputs will be as secured through ICS procedures as 'Government contracted positions' to assist the NPMO and PPMOs. Other specialists will also be procured under service contracts.

1. Rationale for the Level of Consultancy Support

120. The relatively high level of support proposed for the NPMO and PPMOs is based on experience with ADB financed ANR Sector Projects currently being implemented or implemented within the past 10 years in Lao PDR. The early selection and fielding of consultants is considered critical in view of the different approach followed for this Project which features subprojects that have already been selected and pre-screened and an increased focus on safeguard issues. The level of support is also justified given that the designs are likely to be more challenging in the mountainous terrain.

2. Recent Experiences

121. The complex government procedures and approval processes for the selection of consultants together with the process of ratification by ADB often leads to extensive delays in the recruitment of consulting services. This process is particularly more complex for QCBS procedures there is a risk that GIC may not be mobilized on a timely basis and will not be available in the early period of implementation when they are most needed. Such delays will have repercussions in the preparation of subprojects and subsequently on grant disbursement. National staff appointed to project management structures often lack familiarity with ADB procedures and GIC are needed to perform a very necessary function filling this capacity deficit in the early implementation of the Project.

Consultant Deployment Schedule

Consultancy Support to BCCP	2017				2018				2019				2020				2021				2022				Total															
	J	A	S	O	N	D	F	M	A	M	J	J	A	S	O	N	D	F	M	A	M	J	J	A		S	O	N	D	F	M	A	M	J	J	A	S	O	N	D
McNIRE Individual Consultants																																								
1. Procurement Specialist																																								
2. Financial Specialist																																								
3. Financial Assistant																																								
4. Administrator																																								
5. Translator																																								
6. Environmental Safeguards																																								
7. Social Safeguards																																								
8. Monitoring & Evaluation																																								
9. Engineers for Infrastructure (3 positions)																																								
Sub-total																																								
Champasak Province																																								
1. Forest Plantation & Nursery Assistant																																								
2. Agriculture Extension Assistant																																								
3. Financial assistant																																								
4. Administrator																																								
5. VOF trainer/monitor																																								
Sub-total																																								
Attapeu Province																																								
1. Forest Plantation & Nursery Assistant (Banamou district)																																								
2. Agriculture Extension Assistant (Banamou district)																																								
3. Forest Plantation & Nursery Assistant (Phouvang district)																																								
4. Agriculture Extension Assistant (Phouvang district)																																								
5. Financial assistant																																								
6. Administrator																																								
7. VOF trainer/monitor																																								
Sub-total																																								
Sekong Province																																								
1. Forest Plantation & Nursery Assistant (Kham district)																																								
2. Agriculture Extension Assistant (Kham district)																																								
3. Forest Plantation & Nursery Assistant (Dok Ching district)																																								
4. Agriculture Extension Assistant (Dok Ching district)																																								
5. Financial assistant																																								
6. Administrator																																								
7. VOF trainer/monitor																																								
Sub-total																																								
Total McNIRE Individual Consultants																																								
Consultancy Support to BCCP - AF																																								
Contract Version 3 - Feb 2016																																								
GC International Consultants																																								
1. Team Leader / Forestry/Seedlings/Condo expert																																								
2. Verification & Monitoring of REDD+ Package Specialist																																								
3. Land Use / GIS Specialist																																								
4. Unallocated International Expertise																																								
Sub-total																																								
GC National Consultants																																								
1. Forestry / REDD Specialist - Attapeu/Sekong																																								
2. Land Use / GIS Specialist																																								
3. REDD+ Training Specialist																																								
4. Gender Specialist																																								
5. Agro-forestry Coops - Forestry Systems Specialist (monitoring)																																								
6. Agro-forestry Livestock - Forestry Systems Specialist (monitoring)																																								
7. Short Term Consultants (unallocated) month																																								
Sub-total																																								
Total GC Consultants																																								
																																								Legend
																																								Interventive inputs
																																								Contractual inputs

VII. SAFEGUARDS

122. The primary focus of the Project is to maintain and restore forest ecosystems that provide critical ecosystem services benefiting local livelihoods and downstream users. This will be achieved largely through establishment of a landscape approach that allows for multiple use zones, reforestation of degraded areas, livelihoods improvements and small-scale income enhancing infrastructure as incentives for beneficiaries. Potential sample subprojects have been pre-screened to ensure conformity with project criteria which include strict adherence to safeguard regulations of the ADB and the Government of Lao, including environmental and social impact on the population in general and on vulnerable groups in particular. Criteria for selection of subprojects virtually eliminated subprojects with potential significant impact on environment, and resettlement and land compensation matters. Consideration was also given during the subproject selection process to ensure that women and vulnerable groups as well as indigenous peoples would derive significant benefits from the selected subprojects and that any potential negative impact could be mitigated.

A. Resettlement

123. The Project investments are geared towards institutionalization of provincial and local instruments that will rationalize and minimize land use conflicts by (i) reducing dependence on forests through generation of alternative livelihood opportunities; (ii) enhancing ecosystem service flows and benefits (e.g. water discharge, climate regulation, NTFPs); and (iii) harmonizing land use regimes and communities use rights over natural resources by strengthening access and tenurial rights. It promotes livelihood support interventions (i.e., access to secure land tenure, community forestry, plantations, local primary processing of wood and nonwood products, ecological farming and ecotourism). BCC aims at providing incentives, funding, and technical assistance enabling local people to grow trees of their choice in their homestead plantations and community forests for subsistence needs as well as for fuelwood consumption and construction. Small loan schemes for micro and small enterprises are to be encouraged for local (wood and nonwood) primary processing to emerge or existing ones to become vibrant. The establishment of management regimes in the corridors shall create jobs for local people.

124. Examples of livelihood improvement activities generated through village consultations are livestock production, agroforestry (that includes fruit trees in combination with cash crops) home gardens, reforestation, agri-plantations, rattan plantation establishment, mushroom production and the like. Rural infrastructure is limited to the rehabilitation of rural (farm-to-market) roads and community irrigation systems as well as the provision of water supply systems. These subprojects will not entail land acquisition as existing right-of-way will be observed. Subproject selection criteria have taken into account the primary concerns of the ADB-SPS and the engagement of stakeholders to consultation and participation for broad community support will be upheld. The existing BCC criteria have been extended to include AF project activities.

1. Anticipated Involuntary Resettlement

125. Social assessments were conducted in seven sample villages (Khammaknao, Phuokuea, and Sompoy in Attapeu; Ta Ong and Saming of Champasak; and Songkhone and Ta Ork Yai of Secong) during the BCC PPTA in June 2010, and in 2013 during the preparation of the AF. These assessments resulted in the identification of limited, temporary and reversible

project impacts that trigger involuntary resettlement under the Safeguards Policy Statement of ADB (2009), as follows:

- (i) **Temporary loss of assets/ disturbance.** Temporary loss of small areas of land due to rehabilitation/ construction works, in addition to loss of crops, trees and structures, may occur, although not expected to cause severe impacts since rehabilitation works will be carried out within existing right-of-way. Examples of disturbance may take the form of (a) removal of vegetation and disturbance to wildlife, (b) dust suspension due to construction works, and (c) depending on the final design, emissions of obnoxious gas and particulates from vehicles/heavy equipment and/or generator sets.
- (ii) **Social exclusion/elite capture.** Protocols in a number of ethnic minority communities require that project entry require prior approval of the village/ district chiefs and other such designated entities. This includes how benefits are distributed, which have to be coursed through these parties. While such protocols are imperative for project entry and ultimate acceptability the project has to take stock of dynamics that may limit flow of information and deter equitable benefit distribution especially with the vulnerable population.
- (iii) **Increased developmental dependency.** Village development grant arrangements as well as future local involvement in payment for environmental/ecosystems services may encourage ethnic minority dependency to donors and government institutions and may also result in complacency and/or containment of benefits to a chosen few as related to (ii) above (social exclusion/elite capture).

2. Rationale for a RF

126. Based on the social assessment, the Project is classified as category B as it includes involuntary resettlement impacts that are not deemed significant compared to category A¹⁰ inasmuch as the project design has built in mechanisms that already address impacts that are both positive and negative. Further, the Project buy-ins are at this stage subject to consultation and agreed upon decisions during Components 1 and 2 where land use planning is processed to determine feasible locations and designs for subprojects. The RF was updated to incorporate the AF.

B. Environmental Impact

127. 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.

128. 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. 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 geographical boundaries and according to the Project objectives. The Project has been designed to take environmental

¹⁰ Category A subprojects entail significant adverse social impacts if 200 or more persons will experience major impacts, which are defined as (i) being physical displaced from housing, or (ii) losing 10% or more of their productive assets (income generating).

considerations into account for subprojects as and when they are being formulated. A framework for environmental safeguarding of subprojects has been developed and will be applied.

129. 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 development funds. Identification and design of all of these activities will be finalized during Project implementation. 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 minimize 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 environmental safeguarding regulations of Lao PDR.

130. The Project is classified as an Environmental Safeguarding Category B project in accordance with the ADB Safeguard Policy and Environmental Assessment Guidelines¹¹. Significant environmental impacts warranting and Environmental Impact Assessment are unlikely.

C. Ethnic Groups Development

131. The term “Indigenous Peoples” is not used in Lao PDR. The official terminology for describing the diverse population of Lao PDR is “ethnic groups” as introduced in the 1991 Constitution. Articles 8 and 22 underscore nondiscrimination on the basis of ethnicity or gender, thus non-Lao people are covered under the usage of ethnic groups. During consultations with select villages in the provinces, ethnic minority farmers mentioned the following constraints: (i) lack of farm implements/inputs and technical assistance; (ii) issues on food security, health, and sanitation, (iii) Poor rural infrastructure like roads that link to markets, and water supply, (iv) unemployment; (v) need for schools and electrification, (vi) land issues that limit shifting cultivation.

132. The BCC covers 67 villages in three provinces of Lao PDR, with a total population of approximately 27,500 or 4,700 households of which about 35% are poor households and 53% affected ethnic groups. The AF covers 21 villages in Sekong and Attapeu provinces, majority of which are composed of the ethnic groups Brao and Yae. The Ta-Lieng can also be found in some FIP villages.

133. The Project investments are geared towards institutionalization of provincial and local instruments that will rationalize land use planning by (i) reducing dependence on forests through generation of alternative livelihood opportunities; (ii) enhancing ecosystem service flows and benefits (e.g. water discharge, climate regulation, NTFPs); and (iii) harmonizing land use regimes and communities use rights over natural resources by strengthening access and tenurial rights. It promotes livelihood support interventions (i.e., access to secure land tenure, community forestry, plantations, local primary processing of wood and nonwood products,

¹¹ ADB. 2009. *Safeguard Policy Statement*. Manila. ADB. 2003. *Environmental Assessment Guidelines*. Manila.

ecological farming and ecotourism). The Project aims at providing incentives, funding, and technical assistance enabling local people to grow trees of their choice in their homestead plantations and community forests for subsistence needs as well as for fuelwood consumption and construction. Small loan schemes for micro and small enterprises are to be encouraged for local (wood and nonwood) primary processing to emerge or existing ones to become vibrant. The establishment of management regimes in the corridors shall create jobs for local people. The Project will facilitate the provision of tenurial security to ethnic minorities.

134. There are limited, temporary and reversible project impacts as well as a number of adverse social impacts, largely due to external forces. Those that are project-based are:

- (i) **Temporary loss of assets/ disturbance.** Temporary loss of small areas of land due to rehabilitation/ construction works, in addition to loss of crops, trees and structures, may occur, although not expected to cause severe impacts since rehabilitation works will be carried out within existing right-of-way. Examples of disturbance may take the form of (a) removal of vegetation and disturbance to wildlife, (b) dust suspension due to construction works, and (c) depending on the final design, emissions of obnoxious gas and particulates from vehicles/heavy equipment and/or generator sets.
- (ii) **Social exclusion/elite capture.** Protocols in a number of ethnic minority communities require that project entry require prior approval of the village/ district chiefs and other such designated entities. This includes how benefits are distributed, which have to be coursed through these parties. While such protocols are imperative for project entry and ultimate acceptability the Project has to take stock of dynamics that may limit flow of information and deter equitable benefit distribution especially with the vulnerable population.
- (iii) **Increased developmental dependency.** Village development grant arrangements as well as future ethnic minorities involvement in payment for environmental/ecosystems services may encourage ethnic minority dependency to donors and government institutions and may also result in complacency and/or containment of benefits to a chosen few as related to (ii) above (social exclusion/elite capture).

135. Impacts brought about by external factors due to Project benefits are:

- (i) Encroachment due to improved access. With the rehabilitation of rural infrastructure, there is potential for increasing access to conservation sites especially along the borders by outsiders or those not belonging to the same ethnic minority group within a Project assisted area aggravating current resource use competition.
- (ii) Increase in value of land in Project sites. Investments introduced through the Project increases the likelihood of land speculation, which may increase selling of ethnic minority land rights to economic concessions/investors.

D. Social Impacts

136. Qualified and experienced experts will be contracted to conduct a full social impact assessment (SIA) in a gender-sensitive manner in consultation with ethnic minorities. The SIA will (i) establish the baseline socioeconomic profile of ethnic minorities in the Project area and the Project impact zone; (ii) assess access and opportunities to avail of basic social and economic services, (iii) determine the short- and long-term, direct and indirect, and positive and

negative impacts of the Project on each group's social, cultural, and economic status, (iv) assess and validate which ethnic minorities will trigger the SPS principles, and (v) assess subsequent approaches and resource requirements for addressing the various concerns and issues of projects that affect them. An EGDP in conjunction with the subproject feasibility study will be prepared if impacts on ethnic minorities are established.

137. Qualified and experienced experts will similarly prepare the EGDP through meaningful consultation with affected ethnic minorities to ensure that affected ethnic minorities will receive culturally appropriate social and economic benefits and that when potential adverse impacts on them are identified, these will be avoided to the maximum extent possible. When avoidance is deemed impossible, the EGDP will identify measures to minimize, mitigate, and compensate for adverse impacts. If ethnic minorities will be the majority of direct Project beneficiaries, and when only positive impacts are identified, elements of an EGDP may be included in the overall Project design in lieu of preparing a separate EGDP. The EGDP will establish requirements for meaningful consultation and how benefit sharing are fulfilled and integrated into the Project design.

138. An updated EGDF may be necessary to reflect mitigating measures to avoid adverse impacts on ethnic minorities as well as measures to enhance culturally appropriate development benefits following the completion of detailed engineering design and detailed measurement survey/reports. These may be adjusted, but agreed outcomes as specified in this EGDF will not be lowered or minimized. If new groups of ethnic minorities are identified prior to submission of the final EGDP to ADB, meaningful consultation will likewise be undertaken with them.

VIII. GENDER AND SOCIAL DIMENSIONS

139. Key issues related to the BCC project are found in the GAP of 2010 quoting the Lao Gender Profile (2005). A more recent gender assessment for Lao PDR is found in the ADB/World Bank's Country Gender Assessment for LAO PDR: Reducing Vulnerability and Increasing Opportunity (2012). The project area of Southern Lao PDR is typically dominated by indigenous people. Women in all indigenous peoples' (IP) villages are clearly seen as less powerful than men. Women's lower status within the community renders their voices less significant. Women have less access to decision making and to government resources for development. They also have limited time and mobility to attend meetings that determine women's needs and priorities. Village men have cultural norms which are probably also shared by women, where women feel "shy" to speak up in meetings especially when outsiders are present. As a result the views and priorities of women are likely to remain excluded from collective decision-making processes and this is especially true of poor and indigenous women. Indigenous women also very often do not speak Lao and although they participate in village meetings or meetings with government officers they often do not understand the discussion and are reluctant to ask Lao speaking men to explain to them. Some women especially the poorer women would understand some of what was presented in the meetings but would not know how to apply such knowledge in practice. Therefore, adequate targeting of women's groups amongst IP and identifying their characteristics in terms of assets and livelihood conditions is a precondition for the design and implementation of an effective targeting strategy for BCC and FIP interventions.

140. Gender balance in the Government field extension service is extremely limited to the point of being non-existent. There is a significant degree of "gender blindness" as there is low awareness and limited understanding of gender concepts and process for gender mainstreaming among its staff. Male government officials in general seem to place less importance on learning opportunities for women and on defining specific actions on how gender can be incorporated and how specific outcomes can be achieved. Therefore, project guidelines must stress on recommendations for inclusion of women to make sure women are kept informed and made aware of how to form separate women focus groups. During the Inception Period of AF, the entry points for mainstreaming women's issues into technical guidelines and technical work must be teased out. The Provincial Office of Natural Resources and Environment (PONRE) and District Office of Natural Resources and Environment (DONRE) will need some awareness and capacity development in this regard. Lao Women's Union (LWU) is one option if its staff is carefully informed of BCC and FIP objectives and if the same persons in LWU participate throughout the duration of the project.

141. There are also gender stereotypes in the ethnic villages that must be addressed. Gender stereotypes and cultural and social norms and values affect men and women differently during project implementation and male project implementation officers may not push hard as "it is easier to work with men". It is assumed that the project will have local staff working in collaboration with NGOs in implementing gender mainstreaming which could constitute a 'learning by doing' situation for government project implementation staff.

142. Socio-demographic characteristics in sample BCC project Sites by 2010 are found in Table 1. It shows the key facets of BCC seven sample villages, which indicate that the total affected ethnic group population in BCC sites is about 53% of the total population, the highest being in Sekong, followed by Attapeu and Champasak. In contrast in villages identified for AF activities, the percentage of ethnic groups is over 90%. As noted, the BCC villages are spread

out while the AF villages are clustered as they are selected based options for carbon emission reduction monitoring.

143. The AF will be implemented in 21 villages in the district of Dak Cheung in Sekong Province and Phouvong district of Attapeu province. The AF initiatives will focus on several village clusters of which some clusters contain predominantly of indigenous peoples. The AF interventions are spatially concentrated for ease of monitoring, recording and verifying (MRV) carbon emissions/reductions, while the BCC design has spread out its initiatives to 67 villages over a much larger area, including Champassak province.

144. Like the BCC project, the AF is a Safeguards Category B project. Both interventions require effective gender mainstreaming as they address objectives that are linked to villagers' land use and land rights and it is important to ensure women have a say in the implementation as land and forest make up the basis for livelihood and nutrition. Therefore the AF activities should include specific gender mainstreaming features in order to facilitate and ensure women's participation and access to project benefits. Gender mainstreaming requires that the opportunities for addressing women and gender issues are identified at the design stage of activities and that accepted by the implementing agency. Gender targets as well as performance and monitoring indicators for mainstreaming are found in the project DMF.

145. The implementation arrangements and estimated costs of the Gender Action Plan are incorporated in the overall arrangements and total budget of the Project as included in capacity building and participation to the consultation and participation processes across levels (national, province, district, communes and villages). Similarly, the menu of livelihood options and technical assistance extended (i.e., on climate change, REDD, early warning devices, etc) shall provide for support activities and instructional materials that are sensitive to the needs of women.

146. The NPMO and specifically the PPMO will implement the gender strategy. Representatives from the Women's Union, Ethnic Minorities, and the Lao Front specifically from the provincial level down to the villages will play important roles in facilitating the participation of women in Project activities.

147. A national social development/gender specialist will assist in the development of implementation guidelines for the gender strategy crafted for each commune/village. Gender-disaggregated indicators for project performance monitoring and evaluation will be identified with the implementing units. Protocols in coordination with other specialists as regards subproject implementation and feasibility studies preparation will be defined. Midterm review missions will be scheduled to identify and eventually document lessons learned and best practices and make adjustments as the need arises.

148. Despite the Project being a biodiversity and conservation project, opportunities abound and are built into the project design that ensure delivery of tangible benefits to women by improving their access to social services, and/or economic and financial resources and opportunities, and/or basic rural and urban infrastructure, and/or enhancing voices and rights, which contribute to gender equality and women's empowerment. It is thus deemed that the Project is categorized as an Effective Gender Mainstreaming Project.

Gender Actions by Output of the AF

Project Outputs	Gender Actions
<p>Output 1: Institutions and community strengthened for biodiversity conservation management and ready to implement REDD+</p>	<ul style="list-style-type: none"> • Ensure that enhancement of REDD+ policy framework is informed by sex-disaggregated data on the different uses of the forest by men and women and the different roles that men and women play in conservation. • Ensure balanced consultation with local women and men (50% participation by each) on decisions regarding zoning/restrictions of access to forest areas to avoid/mitigate restrictions which might adversely impact on women's livelihoods activities from forest use/ products. • Target of 50% women's participation in REDD+ awareness activities • Target 30% participation by women in training on REDD+ activities. • Ensure that all training and IEC materials in forest use, management and conservation integrate gender dimensions. • Awareness and training activities to be held at times and days convenient to women. • Ensure that progress is reported by type of activity and type/level of engagement by women and men.
<p>Output 2: Biodiversity corridors restored, ecosystem services protected, maintained and REDD+ ready</p>	<ul style="list-style-type: none"> • At least 2 out of the 5 national staff trained on carbon and water quality baseline assessment and monitoring techniques, are women. • Women will be at least 30% of participants (as household members and/or female headed households): <ul style="list-style-type: none"> (i) in planning meetings on forest demarcation/ zoning and training on community protection. (ii) in the preparation of the community forest development plans; (iii) in training and implementation/ restoration teams on replanting and maintenance techniques.
<p>Output 3: Livelihoods improved and small-scale infrastructure support provided in target villages</p>	<ul style="list-style-type: none"> • Women will be 40% of participants (as household members and/or female headed households): <ul style="list-style-type: none"> (i) in community contracts with user rights for sustainable alternative agro-forestry development and implementation. (ii) in training, implementation teams and in access to livelihood assistance on forest conservation and resource use, including tree planting, crop demonstrations, and livestock and crop management and productivity improvement activities. • Livelihood support/extension services will include specific services/ inputs/ training identified by women farmers on enhancing productivity, diversification of produce, livestock management, medicinal and non-timber product development, etc.
<p>Output 4: Project management and support services provided</p>	<ul style="list-style-type: none"> • Gender indicators related to AF project to be included in the project M&E framework. • The project will report sex disaggregated data on all activities and monitoring of benefits by type of activity and type/level of engagement. • All EA/IA national and provincial staff will be sensitized on gender issues in forest conservation and sustainable use, building on capacity development/training activities provided under the BCC. • In accordance with action agreed at MTR, a focal person for social safeguards will be appointed (could be from the Lao Women's Union at provincial or district level) to the NPMO and PPMOs to help mobilize and ensure effective coordination amongst various institutions involved in social safeguards.

ADB = Asian Development Bank, GAP = gender action plan, GIS = geographical information system, IEC = information, education and communication, LWU = Lao Women's Union, M&E = monitoring and evaluation, NTFP = non-timber forest product, O&M = operation and maintenance, REDD+ = reduced emissions from deforestation and forest degradation.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Revised Design and Monitoring Framework

Impact the Project is Aligned with			
<p>Current project Climate resilient sustainable forest ecosystems benefitting local livelihoods (Ministry of Natural Resources and Environment's Vision towards 2030).</p> <p>Overall project Unchanged.</p>			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p>Outcome^a</p> <p>Current project Sustainably managed biodiversity corridors in Lao PDR</p> <p>Overall project Sustainably managed biodiversity corridors in Lao PDR with communities ready to scale up REDD+ activities</p>	<p>Current project By 2018:</p> <p>a. Biodiversity Conservation Corridor (BCC) regulations approved in Attapeu, Champasak and Sekong</p> <p>b. Biodiversity Conservation Corridors mapped with priority conservation areas being protected and managed</p> <p>c. Village forest management improved with forest management committees operational in all 67 villages</p> <p>d. Each village forest management committee has 30% female members</p> <p>e. 3,900 ha of forest enhancement, including 800 ha of agroforestry established in the 67 participating communities contributing a 10% increase in hh income</p> <p>Overall project Current targets remain and additionally:</p> <p>f. By 2019, at least 10 communities ready to scale up REDD+ pilots</p>	<p>a. National databases MONRE and MAF</p> <p>b. MOU between Lao PDR & Viet Nam regarding management of Biodiversity Corridor zones in cross border areas</p> <p>c. Text of Biodiversity Corridor Decree or regulatory instrument</p> <p>d. Performance monitoring survey/reports</p> <p>e. Project management information system</p> <p>f. Carbon baseline monitoring</p>	<p>Other external DFIs negatively affect current and planned Project activities in the corridors</p>
<p>Outputs^a</p> <p>Output 1</p> <p>Current project Institutions and communities strengthened for biodiversity corridor management</p> <p>Overall project "Unchanged"</p>	<p>1a. Current project By 2018, 67 BCC villages with PLUP approved Overall project: Unchanged</p> <p>1b. Current project By 2018, 62 plots of village forest land and 2,300 household certificates awarded Overall project: "Unchanged"</p> <p>1c. Current project By 2018, 300 km of community forest lands delineated and demarcated in 67 BCC villages</p>	<p>1a. Corridor maps approved by Provincial Government and MAF/DOF</p> <p>1b. Carbon-sensitive PLUPs with maps for 90 villages</p> <p>1c. Village investment plans of 90 villages; demarcation maps</p> <p>1d. Land Use</p>	<p>Other developmental activities (commercial plantations, mining, settlements, roads, etc.) create further fragmentation of forest ecosystem and hamper landscape</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>Overall project: “Unchanged”</p> <p>1d. Current project By 2018, 3,000 trainees in land use planning, forest management, patrolling and livelihoods Overall project: “Unchanged”</p> <p>1e. Current project By 2018, among the trained persons at the national, provincial, district and village levels, at least 30% are female (overall target) Overall project: “Unchanged”</p> <p>Overall project (added)</p> <p>1f. By 2019, awareness and knowledge on REDD+ systems and opportunities improved in 21 villages within Attapeu and Sekong provinces with 50% being women beneficiaries</p> <p>1g. By 2019, an additional 50 provincial, 75 district, 800 village level persons trained in REDD+ activities with at least 30% of trainees being female and 30% of trainees being from ethnic groups</p>	<p>Certificates</p> <p>1e. Project progress reports</p> <p>1f. Performance monitoring survey/reports</p> <p>1g. NPMO reports; Project completion report</p>	<p>approaches</p>
<p>Output 2</p> <p>Current project Biodiversity corridors restored, ecosystem services protected, maintained</p> <p>Overall project “Unchanged”</p>	<p>2a. Current project By 2018, 67 BCC villages with a total of at least 67 patrol teams with at least 40 patrolling interceptions per district per year; and the number of violations reduced by 60% compared to 2015 baseline Overall project: “Unchanged”</p> <p>2b. Current project By 2018, spatial assessment of biodiversity in the BCC completed and used to identify priority protection and management zones by 2016 Overall project: “Unchanged”</p> <p>2c. Current project By 2018, 3,900 ha of forest lands planted and maintained using native species (the area of forest planting at the village level is based on the result of the PLUP) Overall project: “Unchanged”</p> <p>2d. Current project By 2018, forest restoration activities include at least 30% of women’s labor input participation on cash basis Overall project: “Unchanged”</p> <p>2e. Current project By 2018, three demonstration sites for connectivity for biodiversity established Overall project: “Unchanged”</p>	<p>2a. Land use certificates</p> <p>2b. Provincial and district economic survey statistics</p> <p>2c. Reports of DOFI and DONRE on illegal activities</p> <p>2d. Performance monitoring survey/reports</p> <p>2e. NPMO reports</p> <p>2f.-2g. ADB review mission and Project completion reports</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>Overall project (added) 2f. By 2019, an additional 50,000 ha of forest effectively patrolled 2g. By 2019, an additional 1,450 ha of natural forest land rehabilitated</p>		
<p>Output 3 Current project Livelihoods improved and small-scale infrastructure support provided in target villages Overall project “Unchanged”</p>	<p>3a. Current project By 2018, 67 BCC villages with Village Development Funds (VDF) established and onlending to livelihood groups for BCC beneficiaries Overall project: “Unchanged”</p> <p>3b. Current project By 2018, at least 30% of extension trainings for livelihoods in the 67 BCC villages will focus on home gardening, and among the beneficiary households from home gardening, at least one woman in each household participated in these trainings Overall project: “Unchanged”</p> <p>3c. Current project All VDFs reinvested at least 3 times with a default rate of less than 10% Overall project: “Unchanged”</p> <p>3d. Current project At least 40% of VDF beneficiaries (VDF production group members) are female Overall project: “Unchanged”</p> <p>3e. Current project At least 30% of VDF management board members are women Overall project: “Unchanged”</p> <p>3f. Current project Small-scale infrastructure improving the livelihoods of BCC villages based on the approved infrastructure plan Overall project: “Unchanged”</p> <p>3g. Current project At least 4 profitable value addition businesses linked to other project activities supported in each district Overall project: “Unchanged”</p> <p>Overall project (added) 3h. By 2019, at least 420 additional hh receive cash and technical support to improve productivity and income from livelihoods, with at least 40% of beneficiaries being female</p>	<p>3a. Provincial and district economic survey/reports</p> <p>3b. Provincial revenue reports</p> <p>3c. Provincial business and enterprise statistics</p> <p>3d. Performance monitoring survey/reports</p> <p>3e-3h. Project progress reports</p>	
<p>Output 4 Current project Project management and support services are operational</p>	<p>4a. Current project By March 2011, NPMO in DFRM and PPO in Attapeu, Champasak, and Sekong operational; at least 20% of project staff are female</p>	<p>4a. Government statistics</p> <p>4b. Provincial and district statistics</p> <p>4c. NPMO reports</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p>Overall project "Unchanged"</p>	<p>Overall project: "Unchanged"</p> <p>4b. Current project By March 2011, NPMO in DOF and PPO in Attapeu, Champasak and Sekong operational; at least 20% of project staff are female By June 2011, all advance actions regarding procurement of vehicles, equipment and consultants completed Overall project: "Unchanged"</p> <p>4c. Current project By August 2011, first tranche of grant received in imprest accounts Overall project: "Unchanged"</p> <p>4d. Current project By 2012, around 1,000 officials and project staff will be trained on procurement, management, financial controls, monitoring and report Overall project: "Unchanged"</p> <p>4e. Current project Timely half yearly (June/December) technical and financial reports produced in Lao and English by NPMO Overall project: "Unchanged"</p> <p>4f. Current project Project Performance and Monitoring System established by early 2012 Overall project: "Unchanged"</p> <p>4g. Current project Timely submission of financial liquidation and withdrawal applications Overall project: "Unchanged"</p> <p>4h. Current project By 2017, Operational Guidelines/manuals circulated on biodiversity corridors management and best Practices Overall project: "Unchanged"</p> <p>4i. Current project By 2017, at least 20 project staff will be trained on procurement, management, financial controls, monitoring and reporting^a Overall project: "Unchanged"</p> <p>Overall project (added)</p> <p>4j. By 2019, existing project management offices at national level and FIP related provinces and districts commence AF related activities</p> <p>4k. By 2019, at least 20% of additional financing staff are female</p> <p>4l. By 2019, district offices in Dakcheung and Phouvong constructed</p>	<p>4d. ADB review mission reports</p> <p>4e. Midterm evaluation</p> <p>4f. Performance monitoring survey/reports</p> <p>4g. Grant /loan disbursement reports</p> <p>4h-4l. Project progress reports</p>	

Key Activities with Milestones

1. Institutions and communities strengthened for biodiversity corridor management and ready to implement REDD+

- 1.1. Strengthen policy framework for biodiversity corridor establishment and implementation. (unchanged)
- 1.2. Raise awareness and build technical capacity to replicate model of biodiversity corridors. (unchanged)
- 1.3. Participate in GMS transboundary and subregional Biodiversity Corridor activities and establish cross-border cooperation framework on biodiversity corridor management. (unchanged)
- 1.4. Strengthen capacity on land use planning, zoning, demarcation across landscapes. (unchanged)
- 1.5. Strengthen the capacity of district officials and key provincial level staff in corridor and protected areas management. (unchanged)
- 1.6. Strengthen village level capacity for managing village development funds. (unchanged)
- 1.7. Strengthen the capacity of villagers to manage and protect forest and natural resources in the corridors and move toward effective community-based natural resource management. (with co-management of some parts of the PAs/protection forests) (unchanged)
- 1.8. Secure recognition of biodiversity corridors through provincial level policy and regulations/decisions/decrees and implement management plans. (unchanged)
- 1.9. Design and deliver REDD+ awareness and training courses. (added)
- 1.10. Strengthen policy framework for implementation of REDD+. (added)

2. Biodiversity corridors restored, ecosystem services protected, maintained and REDD+ ready

- 2.1. Undertake participatory demarcation and delineation of forest/conservation corridor areas from village areas. (unchanged)
- 2.2. Identify and undertake landscape connectivity in key fragmentation points through targeted reforestation/enrichment planting, gap filing or natural regeneration. (unchanged)
- 2.3. Identify bare/scrub land available close to villages/clusters for forest plantations, NTFP domestication and supply of timber for value addition. (unchanged)
- 2.4. Implement forest restoration interventions for enhanced carbon storage. (added)
- 2.5. Establish carbon baselines and monitor effectiveness of pilot interventions. (added)

3. Livelihoods improved and small-scale infrastructure support provided in target villages

- 3.1. Update village/commune level data on socio-economic status and poverty mapping/monitoring. (unchanged)
- 3.2. Provide support to promoting agriculture/agroforestry based livelihood improvements. (unchanged)
- 3.3. Explore possibilities of improving market information services using mobile IT technology and private sector services in the clusters / villages or through local associations. (unchanged)
- 3.4. Provide seed capital for Village Development Funds. (unchanged)
- 3.5. Provide investment support to prioritized small scale infrastructure. (unchanged)
- 3.6. Implement agroforestry, livestock and charcoal production pilot interventions to support sustainable alternative livelihoods. (added)

4. Project management and support services provided

- 4.1. Establish National and Provincial Project Management Offices. (completed)
- 4.2. Establish financial accounts and internal audit controls. (completed)
- 4.3. Open project accounts, secure monthly statements. (completed)
- 4.4. Recruit support staff and consultants. (unchanged)
- 4.5. Draw up annual and six monthly workplans, personnel scheduling, budgets and procurement plans and seek approvals. (unchanged)
- 4.6. Procure goods and services applying procurement rules as laid out in PAM. (unchanged)
- 4.7. Guide and oversee implementation. (unchanged)
- 4.8. Conduct survey/reports and studies to enhance and support project implementation (unchanged)
- 4.9. Monitor project implementation. (unchanged)
- 4.10. Prepare Statement of Expenditure and liquidation documents Submit six monthly financial and technical reports. (unchanged)
- 4.11. Strengthen project management through additional technical support to implement new interventions (technical and administrative). (added)
- 4.12. Provide additional vehicles and equipment for project implementation support. (added)
- 4.13. Construct and furnish 2 district offices. (added)

Inputs	
ADB: Grant	
\$20,000,000 (current)	
\$0 (additional)	
\$20,000,000 (overall)	
Strategic Climate Fund: Grant	
\$0 (current)	
\$12,840,000 (additional)	
\$12,840,000 (overall)	
Government	Beneficiaries
\$270,000 (current)	\$180,000 (current)
\$60,000 (additional)	\$0 (additional)
\$330,000 (overall)	\$180,000 (overall)
Assumptions for Partner Financing	
Not applicable	

ADB = Asian Development Bank, BCC = Biodiversity Conservation Corridor, DFI = development finance institution, DFRM = Department of Forest Resource Management, DOFI = Department of Forest Inspection, DONRE = District Office of Natural Resources and Environment, FIP-AF = Forest Investment Program-Additional Financing, GMS = Greater Mekong Subregion, GOL = Government of Lao PDR, hh = household, MAF = Ministry of Agriculture and Forestry, MONRE = Ministry of Natural Resources and Environment, MOU = memorandum of understanding, NPMO = National Project Management Office, O&M = operation and maintenance, PES = payment for ecosystem PLUP = participatory land use plan, PPO = Provincial Project Office, REDD+ = reduced emissions from deforestation and forest degradation, VDF = village development fund, WREA = Water Resources and Environment Administration.

^a Impact, outcome and output indicators were updated during the mid-term review mission on 3-10 November 2014 and approved by Director/SEER on 19 January 2015.

Source: Asian Development Bank.

B. Monitoring

1. Implementation Monitoring

149. The MTR agreed to introduce an implementation monitoring framework for forest planting, and livelihoods investment. The planting program will be monitored within 2 months of planting activities to ascertain, (i) areas, (ii) quality of planting, (iii) number of seedling planted. Each planting block will need to be identified in the overall forest planting plan along with geo-references, these geo-references will be used for the site inspection within 2 months. The site assessment report will trigger the release of disbursement for labor costs. Each site will also be inspected at 8 to 9 months post planting to (i) review survival rates, (ii) review maintenance works, and (iii) define any remedial actions. The inspection report will trigger disbursement of labor costs. The assessment and inspection visits will be undertaken by the Provincial and District forestry personnel with support from the GIC forest expert in each province. The reports will be submitted to the PPMO and electronically copied to NPMO at the same time. The Project Manager NPMO and GIC team leader will review each and based on their approval/ratification the fund disbursement will be released. Each year a random sample of amounting to 20% of plots will be selected by the NPMO and the BCC monitoring contractors will conduct independent evaluation of the inspection and assessments. Significant deviation in findings will lead to suspension of the activities and the reallocation of funds to other Provinces.

2. Project Performance Monitoring

150. A PBME system will be developed and implemented by the NPMO with assistance from the GICs. The PBME will collect information at subproject level to identify the current socio-economic conditions of target beneficiaries and to assess the impact of the subprojects. The

PBME will be based on measurable inputs, outputs and outcomes to be collected during baseline surveys and throughout project implementation.

151. The Project will also provide support for undertaking monitoring and evaluation during the life of the Project and also a project completion impact and evaluation assessment. At MTR additional BCC funds are allocated for implementing a forest planting, patrolling supervision, inspection and audit program in addition to regular M&E inputs.

152. Under the AF program a detailed monitoring of carbon stocks and emissions will be undertaken through a third party service provider who will also produce documentation to support a carbon financing application should it prove viable.

3. Compliance Monitoring

153. The Government and MAF have agreed with ADB on certain covenants for the proposed Project, which are set forth in the grant and project agreements including the following:

- (i) Only subprojects that have been pre-screened either during preparation or by an approved specialist and subsequently approved by ADB shall be financed by ADB grant funds;
- (ii) The Government will ensure that adequate funds are allocated for the periodic maintenance of infrastructure developed under the Project through provincial budgets to maintain the infrastructure in functional order; and
- (iii) The Government will also ensure that a grievance mechanism is established for affected people in the participating districts.

154. ADB will monitor compliance with those covenants throughout project effectiveness and implementation via regular review missions, quarterly progress reports submitted by the NPMO, and review of project accounts and procurement procedures.

4. Safeguards Monitoring

155. The Project will support the recruitment of Safeguard Monitoring entities from domestic universities and institutes, to ensure that all recommendations and mitigation measures under the EMPs, the IPPs, and the RPs, of each subproject are being implemented in accordance to the plans.

5. Gender and Social Dimensions Monitoring

156. All data, in accordance with Prime Minister's Decree No.140/PM dated 20 August 2002 and guideline paper No. 018/PMO of 10 January 2005, will be disaggregated by sex and age, urban and rural women, and women of ethnic groups. Routine monitoring by the safeguard monitoring entities to be recruited under the Project will focus on assessing progress and compliance with GAPs, identifying constraints and developing remedial actions to effectively address these. Monitoring results will be part of the six monthly progress reports and assessment / evaluations of the GAP will be an essential element of all reviews.

C. Evaluation

157. ADB will conduct regular (at least twice per year) reviews throughout project implementation to assess implementation performance and achievement of project outcomes

and objectives, examine financial progress, and identify issues and constraints affecting the Project and work out time-bound action plans for their resolution.

158. A Midterm Review was undertaken in November 2014. The review included a comprehensive evaluation of project implementation arrangements, detailed evaluation of the scope and implementation process and progress of subprojects, feedback from the PBME, performance of consultants, capacity building progress, and possible reallocation of loan proceeds. During this more significant review, the impact from the pro-poor initiatives linked to infrastructure development will be assessed as will the allocation by local administrations for the maintenance of the infrastructure developed under the Project. Remedial action will be instituted as required.

159. Within 6 months of physical completion of the Project, ADB will conduct a project completion mission to carry out a preliminary assessment of the success of the Project to achieve its physical, and socio-economic developmental objectives, as well as to review compliance with ADB requirements and loan covenants.

160. AF funding is provided to capture lessons from all pilot case studies through the contracting of a comprehensive evaluation study to an independent service provider. The evaluation will report actual achievements of each subproject against the expected inputs, outputs and outcomes. The conclusions along with the findings of the regular carbon monitoring will be used to prepare a AF completion report that will be a stand alone document and a technical appendix for the BCC completion report.

D. Reporting

161. The NPMO will provide ADB with:

- (i) quarterly progress reports in a format consistent with ADB's project performance reporting system;
- (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months;
- (iii) mid-term report for AF activities in January 2018;
- (iv) a project completion report within 6 months of physical completion of the Project.

162. To ensure projects continue to be both viable and sustainable, project accounts and the executing agency AFSs, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

1. Consultation

163. Project preparation has been conducted with stakeholder agencies in the Government of Lao PDR at national, provincial and district levels including MAF, Ministries of Planning and Investment, Public Works and Transport, Water Resources and Environment Administration, and the National Land Management Authority. Consultations have also been held with the mass organizations, the LWU and the Lao National Front which has responsibility for ethnic minority affairs. Specific business scan meetings have been held in the participating provinces with the

private sector involved with commercial agriculture to determine their constraints and capacity. A limited number of meetings have been conducted with village-based organizations focusing on irrigation/water management arrangements and issues. Requirements for ensuring appropriate levels of consultation for subproject proposal preparation have been developed.

164. Initial subproject proposal preparation includes consultation requirements involving documented evidence of inclusive consultation with all communities in the subproject catchment area and participant information on numbers of women and men by ethnic grouping. Subproject socio-economic/ gender surveys that identify vulnerable groups to provide basis for specific consultation and participation mechanisms will be followed during implementation.

165. During the Project, the process of consultation will continue throughout the feasibility study and detailed design phase of each subproject to afford community groups the opportunity to voice their views on how the subproject is to be designed, implemented and operated. In addition, associated initiatives will be built into the design of each subproject to enhance the impact from and sustainability of investments in rural infrastructure. These associated initiatives will be identified in a participatory manner from a menu of options developed with the respective stakeholders and beneficiaries and will strengthen community-based organizations such as the WUGs, the women's unions, village mediation units, producers and marketing groups, and input supply groups.

2. Participation

166. It is anticipated that the community will be mobilized in a number of different ways during subproject design, implementation and operation. During subproject design and preparation stages community participation will consist primarily of their contribution through the consultation process.

167. During the construction phase, significant opportunities for active participation, particularly for poor household to benefit from the subproject through provision of wage labor to the contractors. This will be encouraged through the bidding documents which will request the contractors to investigate this option, whenever possible.

168. The community will also be required to participate in the O&M of the completed infrastructure whenever possible through provision of labor or in some cases funds.

3. Awareness

169. Experience has demonstrated the importance of community participation in achieving sustainable development including appropriate and well-designed projects. To ensure adequate participation of the community, it must first be well-informed and there must be adequate opportunities for everyone to participate if they wish.

170. Information about the Project and the subprojects in particular, including the objectives, potential environmental impact, implementation arrangements, resettlement and compensation matters, gender issues, issues of concerns for ethnic minorities will be provided to beneficiaries. Information will be provided through village meetings, pamphlets, and other announcements in both Lao language and the language(s) of the communities whenever appropriate. The community will be fully informed of issues such as their right to participate in this subproject and to be compensated for any loss of property including productive land and / or assets as well as gender equity and other relevant policies. Separate meetings and discussions will be arranged

with the people who are directly affected by land acquisition and/or resettlement issues. The community and particularly the affected households will be provided with detailed guidance and procedures regarding resettlement and compensation.

X. ANTICORRUPTION POLICY

171. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with MONRE and DOP. Consistent with its commitment to good governance, accountability, and transparency ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project. All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Project.

172. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the loan regulations and the bidding documents for the Project. In particular, all contracts financed by ADB in connection with the Project shall include provisions specifying the right of ADB to audit and examine the records and accounts of MONRE, NPMO, PPO, and DCO, as well as all contractors, suppliers, consultants, and other service providers as they relate to the Project. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Project. The project design and implementation arrangements provide for mitigation of corruption risks. Risks associated with project management, including procurement and disbursement, will be mitigated by the engagement of GICs to advise and assist in the procurement of goods and services, and the engagement of other consultants. The Project will also establish a website in which it will disclose implementation progress; bid notifications and their results; and provide grievance mechanism against any corrupt practice. References on ADB's Anticorruption Policy can be accessed through the following link: <http://www.adb.org/Integrity/>.

XI. ACCOUNTABILITY MECHANISM

173. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.¹²

XII. RECORD OF PAM CHANGES

174. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

Date of Change	Change
December 2014	<p>Based on MTR and AF Feasibility Study</p> <ul style="list-style-type: none"> - Revised Implementation arrangements and updated EA and IAs - Revised budget, updated procurement and forecasts - Clarification of IA responsibility - Revised flow of funds - Inclusion of AF additional financing - Updated allocation and withdrawal table for ADF and AF grants

¹² For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

APPENDIX 1: PROJECT READINESS FILTERS

As of Fact-finding Stage (September 2010)

	Key Project Preparation Elements	Stage of Project Preparation			Within 1 month of effectiveness
		Identification/preparation/fact-finding	Negotiations	Effectiveness Condition	
1.	Project is within GOL's highest development priority (Seventh National Socio-Economic Development Plan)	Confirmed			
2.	Project Administration Manual (PAM)	Draft prepared and will be revised by 5 October 2010	Completed and agreed		
3.	Environment Impact Assessment, Social Impact Assessment, Land Acquisition & Resettlement Plan and Indigenous People Action Plan (where applicable)	Project is classified as B for Environment, Resettlement and Indigenous People. Framework for Environment, Resettlement, and Indigenous People prepared.	Action Plans initiated and GOL budgets proposed		Action plans ongoing
4.	Procurement Capacity Assessment	Completed	Start up actions initiated		Start up actions implemented
5.	Procurement Plan for first 18 months	Completed and included in the PAM	Confirmed		
6.	Financial Management Capacity Assessment	Completed	Start up actions initiated		Start up actions implemented
7.	Auditing arrangements including TOR	Agreed	Confirmed		
8.	Monitoring and evaluation requirements	M&E arrangements agreed, baseline data have been collected for sample activities	Confirmed		Baseline data within 9 months if not possible to collect before
9.	Project Implementation Arrangements	Implementation arrangements and proposed staffing structure included in the PAM	Key staffing (including procurement and NPMO/PPO staff) approved.		Full Project Implementation Team in place
10.	TOR and RFPs for consultants for critical consultant packages required during first year of implementation	TOR for grant implementation consultants to be included in the revised PAM	TOR approved and recruitment process initiated		Contract ready for signing
11.	First year bidding documents for goods and works (where design and specification can be prepared through earlier project or project preparation facility)	Draft English language version of the bidding documents shall be submitted for ADB review and approval regardless of the estimated contract amount. ADB-approved procurement documents	TOR agreed for consultant to prepare bidding documents		Bidding documents ready 2 months after negotiation

	Key Project Preparation Elements	Stage of Project Preparation			Within 1 month of effectiveness
		Identification/preparation/fact-finding	Negotiations	Effectiveness Condition	
		shall be used as a model for all subsequent NCB procurement financed by ADB.			
12.	GOL counterpart funds (if required)	Discussed	First year funds confirmed available		
13.	Subsidiary agreements (where applicable)	N/A	Principle content of agreements agreed (ADB)		
14.				Legal Opinion	

Project Readiness Filter – Additional Financing
As of August 2015

Key Project Preparation Elements	Stage of Project Preparation				Status as of August 2015
	Identification/preparation	Appraisal/Fact-Finding/post Fact-Finding	Negotiations	Effectiveness	
STANDARD PRFs					
Identification of Project Director and EA/IA project management and implementation teams to be responsible for project implementation	EA staff assigned to lead project preparation	Definition of their project related ToR, and back-up arrangements to ensure continuity	Full Project Management and Implementation Teams assigned	Launch workshop done within 3 months: the launch workshop should focus in particular on the training of staff on the detailed implementation arrangements (program manuals)	Existing project management teams under original project
Risk Management plans / Good Governance Framework	Broad content defined	Drafted	Completed and agreed. A project staff has been assigned as focal point		Drafted
Financial Management Capacity Assessment of EAs/IAs		Completed	Start up actions initiated	Start up actions implemented, including FM training within 2 months	Completed

Key Project Preparation Elements	Stage of Project Preparation				Status as of August 2015
	Identification/preparation	Appraisal/Fact-Finding/post Fact-Finding	Negotiations	Effectiveness	
Procurement Capacity Assessment (PCA) of EAs and IAs		Procurement capacity assessed and reviewed by Procurement Departments	Start up actions initiated	Start up actions implemented	Completed
Annual implementation plan and budget		Drafted	Completed and agreed.	Plan and budget obtained no objection by DP	Drafted
Program/project manuals		Drafted	Completed and agreed.	Manuals obtained no objection by DPs	Drafted
Auditing arrangements including TOR		Agreed	Confirmed		Agreed
Environment Impact Assessment (EIA), Social Impact Assessment and Indigenous People Action Plan and Indigenous Peoples Development Framework (where applicable)	Requirements defined	Agreed	Action plans initiated	Action plans ongoing.	Environmental Assessment and Review Framework and Indigenous Peoples Development Framework agreed
Budget & funding from DP and GoL for the 1st year of project implementation		Needs defined	Confirmed	Available	Needs defined.
ADDITIONAL PRFs					
Advance Actions (AA) for 1st year Bidding Documents (BDs) for goods and works		List of items, timetable and responsibilities for implementation of AA	BD No objection obtained by the DP and issued.	Ready for signing (notably for goods)	Advance action items identified
Implementation of Resettlement Framework		Uploading a draft Resettlement			RF uploaded

Key Project Preparation Elements	Stage of Project Preparation				Status as of August 2015
	Identification/preparation	Appraisal/Fact-Finding/post Fact-Finding	Negotiations	Effectiveness	
		Framework endorsed by borrower			
Identification of staff at provincial, district and commune levels		Work plans agreed with field staff	EA/IA confirm staff availability and that ToRs have been discussed and agreed with field staff		Additional staff for the Additional Financing identified. Recruitment to be initiated under advanced action
M&E arrangements and baselines		AF builds on M&E arrangements and baselines established for OF. Additional M&E requirements identified; TOR prepared	Confirmed	M&E arrangements and baseline for AF will be established within 3 months	M&E arrangements agreed and baseline data collected for OF. M&E for AF identified for advanced action.

APPENDIX 2: CONSULTANT'S TERMS OF REFERENCE

I. Background

1. Consultants to be financed from ADB resources include the grant implementation consultants (GICs); national consultants to assist in the preparation and supervision of subproject works; and entities to monitor the implementation of social and environmental safeguard measures. All consultants and institutes will be selected and engaged in accordance with the ADB's Guidelines on the Use of Consultants. The NPMO recruited the GICs from a consulting firm following QCBS (80:20) procedures. National consultants for preparation of feasibility studies, detailed design, preparation of bidding documents and supervision of construction, as well as the safeguard monitoring entities will be recruited by the NPMO following CQS procedures. The outputs and deliverables from all consulting services shall be in accordance with the Government policies, and in support of the provincial development strategies and the needs of the beneficiaries.

2. To assist in the implementation of the Project, the NPMO engaged a qualified international consulting firm (including national consultants) to provide consulting services in a range of specialties including: (i) Forestry / Biodiversity, (ii) GIS/ Land use planning, (iii) social safeguards, gender/ community, (iv) business development/agroprocessing/NTFP, (v) accounting and other unidentified areas. The original GICs comprised a total of 360.5 person-months including 33.8 person-months of international specialists and 326.8 person-months of national specialists. The contract with the GICs was agreed by the NPMO and the GICs were mobilized in June 2012. The estimated cost of consulting services contract was US\$2.6 million.

3. Advance action was initiated to ensure that the team was fielded shortly after grant effectiveness to provide continuous support and advice to the NPMO and the PPMOs throughout the Project, with a greater concentration in the first 4 years of implementation. Approximately 80% of the person-months were planned to be utilized by 2015. After this initial intensive support, the NPMO and PPOs is expected to have built the necessary capacity to carry out all duties independently and with minimum support.

4. The AF will require an extension of the GICs team by a total of 91 person-months, comprising of 24 person-months (p-m) of international specialists and 67 person-months of national specialists. These additional inputs by the GICs will be procured through a contract variation. The detailed terms of reference (TOR) for the GICs are incorporated in the TORs below. In addition the AF will provide 643 person-months of government contracted positions.

II. Grant Implementation Consultants Terms of Reference

1. Forestry/ Biodiversity: Team Leader (International, 27 p-m, plus 16 p-m for AF)

5. The International Team Leader (Forestry and Biodiversity Specialist) will in close co-operation with the National Project Director and the ADB Project Officer:

- (i) Assume overall responsibility for implementing the technical support, including preparation and implementation of work plans, and provide team leadership, coordination, financial management and administrative input, and ensure timely deployment of consultants and guidance on following ADB requirements on Statement of Expenditure (SOE) guidelines;

- (ii) Ensure that all consultants are fully briefed on local situation and their tasks. Review, and modify when necessary all consultant terms of reference in consultation with the National Director and the ADB Project Officer and oversee international and national consultants and provincial level teams in planning, preparation and completion of the subprojects (commune investment plans – CIPs) and follow up on forest resource management plans in all provinces;
- (iii) Develop a comprehensive capacity development plan and oversee its implementation;
- (iv) Monitor progress against project implementation schedule and collate and coordinate preparation and submission of periodic progress reports and technical reports on project findings and experience;
- (v) Support Forest Development Plans for the provinces that identify areas where forest restoration should be prioritized to improve connectivity between different management units and provide guidance on demarcation and delineation of the provincial forest estate;
- (vi) Assess any existing technical guidelines for the design of management plans for Protected and Commune/Community Forests and refine as appropriate and advise on the collection and analysis of all data relevant to forest management, including operational costs, prices, labor productivity, wage rates, and recommend improvements to working practices to reduce costs and improve labor health and safety;
- (vii) Advise on the design of forest and biodiversity inventories and assessments of natural forest management units, including sampling procedures, determination of sampling intensity, data recording and analysis and the establishment of a network of permanent and temporary sample plots in the major forest types;
- (viii) Oversee the development of a program for growth and yield monitoring both for key indigenous tree species and for the major mixed species natural forest types that includes assessment of the net sequestration of carbon stocks, and provide guidelines for techniques for assessing timber and carbon growing stock and yield estimation suitable for application by local communities in the project communes/villages;
- (ix) Advise on the preparation of detailed management plans for territorial forest management units that do not yet have comprehensive plans, covering silvicultural and harvesting operations, and including an investment plan that includes access and roads, staff development, and identification of any potential for public use of the forest for recreation and tourism. The plans should be sensitive to environmental and landscape considerations;
- (x) Prepare guidelines for environmental protection and biodiversity conservation and for the defining areas within Protected forest areas that require special protection due to their importance as unique habitats, feeding sources (e.g. salt licks and water) nesting sites etc. to ensure that the protection value is maximized and ensure their incorporation into management plans and advise provincial staff on conservation, reforestation, ecosystem restoration and review current management plans and proposed ecotourism plans;
- (xi) Advise on the principles to be adopted for practical Commune Forest Management Plans for inventory, monitoring, silvicultural treatments and the development of a simple harvesting plan that ensures long-term sustainability of the resource and safeguards locally important species such as resin trees and trees of spiritual importance;
- (xii) Oversee the work of the national plantations and nursery consultants, preparing technical guidelines for site and species selection for community restoration of

- denuded and degraded former forest areas, reviewing current site preparation, establishment, silvicultural and nursery practices and vet recommendations on the most effective disposition of nurseries within the Project area to ensure timely supply of best possible quality of planting stock of indigenous tree species and NTFPs for restoration, enrichment planting and livelihood plantations;
- (xiii) Support the Business Development activities for potential new livelihood enterprises or developments of existing enterprises that should be supported by the Project;
 - (xiv) Make recommendations for market based instruments to capture some of the environmental values from protected lands and forest areas; and
 - (xv) Promote the monitoring of prices for major forest products including timber, NTFPs, Carbon/CO₂ and energy to assess the competitiveness of wood for energy and the feasibility of carbon sequestration through forest management and plantations.

In addition and specifically for the AF components:

- (xvi) Ensure that all consultants are fully briefed on local situation and their tasks. Review, and modify when necessary all consultant terms of reference in consultation with the National Director and the ADB Project Officer and oversee international and national consultants and provincial level teams in planning, preparation and completion of the AF activities;
- (xvii) Assist the REDD Training Specialist to develop a comprehensive capacity development plan and oversee its implementation;
- (xviii) Support the provinces to identify areas where forest restoration should be prioritized to improve carbon sequestration and connectivity between different management units and provide guidance on demarcation and delineation of the provincial forest estate;
- (xix) Monitor the service providers appointed to undertake activities in agro-forestry, carbon MVR and biocarbon development to ensure their compliance in meeting the objectives and quality expected for the respective modules;
- (xx) Assist the NPMO to review policies for payment for ecosystem services (PES) and potential for establishment under BCCP.

2. National Deputy Team Leader (80.8 p-m, Forestry and Biodiversity Specialist)

6. The candidate will in close co-operation with the International Team Leader, National Project Director and the ADB Project Officer assist the Team Leader with:

- (i) Technical support, including preparation and implementation of work plans, coordination, financial management and administrative input, and ensure timely deployment of national consultants;
- (ii) Briefing to consultants and project visitors on local situation and tasks. Support national consultants and provincial level teams in planning, preparation and completion of the subprojects (commune investment plans – CIPs) and follow up on forest resource management plans in all provinces;
- (iii) Develop a comprehensive capacity development plan and oversee its implementation;

- (iv) Monitor progress against project implementation schedule and collate and coordinate preparation and submission of periodic progress reports and technical reports on project findings and experience;
- (v) Support Forest Development Plans for the provinces that identify areas where forest restoration should be prioritized to improve connectivity between different management units and provide guidance on demarcation and delineation of the provincial forest estate;
- (vi) Assess any existing technical guidelines for the design of management plans for Protected and Commune/Community Forests and refine as appropriate and advise on the collection and analysis of all data relevant to forest management, including operational costs, prices, labor productivity, wage rates, and recommend improvements to working practices to reduce costs and improve labor health and safety;
- (vii) Design of forest and biodiversity inventories and assessments of natural forest management units, including sampling procedures, determination of sampling intensity, data recording and analysis and the establishment of a network of permanent and temporary sample plots in the major forest types;
- (viii) Oversee the development of a program for growth and yield monitoring both for key indigenous tree species and for the major mixed species natural forest types that includes assessment of the net sequestration of carbon stocks, and provide guidelines for techniques for assessing timber and carbon growing stock and yield estimation suitable for application by local communities in the project communes/villages;
- (ix) Preparation of detailed management plans for territorial forest management units that do not yet have comprehensive plans, covering silvicultural and harvesting operations, and including an investment plan that includes access and roads, staff development, and identification of any potential for public use of the forest for recreation and tourism. The plans should be sensitive to environmental and landscape considerations;
- (x) Prepare guidelines for environmental protection and biodiversity conservation and for the defining areas within Protected forest areas that require special protection due to their importance as unique habitats, feeding sources (e.g. salt licks and water) nesting sites etc. to ensure that the protection value is maximized and ensure their incorporation into management plans and advise provincial staff on conservation, reforestation, ecosystem restoration and review current management plans and proposed ecotourism plans;
- (xi) Commune/Community Forest Management Plans for inventory, monitoring, silvicultural treatments and the development of a simple harvesting plan that ensures long-term sustainability of the resource and safeguards locally important species such as resin trees and trees of spiritual importance;
- (xii) Oversee the work of the national plantations and nursery consultants, preparing technical guidelines for site and species selection for community restoration of denuded and degraded former forest areas, reviewing current site preparation, establishment, silvicultural and nursery practices and vet recommendations on the most effective disposition of nurseries within the Project area to ensure timely supply of best possible quality of planting stock of indigenous tree species and NTFPs for restoration, enrichment planting and livelihood plantations;
- (xiii) Support the Business Development activities for potential new livelihood enterprises or developments of existing enterprises that should be supported by the Project; and

- (xiv) Be delegated team leader duties in periods when the international team leader is demobilized.

3. Social Safeguards – Gender, Indigenous Peoples/Ethnic Minorities, and Resettlement Specialists (International, 3 p-m – completed)

7. The consultant will review the Project related documentation, including the Feasibility Study and consultants' reports produced during project preparation, to better understand the sociocultural and economic context of the Project. The consultant will be responsible for assessment of the sociocultural dimensions (to include ethnic minorities, resettlement, gender and development, and stakeholder participation and consultation). Specifically, the international social safeguards consultant will:

- (i) Oversee the technical preparation of a socio-economic database at the beneficiary and commune/commune level in a participatory manner that will serve as the benchmark information for the input, output, and outcome monitoring and evaluation indicators for assessing poverty, social, and gender impacts of Project components and for the Project as a whole. Information to be collected through a combination of primary and secondary data gathering as well as quantitative and qualitative approaches; will include but will not be limited to, demographic information of the poor disaggregated by gender and minority/social groupings, poverty in Project sites, relationship of human populations and environment/ natural resources, non-economic features of poverty, and institutional bottlenecks to poverty reduction;
- (ii) Using the data gathered, prepare socio-economic and poverty profiles of the prospective stakeholders and beneficiaries to be impacted by the component and/ or subproject, using both quantitative and qualitative and participatory techniques;
- (iii) Prepare methodological procedures and targets and through National Social Safeguards/Gender Specialists, oversee the conduct of social impact assessment and other required survey/census requirements in the Project sites as guided by the Project Social Safeguards frameworks (EMDF and RF) and the GAP;
- (iv) Formulate recommendations to bring about greater accountability and transparency in the development process in order to qualify broad community support for the Project sites;
- (v) In consultation with relevant members of the team, carry out an analysis of policy adjustments related to social dimensions such as (but not limited to): land tenure, vulnerability of human settlements and rural livelihoods to climate impacts, micro credit, and institutions for inclusion into a policy dialogue with the government;
- (vi) Prepare appropriate recommendations that enable profitability of conservation and protection for upstream communities, who are most often ethnic minorities, and measures to ensure that such environmental service costs actually reach the communities in the manner and forms they require and benefit them;
- (vii) Based on the social assessment and where ethnic minorities are concerned, recommend culturally appropriate strategies and options to mitigate impacts as a result of new schemes to be introduced and which will potentially change livelihoods and/or demand for socio economic services;
- (viii) Oversee and assess preparation of EMDPs and RPs in accordance with ADB Policies and Guidelines, EMDF, and RF;

- (ix) In consultation with relevant members of the team, propose options for capacity building of various local community groups/organizations that may be involved with implementation of the Project, identifying the means and institutions for such capacity building measures. This can include community-based public education and outreach activities related to climate risk reduction and adaptive water management practices;
- (x) Prepare framework and oversee implementation of Project capacity building/IEC and in particular, that these are in line with results of the SIA and objectives of Social Safeguards documents, as well as the GAP; and
- (xi) Assist the central project implementation unit in any other tasks relevant to the expertise of the Consultant including preparing various reports and other documents required by ADB and concerned government institutions.

4. Environment Safeguards Specialist (International, 1 p-m – completed)

8. The International Environmental Safeguarding Specialist (IESS) will be engaged at the start of Project implementation. The IESS will develop a number of critical tools that will be used during Project implementation to ensure its compliance with the environmental safeguarding requirements of ADB and Government. Concurrently with the International Environmental Safeguarding Specialist, a National Environmental Safeguarding Specialist - Infrastructure (NESS-I) will be engaged for one person-month to provide support with the development of the environmental safeguarding guidelines and to facilitate consultations. The IESS will have secondary qualifications and/or experience in forestry.

9. Specifically, the IESS, in collaboration with the NESS-I, the National Environmental Safeguarding Specialist (NESS), other Project staff, implementing partners and stakeholders, will undertake:

- (i) Update the EARF as required;
- (ii) Develop detailed environmental safeguarding guidelines for project implementation and the identification and design of subprojects tailored to the different implementing partners. Particular focus will be given to the technical aspects of the forestry activities, activities located inside protected areas, and small-scale infrastructure subprojects (the latter with specific inputs from the NESS-I);
- (iii) Develop screening checklists for subprojects and guidance material on their use;
- (iv) Develop an appropriate monitoring schedule in function of the subprojects identified;
- (v) Train the NESS in applying the EARF and familiarize the NESS with ADB environmental safeguarding procedures and requirements, including reporting.

5. Land-use Planner and GIS Specialist (International, 2.8 p-m – completed; plus 1.0 p-m for AF)

10. The consultant will work with the international Team Leader and in cooperation with the other team members. The Land use / GIS Specialist (international) will establish the BCI spatial decision support system, and performs spatial analysis and modelling task to support site design, establishment, and monitoring & evaluation of project achievements and impacts.

11. Specifically, the Land use planner's / GIS specialist's work will include, but is not limited to:

- (i) Establish working relationships with national government and non-governmental organizations producing and/or administering spatial datasets relevant to the successful establishment and monitoring of Biodiversity Corridor sites;
- (ii) Supervise the national GIS consultants to collect, process and integrate spatial and statistical data into site-specific, consolidated GIS databases;
- (iii) Perform data needs and quality assessments (geographic datasets, statistical datasets), identify gaps and quality issues, and propose options to fill gaps or improve deficient datasets;
- (iv) Set up a satellite image archive for each site, process the images, and conduct forest cover classifications and change detection analyses that provide project management (districts, provinces and center) with information on a) site integrity (state) and b) land conversion trajectories (trend);
- (v) Supervise the national GIS consultants in conducting field survey/reports to refine/ verify accuracy of satellite image interpretation;
- (vi) Develop aggregated vulnerability and land conversion threat maps to support project in geographically prioritizing individual site interventions (short to medium term responses);
- (vii) Develop land demand scenarios from past trends and future development strategies and directives, and translate them into a future land conversion model to support programming of appropriate long term responses;
- (viii) Perform GIS skills assessments and design corresponding GIS conceptual and technical trainings (on-the-job training) for relevant local and national level focal points;
- (ix) Produce 2D and 3D geo-visual materials from the GIS baseline database and the GIS analysis/ modelling (usable in the context of land use mapping and landscape planning);
- (x) Develop GIS based land use and landscape presentations and other knowledge products (e.g. fact sheets, posters) to strengthen communication and progress reporting.

In addition and specifically for the AF components:

- (xi) Undertake a review of the PLUP process as used to date within BCCP and from the lessons learned revise as necessary the process for efficiently completing PLUPs by the Land Management Units (LMUs) of the provinces in the additional AF villages
- (xii) Assisted by the National Land Use / GIS Specialist conduct a refresher training for the provincial and district staff assigned for preparing the PLUPs.
- (xiii) Support the National Land Use / GIS Specialist to monitor the preparation of the PLUPS by the LMUs to ensure quality is maintained in the data collection, analyses, evaluations and presentations
- (xiv) Assist the National Land Use / GIS Specialist to develop improved presentation of land-use mapping, land cover and landscape data and analyses for use by the LMUs, GIC, NPMO, provinces and districts, and
- (xv) Undertake other tasks related to monitoring and quality assurance of the PLUP process, implementation and reporting as required

6. National Land Use/GIS Consultant (30 p-m – completed; plus 10 pm for AF)

12. The consultant will work with the international Land use / GIS Specialist. The national GIS consultant will maintain the land use / GIS databases, prepare information for spatial analyses and modeling applications, and delivers RS/GIS training courses in the local language. Specifically, the national land use / GIS Consultant will:

- (i) Review national land use planning frameworks and identify relevant plug in points (institutional, planning tools, etc.) for Biodiversity Corridor interventions;
- (ii) Identify and document national GIS data sources and discuss / coordinate with national focal points on how to secure copies of relevant datasets;
- (iii) Collect GIS datasets required for the development of baseline (thematic) maps and configuration of spatial analyses (e.g. threat maps) and modeling tools (e.g. future land conversion);
- (iv) Review spatial and thematic quality of collected datasets and suggest processing steps (or alternative better data sources) to improve overall accuracy;
- (v) Process GIS datasets (conversion, translation, cleanup, documentation) and integrate them into one common BCI GIS database (one for each BCI site);
- (vi) Conduct (GPS-based) field survey/reports as required to refine / verify accuracy of satellite image interpretations and GIS datasets;
- (vii) Facilitate the collection of expert knowledge (legal documents, reports, research papers, expert interviews and questionnaires) and consolidate the findings into a knowledge database that supports the development / configuration of suitability and vulnerability/ threat maps and land allocation models;
- (viii) Develop and translate RS/GIS training materials and conduct trainings for national BCC focal authorities;
- (ix) Produce 2D and 3D geo-visual materials as advised by the GIS Specialist;
- (x) Support the GIS Specialist in other tasks that might be required;
- (xi) Assist and provide training to district and provincial staff on how to prepare village landuse plans;
- (xii) Oversee the preparation of village land use plans for all BCC and AF villages.

7. Forestry Expert – Attepeu (National, 78 p-m)

13. The consultant will work in close co-operation with the GIC Team Leader, and Deputy Team Leader assist the Provincial project management teams with:

- (i) Provide project management support, including preparation and implementation of work plans, coordination, financial management and administrative input;
- (ii) Monitor progress against project implementation schedule and collate and coordinate preparation and submission of periodic progress reports and technical reports;
- (iii) Support the planning, preparation and completion of the sub-projects (including village investment plans and forest restoration plans);
- (iv) Assist in preparing forest development plans for the provinces that identify areas where forest restoration should be prioritized to improve connectivity between different management units and provide guidance on demarcation and delineation of the provincial forest estate;
- (v) Assess and revise as necessary any existing technical guidelines for the design of management plans for protected and conservation forests. Advise on the collection and analysis of all data relevant to forest management, including

- operational costs, prices, labor productivity, wage rates, and recommend improvements to working practices to reduce costs and improve labor health and safety;
- (vi) Prepare technical guidelines for site and species selection for community restoration of forest areas, reviewing current site preparation, establishment, silvicultural and nursery practices. Develop recommendations on the most effective establishment of nurseries within the project area to ensure timely supply of best possible quality of planting stock of indigenous tree species and NTFPs for restoration, enrichment planting and livelihood plantations;
 - (vii) Design forest inventories and assessments of natural forest management units, including sampling procedures, determination of sampling intensity, data recording and analysis and the establishment of a network of permanent and temporary sample plots in the major forest types;
 - (viii) Oversee the development of a program for growth and yield monitoring both for key indigenous tree species and for the major mixed species natural forest types that includes assessment of the net sequestration of carbon stocks. Provide guidelines for techniques for assessing timber and carbon growing stock and yield estimation suitable for application by local communities in the project communes/villages;
 - (ix) Prepare detailed management plans for territorial forest management units that do not yet have comprehensive plans, covering silvicultural and harvesting operations. The plans should be sensitive to environmental and landscape considerations;
 - (x) Prepare guidelines for environmental protection and biodiversity conservation and for the defining areas within protected forest areas that require special protection due to their importance as unique habitats, feeding sources (e.g. salt licks and water) nesting sites etc. to ensure that the protection value is maximized;
 - (xi) Oversee the work of the national forestry and agricultural extension consultants; and
 - (xii) Assist in capacity building, particularly for forestry.

8. Forestry Specialist - Champasak (National, 25.7 p-m – completed)

14. The consultant will in close co-operation with the GIC Team Leader, and Deputy Team Leader assist the Champasak project management team to:

- (i) plan and implement the restoration/enhancement of about 1,300 ha of high-value conservation forests in Patoumphone district, Champasak province; (this is a performance target for output 2 of the project);
- (ii) assist project villages to establish and operate about 10 forest seedling nurseries where required; (this is a performance target for output 2 of the project);
- (iii) monitor community forest patrols based in 21 project villages; (this is a performance target for output 2 of the project);
- (iv) assist the PPMO and district government officials to complete land use plans for forestry and agriculture for each of 21 project villages; (this is a performance target for output 1 of the project);
- (v) assist the PPMO, the district, and 21 project villages to prepare village development plans with a focus on identifying new livelihoods, supported by associated small infrastructure; (this is a performance target for output 3 of the project);

- (vi) support the implementation of new livelihoods in 21 project villages (this is a performance target for output 3 of the project); and
- (vii) the national specialist may occasionally assist GIC consultants and PPMOs in other project provinces (Sekong and Attepeu) to achieve similar project objectives.

15. The scope of work includes:

- (i) Assist in preparing land use plans for forestry and agriculture zones for 21 project villages in Champasak province;
- (ii) Assist the PPMO and district to prepare forest development plans that identify areas where forest restoration should be prioritized to improve ecological connectivity between different conservation forest management units. Provide guidance on delineation and demarcation of high value conservation forests in the Champasak biodiversity conservation corridor;
- (iii) Assess and revise as necessary technical guidelines for the design of management plans for protection and conservation forests. Advise on the collection and analysis of all data relevant to conservation forest management, including operational costs, prices, labour productivity, and wage rates. Recommend improvements to working practices in forest management to reduce costs and improve labour health and safety;
- (iv) Prepare technical guidelines for site and species selection for community restoration of forest areas, reviewing current site preparation, establishment, silvicultural and seedling nursery practices. Develop recommendations on the most effective establishment of seedling nurseries within the project area to ensure timely supply of best possible quality of planting stock of indigenous tree species and NTFPs for restoration, enrichment planting and livelihood plantations;
- (v) Monitor, review, and train forest patrol teams based in 21 project villages in Champasak province;
- (vi) Support the planning, preparation and completion of village development plans, with a focus to enhance or develop new livelihoods;
- (vii) Assess village community forests for the potential to provide both timber and non-timber products;
- (viii) Provide the PPMO with project management support, including preparation and implementation of a provincial work plan that will achieve project outputs and budgets;
- (ix) Monitor progress against the provincial project work plan, and collate and coordinate preparation and submission of periodic progress reports and technical reports;
- (x) Direct and supervise a technician in forestry and a technician in agriculture extension;
- (xi) Assist other GICs as assigned, including those working in other project provinces of Sekong and Attepeu; and
- (xii) Other project duties as may be assigned.

9. Forestry Specialist – Sekong and Champasak¹ (National, 46.3 p-m)

16. The consultant will in close co-operation with the GIC Team Leader, and Deputy Team Leader assist the Sekong and Champasak project management teams to:

- (i) plan and implement the restoration/enhancement of about 1300 ha of high-value conservation forests in Sekong and Champasak provinces; (this is a performance target for output 2 of the project);
- (ii) assist project villages to establish and operate about 10 forest seedling nurseries where required; (this is a performance target for output 2 of the project);
- (iii) monitor community forest patrols based in 46 project villages; (this is a performance target for output 2 of the project);
- (iv) assist the PPMO and district government officials to complete land use plans for forestry and agriculture for each of 46 project villages; (this is a performance target for output 1 of the project);
- (v) assist the PPMO, the district, and 46 project villages to prepare village development plans with a focus on identifying new livelihoods, supported by associated small infrastructure; (this is a performance target for output 3 of the project); and
- (vi) support the implementation of new livelihoods in 46 project villages (this is a performance target for output 3 of the project).

17. The national specialist may occasionally assist GIC and PPMOs in other project provinces (Attapeu) to achieve similar project objectives. The scope of work includes:

- (i) Assist in preparing land use plans for forestry and agriculture zones for 46 project villages in Sekong and Champasak province;
- (ii) Assist the PPMO and district to prepare forest development plans that identify areas where forest restoration should be prioritized to improve ecological connectivity between different conservation forest management units. Provide guidance on delineation and demarcation of high value conservation forests in the Sekong biodiversity conservation corridor;
- (iii) Assess and revise as necessary technical guidelines for the design of management plans for protection and conservation forests. Advise on the collection and analysis of all data relevant to conservation forest management, including operational costs, prices, labour productivity, and wage rates. Recommend improvements to working practices in forest management to reduce costs and improve labour health and safety;
- (iv) Prepare technical guidelines for site and species selection for community restoration of forest areas, reviewing current site preparation, establishment, silviculture and seedling nursery practices. Develop recommendations on the most effective establishment of seedling nurseries within the project area to ensure timely supply of best possible quality of planting stock of indigenous tree species and NTFPs for restoration, enrichment planting and livelihood plantations;
- (v) Monitor, review, and train forest patrol teams based in 46 project villages in Sekong and Champasak provinces;
- (vi) Support the planning, preparation and completion of village development plans, in 25 project villages, with a focus to enhance or develop new livelihoods;

¹ Includes field supervision of Champasak from Oct 2015 onwards – 21 villages

- (vii) Assess village community forests for the potential to provide both timber and non-timber products;
- (viii) Provide the PPMO with project management support, including preparation and implementation of a provincial work plan that will achieve project outputs and budgets;
- (ix) Monitor progress against the provincial project work plan, and collate and coordinate preparation and submission of periodic progress reports and technical reports;
- (x) Direct and supervise a technician in forestry and a technician in agriculture extension;
- (xi) Assist other GIC consultants as assigned, including those working in other project provinces of Champasak and Attapeu; and
- (xii) Other project duties as may be assigned.

10. Village Forest Management Planning/ Patrolling Specialist (4pm national under BCCP)

18. The Consultant in close cooperation with the GIC Team Leader and DYL, assist develop capacity of provincial and district government officials to:

- (i) Prepare Village Forest Management Plans for community-managed forests within the the BCCP villages based on zones as defined in the Lao Government Decree of Protected Areas, no: 134/G, issued 13 May 2015
- (ii) Establish and monitor effective patrolling activities as per the Village Forest Management Plans

The scope of work includes:

- (i) Preparing for and undertaking awareness training of provincial and district government officials in community forest management and protection activities. Includes clarification of roles and responsibilities of the parties and of appropriate responses to offenders by the different levels.
- (ii) Assisting provincial and district staff assigned to BCCP prepare model Village Forest Management Plans (VFMP) for community-managed forests based on the zones as defined in the Decree of Protected Areas. Involves working with assigned staff and the villagers in 1 or 2 villages in each district to develop a model approach and example documents. It is envisaged that the VFMP will consist of (1) a map showing the zones based on the Participatory Land Use Plan and land cover as at Jan 2015 (available in each village), and (2) a list of management rules for each zone determined / agreed by the community.
- (iii) Assist the provincial and district staff assigned to BCCP to prepare the model process and agreements in the setting-up and monitoring of effective patrolling activities based on the VFMPs. Involves working with assigned staff and the Village Forest Unit in 1 to 2 villages per district with training and system development for the BCCP "priority villages" which have been selected based on highest biodiversity protection requirements.

- (iv) Organize training for provincial and district staff in patrolling data processing, analysis and reporting. Where specialist software is involved, appropriate trainers will be engaged to assist. GPS monitoring (SMART) is proposed for the priority villages.

11. Forestry and REDD Specialist (18 pm National under AF)

19. The National Specialist (Forestry and REDD) will in close cooperation with the GIC Team Leader and Deputy Team Leader assist the provincial and district staff with:

- (i) Technical support including preparation and implementation of work plans, coordination, and administrative input for the community and large-scale afforestation activities to be undertaken in AF villages
- (ii) Assist in capacity building of provincial, district and communities in forest restoration, forest protection (delineation and patrolling), REDD awareness and activity implementation
- (iii) Support preparation of PLUPs and Community Forest Management Plans by contributing towards development of regulations and recommendations for the sustainable management of forests under community management
- (iv) Support communities with forest delineation and the establishment and operation of patrolling in support of REDD objectives
- (v) Monitor afforestation and progress in meeting REDD objectives against implementation schedules, undertake evaluation of activities (survival rates, etc) and reporting
- (vi) Assist GIC Deputy Team Leader with updating BCCP community forestry management guidelines to include REDD objectives
- (vii) Assist GIC Deputy Team Leader and assigned provincial and district staff in monitoring agro-forestry (crop and livestock-forestry modules) undertaken by service providers

12. Gender Specialist (National, 12 p-m under AF)

20. The consultant will in close co-operation with the GIC Team Leader, and Deputy Team Leader assist the Sekong project management team to:

- (i) Ensure gender concerns are incorporated in the EGDF/RF as applicable;
- (ii) Oversee the implementation of the Gender Action Plan as well as all other necessary census/survey/reports for commune-proposed subprojects using the GAP as a reference.
- (iii) Support localized consultation and participation of Stakeholder to orient them on the project and seek agreement on gender sensitive interventions;
- (iv) In partnership with the communications/community development specialist, ensure that IEC protocols and procedures are appropriate for specific beneficiary groups, produced and/or implemented in culturally acceptable and gender sensitive manner;
- (v) Ensure appropriate gender sensitive selection criteria for assisting organizations/professionals contracted to conduct project activities and other

- required census/survey/reports, whenever applicable, and capacitate selected assisting organizations/professionals;
- (vi) Ensure that the necessary gender sensitive actions are generated in a consultative and participatory manner and that these actions incorporate effective participatory approaches, ensuring inclusion of vulnerable stakeholders/beneficiaries to project benefits flows;
 - (vii) Ensure that redress mechanisms are in place prior to subproject implementation and that disclosure procedures as stipulated in the social safeguards framework and pertinent ADB Communications Policy are observed;
 - (viii) Oversee Internal and External Monitoring for all social safeguards and validate findings;
 - (ix) Whenever unanticipated impacts on project beneficiaries become apparent during project implementation, ensure that a SIA will be conducted in order to update the GAP shall be formulated to reflect updates;
 - (x) In consultation with relevant members of the team, propose options for capacity building of various local community groups/organizations that may be involved with implementation of the Project, identifying the means and institutions for such capacity building measures. This can include community-based public education and outreach activities related to climate risk reduction and commune development fund management

13. REDD Training Specialist – Sekong and Attapeu (National, 12 p-m under AF)

21. The consultant will, in close co-operation with the GIC Team Leader, and Deputy Team Leader develop a REDD training and awareness raising programme for Provincial and District staff and village and community personnel and supervise its implementation:

- (i) Carry out a Training Needs Assessment at Provincial, District and Community level to ascertain the current awareness of, and state of knowledge on REDD+, climate change and the role of forests in both contributing to, and mitigating emissions of carbon dioxide and the importance of carbon dioxide in driving climate changes;
- (ii) Based on the findings, develop curricula for relevant training and awareness raising for each of the three target groups to cover both the general concept of REDD+ and its international status and the activities that contribute to deforestation and forest degradation and mitigation measures that can be adopted;
- (iii) Develop REDD+ courses for Provincial (6 courses) and District staff (12 courses) and at the community and village level (112 courses) within the districts of Dakcheung and Phouvong and specifically seek to support both female and ethnic groups.
- (iv) Organise an annual forum on REDD+ for consolidating experience, in each participating district introducing new innovations and developments from within the REDD+ community.
- (v) Assist the Procurement specialists (directly recruited by MoNRE) in preparing bidding documents for service providers to implement the various courses.
- (vi) Supervise the selected service provider during implementation of the courses and organise course evaluations to ensure that the material provided is at the right level for the participants and is being fully understood.

- (vii) Based on the results of evaluation of initial courses, if necessary revise the course curricula to ensure improved participation and understanding by participants.
- (viii) Based also on the course evaluation results, advise the training service provider on possible ways for improving the materials and presentation methods used for the courses.
- (ix) Assist the NPMO in ensuring quality of the training services provided

14. Agro-forestry/ Crop-Forestry Specialist (5 pm National Under AF)

22. The National Specialist (Agro-forestry / Crop-Forestry) will in close co-operation with the GIC Team Leader, GIC national staff and assigned national, provincial and district government staff assist the GIC TL with:

- (i) Technical review of the proposed approach, implementation methodologies, targets and outputs of the agro-forestry (crop with forestry) activities to be implemented by a service provider under a separate contract to the NPMO under the AF
- (ii) Assisting the assigned provincial and district staff to monitor implementation of the agro-forestry activities (crop with forestry) of the service provider to ensure activities comply with accepted technical standards, and agreed implementation methodologies in meeting the objectives of the AF component under BCCP.
- (iii) Ensuring a comprehensive capacity development plan for the agro-forestry activities (crop with forestry) is prepared by the service provider and training of the provincial, district and communities is undertaken in accordance with the plan
- (iv) Reviewing the progress and impact reports submitted to NPMO (cc GIC) by the service provider and provide advice to GIC TL and NPMO on any aspect where action is required to be taken to adjust the agro-forestry activities
- (v) Assisting the REDD Training Specialist to incorporate the necessary capacity development activities for agro-forestry in the comprehensive capacity development plan to be prepared for the AF component under BCCP
- (vi) Assist the NPMO in ensuring quality of the agro-forestry and crop services provided

15. Agro-forestry/ Livestock – Forestry Systems Specialist (National, 5 p-m under AF)

23. The National Specialist (Livestock-Forestry systems) will in close co-operation with the GIC Team Leader, GIC national staff and assigned national, provincial and district government staff assist the GIC TL with:

- (i) Technical review of the proposed approach, implementation methodologies, targets and outputs of the agro-forestry (livestock with forestry) activities to be implemented by a service provider under a separate contract to the NPMO under the AF.
- (ii) Assisting the assigned provincial and district staff to monitor implementation of the agro-forestry (livestock with forestry) activities of the service provider to

- ensure activities comply with accepted technical standards, and agreed implementation methodologies in meeting the objectives of the AF component under BCCP.
- (iii) Ensuring a comprehensive capacity development plan for the agro-forestry activities (livestock with forestry) is prepared by the service provider and training of the provincial, district and communities is undertaken in accordance with the plan.
 - (iv) Reviewing the progress and impact reports submitted to NPMO (cc GIC) by the service provider and provide advice to GIC TL and NPMO on any aspect where action is required to be taken to adjust the agro-forestry activities.
 - (vii) Assisting the REDD Training Specialist to incorporate the necessary capacity development activities for agro-forestry (livestock with forestry) in the comprehensive capacity development plan to be prepared for the AF component under BCCP.
 - (viii) Assist the NPMO in ensuring quality of the agro-forestry and livestock services provided.

16. Verification & Monitoring of REDD+ Package (International, 2 p-m under AF)

24. The International Specialist (REDD+) will in close cooperation with the GIC Team Leader, GIC Deputy Team Leader, National Project Director and the ADB project Officer will:

- (i) Review the status of REDD+ experience and activity in Lao PDR in discussion with REDD offices established within MoNRE and MAF and update the framework and ToR for the Carbon Measurement, Monitoring and Trading Document Contract to be undertaken by a service provider in pilot AF villages, accordingly.
- (ii) Assist in preparation of contract packages and bid documents for the Carbon Measurement Monitoring and Trading Document Contract.
- (iii) Assist in the selection process, in particular to review qualifications and experience of short-listed candidates and provide inputs, as required.
- (iv) Assist in drafting the consultant contract as needed.
- (v) Undertake other tasks related to monitoring and quality assurance of the Carbon Measurement, Monitoring and Trading Document Contract as required.
- (vi) Assist the GIC TL and NPMO to review policies for payment for ecosystem services (PES) and potential for establishment under BCCP.
- (vii) Undertake a mid-term review and quality assessment of the activities and progress of the Carbon Measurement, Monitoring and Trading Document Contract to ensure compliance with TOR and recommend changes as necessary to facilitate improved implementation and outputs.
- (viii) Undertake a final assessment and evaluation of the Carbon Measurement, Monitoring and Trading Document Contract activities, results and outputs and assist GIC TL to report and make recommendations for on-going or additional works to capitalize on and extend the outcomes

17. Unallocated International Specialists (International, 5 p-m under AF)

25. The activities for which these inputs will be allocated will be determined from the needs of the Project identified during the course of implementation and agreed in discussion between the GIC TL, National Project Director and ADB Project Officer.

18. National Unallocated Person-Months (7 p-m with additional 5 p-m under AF)

26. A provision is made for 7 PM of unallocated national expertise under BCCP and additional provision of 5 PM unallocated national expertise under AF, to be deployed as and when needed subject to approval of the EA. The unallocated PM shall be used to intensify project and/or field activities by either deploying additional personnel or to extend already nominated national experts, to reach the project objectives within the required timeframe.

III. Terms of Reference - Consultants Direct Contracted to MONRE

1. Project Manager (National, 48 p-m and an additional 12 p-m under AF)

27. The Project Manager should be experienced in implementing large, complex projects funded by international organizations including ADB or the World Bank, preferably projects in the agriculture, forestry, or natural resources areas. In addition to project management skills and experience, the Project Manager ideally will have knowledge and experience of forestry and community development in Lao, including both livelihoods and small infrastructure.

28. The Project Manager will lead the BCC project's national project management office (NPMO) and direct the three provincial BCC project management offices (PPMOs) in Attepeu, Sekong, and Champasak provinces, in conjunction with the provincial BCC project coordinators. The Project Manager will have support from a large Grant Implementation Consultants (GIC) team, consisting of Lao and international consultants.

29. The scope of work includes accountability for the preparation of annual work plans and budgets, communicating clearly to the NPMO and the three PPMOs the activities to be completed by those units, assisting the provincial BCC project coordinators to ensure their teams complete project activities, regularly monitor NPMO and PPMO progress on activities, and prepare reports for DFRM and ADB. The Project Manager will report on a regular basis to the DFRM Deputy Director General and BCC National Project Coordinator. The Project Manager will work with the GIC team leader to coordinate the work of GIC consultants on the BCC project.

30. The Project Manager will report to the DFRM BCC national project coordinator. Specifically, he/she will:

- (i) Represent the DFRM Director General and Deputy Director General (who is also BCC national project coordinator) in BCC project management, when required.
- (ii) As delegated by the DFRM Director General and Deputy Director General, lead the implementation of the BCC Project, with assistance from NPMO and PPMO staff, and consultants
- (iii) Lead the process of preparation of annual activity plans and budgets with NPMO and PPMOs according to agreed schedules and seek approval of these plans from DFRM and ADB.

- (iv) Monitor progress against the provincial and commune project work plans, and collate and coordinate the preparation and submission of periodic progress reports against those work plans.
- (v) Obtain prompt approvals for work activities in provinces by NPMO and PPMO staff.
- (vi) Organise consultation meetings with NPMO, PPMOs, and GIC team as necessary.
- (vii) Complete timely preparation of reports to DFRM/MoNRE, and ADB, as required.
- (viii) Ensure the timely preparation of procurement processes and contracts with suppliers and community contracts with villages to provide labour for various project activities.
- (ix) Supervise NPMO project staff, consultants and contractors.
- (x) Work with GIC team leader to plan GIC consultant work.
- (xi) Represent the BCC project at regional meetings of other Mekong region BCC projects.
- (xii) Represent BCC project at various meetings of Lao government ministries, as required.
- (xiii) Complete other project duties as assigned.

31. The Project Manager should have the following qualifications:

- (i) Bachelor degree in forestry, rural development, or other subject relevant to the project. Master's degree preferred. Training in aspects of project management a plus.
- (ii) Strong management and leadership skills.
- (iii) At least 5 years of experience in managing large projects. Experience in managing ADB, World Bank or UN projects is preferred.
- (iv) Knowledge and experience in working with ADB project implementation guidelines is a plus. Willingness to learn ADB project implementation is mandatory.
- (v) Experience in working in rural areas, in a context of agriculture and forestry. Experience working in the three southern Lao provinces preferred.
- (vi) Previous experience on projects similar to BCC.
- (vii) Proficient in English and relevant office software and internet application
- (viii) Good understanding of the institutional arrangements in Lao PDR. Extensive work experience in the government is an asset.

2. Provincial Project Manager(s) for Sekong and Attapeu (National, 42 p-m for each province under AF)

32. The Provincial Project Manager(s) should be experienced in implementing large, complex projects funded by international organizations including ADB the World Bank or UN, preferably projects in the agriculture, forestry, or natural resources areas. In addition to project management skills and experience, the Project Manager ideally will have knowledge and experience of forestry and community development in Lao, including both livelihoods and small infrastructures.

33. The Provincial Project Manager will lead the BCC project's provincial project management office (PPMO) and direct the districts BCC project management offices (DPMOs) in Phouvong, Sanamxay, Dugchung, Kalum and Pathoumphone districts, in conjunction with the provincial BCC provincial project coordinators. The Project Manager will have support from a large Grant Implementation Consultants (GIC) team, consisting of Lao and international consultants.

34. The Provincial Project Manager(s), under the direction of the PoNRE, Director and BCC Provincial Project Coordinator, will lead government staff, consultants and contractors who work on the project in the PPMO and DPMOs to successfully complete BCC project implementation. The Project Manager(s) will work full-time on the BCC project from the date of appointment until project completion in March 2019.

35. The scope of work includes accountability for the preparation of annual work plans and budgets, communicating clearly to the PPMO and the three DPMOs the activities to be completed by those units, assisting the provincial BCC project coordinators to ensure their teams complete project activities, regularly monitor NPMO and PPMO progress on activities, and prepare reports for PONRE and DFRM. The Project Manager(s) will report on a regular basis to the National Project Coordinator and Provincial Project Coordinator. The Project Manager will work with the GIC team leader to coordinate the work of GIC consultants on the BCC project.

36. The Provincial Project Manager will report to the PONRE BCC provincial project coordinator. Specifically, he/she will:

- (i) Represent the PONRE director and BCC provincial project coordinator in BCC project management, when required.
- (ii) As delegated by the PONRE director and BCC provincial project coordinator, lead the implementation of the BCC Project, with assistance from PPMO and DPMO staff, and consultants
- (iii) Lead the process of preparation of annual activity plans and budgets with PPMO and DPMOs according to agreed schedules and seek approval of these plans from DFRM and PONRE.
- (iv) Monitor progress against the provincial and commune project work plans, and collate and coordinate the preparation and submission of periodic progress reports against those work plans.
- (v) Obtain prompt approvals for work activities in provinces by PPMO and DPMO staff.
- (vi) Organise consultation meetings with PPMO, DPMOs, and GIC team as necessary.
- (vii) Complete timely preparation of reports to DFRM/PONRE, and ADB, as required.
- (viii) Ensure the timely preparation of procurement processes and contracts with suppliers and community contracts with villages to provide labour for various project activities.
- (ix) Supervise PPMO project staff, consultants and contractors.
- (x) Work with GIC team leader to plan GIC consultant work.
- (xi) Represent BCC project at various meetings of Lao government ministries, as required.
- (xii) Complete other project duties as assigned.

37. The Provincial Project Manager should have the following qualifications:

- (i) Bachelor degree in forestry, rural development, or other subject relevant to the project. Training in aspects of project management a plus.
- (ii) Strong management and leadership skills.
- (iii) At least 5 years of experience in managing large projects. Experience in managing ADB, World Bank or UN projects is preferred.
- (iv) Knowledge and experience in working with ADB project implementation guidelines is a plus. Willingness to learn ADB project implementation is mandatory.

- (v) Experience in working in rural areas, in a context of agriculture and forestry. Experience working in the three southern Lao provinces preferred.
- (vi) Previous experience on projects similar to BCC.
- (vii) Proficient in English and relevant office software and internet application
- (viii) Good understanding of the institutional arrangements in Lao PDR. Extensive work experience in the government is an asset.

3. Agriculture Extension Assistant (National, 240 p-m one in each of the 5 districts) and Forestry / Nursery Assistant (National, 240 p-m one in each of the five districts)

38. The consultants will work in close co-operation with the National Project Coordinator and the Provincial Project Coordinators and relevant technical expertise in the three Project provinces. The consultants will:

- (i) Undertake a review of current nursery practices used for production seedlings of locally indigenous species in the Districts within the Corridor and assess the quality of the seedlings produced;
- (ii) Assist the provincial and district foresters and potential local entrepreneurs in the target Communes/Villages, without nurseries to identify suitable sites, taking account of the location where the seedlings will be planted, to establish new small nurseries for production of good quality indigenous species;
- (iii) Advise the province and district foresters and entrepreneurs with the establishment of the nurseries, including selection and procurement of equipment (water pumps, hand tools etc.) and materials (seed, fertilizer, polybags, compost etc.) and training of staff and labor;
- (iv) Advise the provincial and district forestry staff on the selection of appropriate locally indigenous species and identification of suitable seed sources;
- (v) If appropriate, advise on the identification and management of seed stands for collection of high quality seed of a range of locally indigenous species;
- (vi) Prepare guidelines for identification of priority sites for forest restoration at commune/village level, taking account of the need to improve connectivity and improve biodiversity and soil and water conservation;
- (vii) Conduct training sessions for communities and their forestry supervisors in site selection and plantation establishment and maintenance;
- (viii) Review local practice for site preparation, establishment and silvicultural practices and recommend operational prescriptions for all indigenous species;
- (ix) Provide the provinces with prescriptions for reviewing and improving existing nursery manuals;
- (x) Prepare guidelines for nursery operations and prescriptions for both commune/village level and district level nurseries;
- (xi) Prepare guidelines for establishment and maintenance of plantations especially on heavily degraded forest for commune/village forestry supervisors; and
- (xii) Undertake random sampling of seedling quality from various nurseries and assist in quality improvement if required.

4. National Social Development / Safeguards Specialist (36 p-m)

39. The consultant shall work closely with the International Social Development/Safeguards Specialist and the national Gender Specialist and will review the Project related documentation specifically all social safeguards documents (EMDF, RF, & GAP), including the feasibility study

and consultants reports produced during project preparation, to better understand context and directions of proposed investments under the Project. The consultant will be responsible for providing the directions of project implementation as regards the social dimensions (to include indigenous people, resettlement, risk reduction, gender and development, rural institutions, and stakeholder participation). Specifically, the national consultant will:

- (i) Prepare localized consultation and participation plans through Stakeholder workshops to orient them on the project and seek agreement on land use planning;
- (ii) Generate project standard to document broad community support;
- (iii) In accordance with social safeguards framework documents, work closely with implementers in finalizing and applying screening criteria for subproject selection;
- (iv) In partnership with the communications/community development specialist, ensure that IEC protocols and procedures are appropriate for specific beneficiary groups, produced and/or implemented in culturally acceptable and gender sensitive manner;
- (v) Conduct a needs assessment in three communes in a participatory manner and prepare socio-economic/poverty profiles socio-economic database to serve as benchmark information for the input, output, and outcome monitoring and evaluation indicators for assessing the poverty, social, and gender impacts of the Project components and for the Project as a whole with strict reference to the DMF. Said output will serve as the format for ensuing poverty profiling and assessments;
- (vi) Ensure appropriate selection criteria for assisting organizations/professionals contracted to conduct SIA and other required census/survey/reports, whenever applicable, and capacitate selected assisting organizations/professionals;
- (vii) Oversee the conduct of social impact assessment as well as all other necessary census/survey/reports for commune-proposed subprojects using the EMDF, RF and GAP as key references. Where applicable, that the necessary planning documents are prepared in cooperation/coordination of relevant partner institutions;
- (viii) Ensure that the necessary social safeguards plans are generated in a consultative and participatory manner and that these plans incorporate effective participatory approaches that are culturally and gender sensitive, ensuring inclusion of vulnerable stakeholders/ beneficiaries to project benefits flows;
- (ix) Ensure that redress mechanisms are in place prior to subproject implementation and that disclosure procedures as stipulated in the social safeguards framework and pertinent ADB Communications Policy are observed;
- (x) Oversee Internal and External Monitoring for all social safeguards and validate findings;
- (xi) Whenever unanticipated impacts on project beneficiaries become apparent during project implementation, ensure that a SIA will be conducted in order to update the EMDP/RP or that a new EMDP/RP shall be formulated to reflect updates;
- (xii) In consultation with relevant members of the team, carry out an analysis of policy adjustments related to social dimensions such as: land and tree tenure, vulnerability of human settlements and rural livelihoods to climate impacts, micro credit, institutions, etc. for inclusion into a policy dialogue with the government;
- (xiii) In consultation with relevant members of the team, propose options for capacity building of various local community groups/organizations that may be involved with implementation of the Project, identifying the means and institutions for such

capacity building measures. This can include community-based public education and outreach activities related to climate risk reduction and commune development fund management.

5. The National Environmental Safeguarding Specialist (NESS) (36 p-m – completed)

40. The consultant will ensure that the Project is implemented in accordance with the environmental safeguarding requirements of ADB and the Government. The NESS will be attached to the office for coordination among provinces (based at the PPMU levels). The NESS will coordinate and facilitate all related monitoring and reporting activities. Specifically, the NESS, in collaboration with other the International Environmental Safeguarding Specialist (IESS), the National Environmental Safeguarding Specialist - Infrastructure, Project staff, implementing partners and stakeholders, will undertake:

- (i) Assist the Provincial Project Management Units (PPMU) to comply with the ADB and Government environmental safeguarding requirements;
- (ii) Coordinate and facilitate all environmental safeguarding monitoring and reporting activities for the Project; prepare detailed monitoring schedules as well as the final monitoring reports for submission to ADB;
- (iii) Support villages, communes and district-level involved in Project implementation, in particular in the management of the CDF, with meeting the environmental safeguarding requirements for the Project;
- (iv) Assist villages and communes with the integration of the environmental safeguarding guidelines into the CDF operating regulations;
- (v) Liaise on environmental matters with other technical agencies that will provide support services to the provinces;
- (vi) Contribute to developing a detailed monitoring and reporting schedule for the Project in consultation with ADB to ensure that the environmental safeguarding requirements associated with the selected subprojects are effectively met;
- (vii) Be trained by the IESS in applying the EARF and the ADB environmental safeguarding procedures and requirements;
- (viii) Prepare a screening checklist based on the relevant ADB Rapid Environmental Assessment (REA) checklists and the screening list of the Government.
- (ix) Assist the PPMUs with completing the environmental screening lists for all of their subprojects, as well as the CDF managers for their subprojects;
- (x) Carry out a formal screening of the subprojects for environmental impact, both according to ADB environmental safeguarding standards and according to those of the Government, based on the completed screening checklists;
- (xi) Apply the set of environmental safeguarding guidelines that will be developed to all subprojects to ensure that the subprojects are designed in a way that does not alter the environmental classification of the Project in accordance with ADB's environmental safeguarding policy and procedures;
- (xii) Review Project work plans and CDF investment plans for the environmental assessment of the subprojects as they will be finalized during project implementation;
- (xiii) Categorize subprojects as belonging to one of the three environmental categories for ADB projects;
- (xiv) Provide guidance to the PPMU or CDF managers involved for the preparation of Initial Environmental Examinations (IEE) for subprojects requiring an IEE;

- (xv) Prepare the required documentation to report to ADB the outcome of the screening and categorization process, as well as any IEE documentation;
- (xvi) In the case of category C subprojects, notify ADB of the screening findings and the categorization of the subproject;
- (xvii) Provide guidance and support to the PPMU or the CDF managers to prepare the Environmental Impact Assessment (EIA) for subprojects according to GoV requirements;
- (xviii) Provide guidance and support to the PPMU or the CDF managers to prepare and register the written environment protection commitment for subprojects that are required to do so; and
- (xix) 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.

6. Procurement Specialists (National, 60 p-m under BCCP with second person for National, 42 p-m under AF)

41. In close cooperation with the National Project Director/Coordinator, the Provincial Project Coordinators, and relevant technical departments in the three Project provinces, manage the procurement duties of the Project based on ADB and MoF regulations. The consultant will:

- (i) Prepare and standardize procurement related documents, implement, manage, and monitor the Project's procurement;
- (ii) Review and periodically revise, as required by ADB and the EA, the procurement plan negotiated between ADB and the EA for the grant contract. Submit revisions to the EA and ADB for approval; and
- (iii) Finalize the terms of reference and cost estimates for any consultants required by the Project. Submit to the EA and ADB for approval.

42. For each procurement package in the Project work plan,

- (i) Prepare bidding documents for the goods or services required. These include technical specifications for the good or service required, contract conditions that each bidder must accept, and formats/templates for bidders to use in preparing their bids. Submit the draft bidding documents for each procurement package to the EA and ADB for approval, according to the timelines in the Project work plan;
- (ii) Advertise the request for bids for the goods or services as required;
- (iii) Prepare a list of qualified bids that are submitted in response to the request for bids;
- (iv) Evaluate the bid proposals for technical compliance and financial criteria, and rank the bids;
- (v) Prepare and submit an evaluation report on the bids to the EA and ADB for approval, as necessary;
- (vi) Provide advice to the EA on the bids and evaluation as required. Provide information to the EA's procurement steering committee, as appropriate;
- (vii) Assist the EA to finalize a contract with the firm that submits the first-ranked bid; and
- (viii) Undertake other duties that may be assigned by the Project Director.

7. Finance Specialist (National, 54 p-m and 12 p-m under AF)

43. The consultant will work in close co-operation with the National Project Director/Coordinator and the Provincial Project Coordinators and relevant technical departments in the three Project provinces. The consultant will:

- (i) Manage the financial duties of the Project based on ADB and MoF regulations, prepare and standardize the financial documents, implement and manage the Project's budget;
- (ii) liaise with the Asian Development Bank (ADB)'s financial and administrative specialists, ensuring the Project applies ADB's financial rules, regulations and policies. Liaise with Ministry of Finance (MoF) project financial specialists, ensuring the Project applies MOF's financial rules, regulations, and policies;
- (iii) prepare all financial procedures for the Project. This may include, but is not limited to, standardize Project financial document templates, contracting forms, etc. in accordance with ADB and MoF guidelines;
- (iv) manage the Project's funds and accounts, including (i) money transfers from ADB and MoF to Project accounts, (ii) allocating funds to Project sub-accounts, (iii) monitoring the Project's financial status, and (iv) overseeing the Projects funds movement in each Project provincial sub-account;
- (v) prepare the Project's financial reports and statements for annual audit. This includes but is not limited to, monthly reports, quarterly reports and other reports that may required by the Project Director, and the ADB;
- (vi) assist on increasing the capability of Project accounting staff. This may include conducting a training needs assessment on the accounting staff to identify gaps, and then provide training to staff to cover gaps identified; and
- (vii) undertake other duties that may assigned by the Project Director/Coordinator.

8. Monitoring & Evaluation (M&E) Specialist (National, 36 p-m plus 10 p-m under AF)

44. The M&E Specialist will:

- (i) Identify detailed data needs assessment based on project design and monitoring framework (DMF) and related indicators as appropriate;
- (ii) Develop a plan with provincial PMUs to collect and process existing data;
- (iii) Establish a system for monitoring;
- (iv) Coordinate the monitoring teams in the provincial PMUs, work with identified collaborating partners as necessary to collect required data outside the project, and build related government capacity;
- (v) Develop an approach to regularly update the baseline data;
- (vi) Analyze the monitoring data and develop information reports for the Lao PDR government, ADB, and key stakeholders to the project;
- (vii) Develop a BCC Baseline and Monitoring Framework
- (viii) Review the project DMF in consultation with the Grant Implementation Consultants team and the national PMU. Identify any potential gaps in monitoring and evaluating the project's progress. Identify additional indicators that would help monitor the project's impact, outcomes and outputs if required (other than those in the DMF);
- (ix) Take into account synergies with the CEP monitoring framework established by the ADB's Environment Operations Center (EOC);

- (x) Identify temporal and spatial boundaries for indicators, and propose data collection and baseline reporting frequency;
- (xi) Based on indicators identified in the BCC Baseline and Monitoring Framework, undertake a data needs assessment and action plan (DNAAP);
- (xii) Identify relevant datasets and sources (publications, organizations) for secondary data, including metadata for each (i.e., underlying methodology, updating procedures and intervals, accuracy, restrictions etc.);
- (xiii) Identify data gaps (including gaps due to data of insufficient quality);
- (xiv) Based on the secondary data gaps, identify primary data needs and scope out activities to collect primary data (i.e., identification of activity such as surveys, GIS analysis, and development of methodology);
- (xv) Develop a database system that will capture and record monitoring data from each provincial PMU and the national PMU;
- (xvi) Collect primary and secondary data to compile the baseline for BCC sites;
- (xvii) Develop a system to source secondary data identified in the DNAAP as required (for example, MOUs or LOAs with provincial government departments, etc.);
- (xviii) Collect and compile secondary data, and collate metadata;
- (xix) Implement and oversee primary data collection, monitoring data collection, compiling results, and validation of data;
- (xx) Process and collate data into a suitable format for reporting and dissemination, with an emphasis on a format that meets ADB requirements. Liaise with ADB's EOC to ensure compatibility of the Lao M&E framework with that of the EOC;
- (xxi) Recommend individual studies and assessments to fill data gaps (primary data collection, such as surveys or GIS analysis); and
- (xxii) In consultation with the GIC team and ADB's EOC team, discuss ideas on distribution and presentation of monitoring information, to increase the visibility and impact of the project with stakeholders (focal point agencies, collaborating partners, etc.).

9. Village Development Fund (VDF) Trainers: 3 (National, one for each province) (18 p-m each – completed)

45. The scope of work includes:

- (i) Design and deliver a training session to each of the project villages in a province from 1 July–30 November 2013 on how to operate a revolving village development fund;
- (ii) Participants in the first part of each training session will include the village committee that will administer the village development fund, members of the village management committee, and other villagers nominated by the village chief who may be involved in the administration of the village development fund;
- (iii) The second part of each training session will be open to any villager who wants to learn about the village development fund and how a household can apply for a loan from the fund;
- (iv) The first part of each training session shall cover at least the following:
 - the rules and guidelines for administering village development funds (these are being developed by the BCC project's National Project Management Office and GIC team);
 - the duties of the village development fund committee;
 - procedures for applicants to apply to the village development fund for a loan;

- assessment procedures that will be used by the village development fund committee to evaluate an application;
 - approval processes for applications;
 - disbursing the funds to successful applicants;
 - procedures for applicants to repay the loan;
 - procedures for the village development fund committee to manage money in the fund;
 - record-keeping requirements for the village development committee; and
 - preparing for a monitoring visit.
- (v) The second part of each training session shall aim to build an understanding of villagers in what a village development fund can do for households and how a household can apply for a loan from the village development fund;
- (vi) The national specialist will be encouraged to propose training techniques that encourage interaction between villages and the trainer; and
- (vii) Monitor the operations of each village development fund in a province on the following schedule:
- 2014
 - one monitoring visit per village from January - June 2014
 - one monitoring visit per village from July - December 2014
 - 2015: one monitoring visit per village
 - 2016: one monitoring visit per village
 - 2017: one monitoring visit per village
 - 2018: one monitoring visit per village

46. Monitoring shall include a financial component, including at least the following:

- (i) balance of village development fund at the end of each year;
- (ii) number of loans made each year and the amount of each loan;
- (iii) the amount repaid on each loan and the balance outstanding;
- (iv) the number of delinquent loans and the amount in arrears owing on each delinquent loan;
- (v) the number of loans that will never be paid back and the amount lost by the village development fund;
- (vi) the number of loan applications rejected each year and a summary of reasons for the rejections; and
- (vii) a projection on the number of loans to be made in the following year, the estimated amount of each loan, and the purpose of each loan.

47. Monitoring shall also evaluate non-financial components, including at least the following:

- (i) the time from a loan application being submitted to when the applicant receives funds;
- (ii) the success of the activity for which an applicant used a loan;
- (iii) the level of satisfaction of villagers with the performance of the village development fund; and
- (iv) the level of satisfaction of the village development fund committee with the performance of the village development fund.

48. Additional positions. The following additional support staff to assist with AF implementation will include:

- a. Project Accounts Assistant (NPMO) – 42 p-m for AF
- b. Project Administrative Assistant (NPMO) – 42 p-m for AF
- c. Project Accountants (Sekong & Attapeu PPMOs) – 42 p-m each
- d. Field Coordinators (agriculture extension officers) – one each in Dakcheung and Phouvong Districts - 45 p-m each

10. National Project Accounts Assistant (42 p-m under AF)

49. The National Project Accounts Assistant will report to the National Finance Specialist as well as National Project Manager and National Project Coordinator, and will work at the NPMO office under the direct supervision of the National Finance Specialist. The Accounts Assistant will:

- (i) Require a knowledge of accounting, computer and computer data base management to assist the National Finance Specialist maintain the daily payment and Imprest accounts of the Project
- (ii) Support the managing the Project's budget, including preparation of the quarterly and annual budget plans, preparing quarterly and annual financial reports for Project Coordinator's review, managing advance funds in compliance with the prevailing regulations, tracking disbursement progress, completing cash management and disbursement , maintaining a fixed asset system, preparing VAT returns, calculating and paying personal income tax, tracking expenditures of relevant stakeholder, preparing financial and disbursement document or other financial reports.
- (iii) Undertake the following tasks:
 - Assist in monitoring expenditures against budget
 - Assist in preparing financial statement and financial reports.
 - Maintain accounting ledgers
 - Prepare bank reconciliation statements on a monthly basis
 - Initiate requisitions for procurement and other payments
 - Manage petty cash and ensuring reporting of its transaction
 - Take responsibility for safe custody of accounting books, all financial related documents and instruments
 - Initiate reports of expenditure
 - Identify and initiate requests for funds to be submitted to ADB
 - Arrange payments to suppliers
 - Prepare end submit expenditure and programme budget status report
 - Respond to queries from the Government and ADB with respect to financial aspects of the programme, liaise with ADB appointed and external auditors where ever required and
 - Undertake other duties as assigned by the National Financial Management Specialist.
- (iv) Travel to the Project provinces from time to time to support the provincial Project accountants with the preparation of Provincial accounts as directed by the National Financial Management Specialist

50. Minimum Qualification Requirements

- Bachelor degree or higher education diploma in a directly relevant field such as accounting finance or business administration

- Proven experience in accounting or management of computer data bases (MS Excel)
- 1 or 2 years of relevant experience in the public or private sector.
- Good command of English
- Willingness to travel to remote areas

11. National Project Administrative Assistant (42 p-m under AF)

51. The National Administrative Assistant will be based at the NPMO and report to National Project Coordinator. He/she will work under to National Project Coordinator and / or National Project Manager. The Assistant will:

- (i) Support with project management activities including the planning, implementing and monitoring of Project activities, and
- (ii) Assist the national experts with administration, procurement and finance activities as required.
- (iii) Detailed tasks will include:
 - Support and assist international and national experts in implementing their work including: coordinating internal and external project communication and other admin work (hotel bookings, visa, office tools etc.)
 - Maintain all personnel project records document as contract of staff and expert, responsibility of Staff, sick leave days, annual leave days etc.
 - Prepare staff contracts
 - Prepare all of facilities related with work of the project
 - Undertake and be responsible for general admin work in the office including document management and filing,
 - Prepare for meetings / conference under the project and with other departments including the Project Steering Committee meetings and Technical Committee conferences

52. Minimum Qualification Requirements

- Bachelor degree or higher education diploma in in business administration, Secretary or a directly relevant field
- 1 or 2 years of relevant experience in the public or private sector.
- Experience with Microsoft office
- Good command of English, and
- Willingness to travel to remote areas

12. Provincial Project Accountants – Sekong and Attapeu (42 p-m each)

53. The Provincial Project Accountant (Sekong and Attapeu) will report to Provincial Project Coordinator and National Finance Specialist, and will work at the PPMO office under the direct supervision of the Provincial Project Coordinator. The Accountant will:

- (i) Require a knowledge of accounting, computer and computer data base management to maintain the Provincial daily payment and Imprest accounts of the Project

- (ii) Support management of the Project's budget, including preparation of the quarterly and annual budget plans, preparing quarterly and annual financial reports for Provincial Project Coordinator's review, managing advance funds in compliance with the prevailing regulations, tracking disbursement progress, completing cash management and disbursement, maintaining a fixed asset system, preparing VAT returns, calculating and paying personal income tax, tracking expenditures of relevant stakeholder, preparing financial and disbursement document or other financial reports.
- (iii) Undertake the following tasks:
 - Assist in monitoring expenditures against budget
 - Assist in preparing financial statements and financial reports;
 - Maintain accounting ledgers;
 - Prepare bank reconciliation statements on a monthly basis;
 - Initiate requisitions for procurement and other payments;
 - Manage petty cash and ensuring reporting of its transactions;
 - Take responsibility for safe custody of accounting books, all financial related documents and instruments;
 - Initiate reports of expenditure;
 - Identify and initiate requests for funds to be submitted to ADB;
 - Arrange payments to suppliers;
 - Prepare and submit expenditure and programme budget status reports;
 - Respond to queries from the Government and ADB with respect to financial aspects of the programme, liaise with ADB appointed and external auditors wherever required;
 - Undertake other duties as assigned by the Provincial Chief Accountant, Provincial Project Coordinator and National Financial Management Specialist
 - Undertake other duties as assigned by the Provincial Chief Accountant, Provincial Project Coordinator and National Finance Specialist.
- (iv) Travel to the Project Districts from time to time to support the district Project district personnel with the preparation / reconciliation of district planning / expenditures s directed by the Provincial Project Coordinator and National Finance Specialist

54. Minimum Qualification Requirements

- Bachelor degree or higher education diploma in a directly relevant field such as accounting finance or business administration
- Proven experience in accounting or management of computer data bases (MS Excel)
- 1 or 2 years of relevant experience in the public or private sector.
- Good command of English and
- Willingness to travel to remote areas

13. Districts Field Coordinators (Agriculture Extension) – Dakcheung and Phouvong (45 p-m each)

55. The National District Field Coordinators (Agricultural Extension) will in close co-operation with the Agro-forestry and Livestock-forestry service providers, the GIC team, other service providers and assigned national, provincial and district government staff, assist the district with:

- (i) Coordinating the Project activities in the AF villages in their respective districts to facilitate efficient and effective implementation. This will include:
 - Maintaining communications with villages / keeping them informed of Project activities and progress
 - Assisting service providers / GIC / other experts with arranging planning and other meetings with the villages
 - Assisting service providers / GIC / other experts with training activities
 - Assisting responsible service provider / GIC and Government staff to monitor activities to ensure ToRs are being complied
 - Assisting responsible service provider / GIC and Government staff to monitor activities to ensure compliance with social and environmental safeguards, gender frameworks and ethnic minority development plans
 - Assisting the Project with ensuring the quality of the agro-forestry and livestock-forestry services provided is being maintained and
 - Reporting any issues affecting Project implementation to the District and Provinces and assisting with their resolution
- (ii) Assisting the REDD Training Specialist to incorporate the necessary capacity development activities for agro-forestry / livestock forestry development in a comprehensive capacity development plan for the villages, and
- (iii) Any other tasks as requested by the Project District Coordination Office, PPMO or NPMO
- (iv) The National District Field Coordinators (Agricultural Extension) will report to the District Project Coordinators appointed under BCC-AF.

56. Minimum Qualification Requirements

- Bachelor degree or higher degree in a directly relevant technical field such as agriculture and/or livestock and/or forestry
- Proven experience in community-based agriculture / livestock / forestry development using participatory methods with ethnic minority groups, preferably in upland communities such as in Dakcheung / Phouvong Districts
- Familiarity with addressing gender and social safeguard aspects in planning, implementation and management of project activities
- 2 years of relevant experience in multilateral / bilateral development aid projects
- Good computer skills in MS Word, Excel and PowerPoint
- Good command of English and preferably local / ethnic minority language skills applicable to Dakcheung / Phouvong Districts, and
- Able to travel to remote and physically challenging areas

14. Small-Scale Infrastructure Design Engineer Terms of Reference

57. Under output 3 of the Project, small-scale infrastructure subprojects of will be implemented. Two individual engineers have been engaged to develop detailed engineering design and feasibility studies of the subprojects. A social safeguards specialist has been recruited by the National Project Management Office (NPMO) to support the Project's social safeguards, including social safeguards of the proposed infrastructure subprojects. However, during the ADB midterm review mission fielded between 3 and 10 November 2014, ADB and the Government agreed that the current list of the subprojects needs to be reviewed and

organized to become more implementable. A more focused approach with a limited number of villages to be supported (i.e. less than 67 villages as currently proposed) and/or a limited number of subproject types (e.g. water supply and sanitation only) which directly contributes to livelihoods of people dependent on forest resources, was agreed.

58. The purpose of the consulting services is to develop an implementable plan for the small scale infrastructure of the Project with clear timeline and cost estimate, based on the review of the consultations process and design work already conducted. Based on this plan, the preparation of: (a) feasibility studies; (b) detailed design; (c) bidding documents; and (d) construction supervision will be carried out by the consultants. The consultants will be recruited by the NPMO following Consultants' Qualifications Selection (CQS) procedure.

59. The Grant Implementation Consultants (GICs), the two engineers already engaged, and the social safeguards specialist who have commenced their consulting services will play an important role in providing input to the planning/scoping as well

60. The proposed consulting services are divided into two (2) subpackages:

- (i) Subpackage 1: Infrastructure planning; and
- (ii) Subpackage 2: Feasibility Studies, detailed design and supervision as described below

(i) Subpackage 1: Objective

61. The objective of the services under Subpackage 1 is to recommend an infrastructure plan for the Project that is implementable in an efficient way, meeting ADB and government standards, contributing to the Project objective, and staying within the Project timeframe and budget for infrastructure, estimated at \$3 million.

(ii) Subpackage 1: Tasks

62. The infrastructure planning team will undertake the following tasks:

- (i) Review the list of proposed subprojects, assess their implementability within the available budget and time;
- (ii) Work with NPMO and Project Management Offices (PMOs) of the three participating provinces, GIC consultants, the engineers, and the social safeguards specialist to assess status of the currently proposed subprojects;
- (iii) Review all project documents including recommendations from the ADB midterm review mission on infrastructure;
- (iv) Develop criteria selection of the subprojects;
- (v) Support NPMO and PMOs to select subprojects based on these criteria;
- (vi) Propose an implementable infrastructure implementation plan with clear timeline and cost estimates;
- (vii) Revise TORs for Subpackage 2 in a performance-based/output based approach, and recommend schedule of the deliverables for Subpackage 2 based on the infrastructure implementation plan.

(iii) Subpackage 1: Team Composition

Position	Responsibilities	Input	Qualifications
International Infrastructure Team Leader/Senior Engineer	Lead the team to deliver outputs defined under 4.4.	1.5 person-months (intermittent over 2 months)	<p>A university graduate engineer with at least 20 years working experience in planning, design, and construction supervision small-scale infrastructure, rural development, or water resources development projects.</p> <p>At least 7 years of experience as a team leader in similar projects.</p> <p>Familiarity with ADB or other donors is an asset</p> <p>Experience in Lao is an asset</p>
National environment safeguards specialist	Screen all subprojects to ensure no subproject of category A for environment will be selected. Specify environmental safeguards requirements for Subpackage 2	1 person-month (intermittent over 2 months)	<p>A university graduate in environmental management, environmental engineering or relevant background</p> <p>At least 10 years working experience in environmental safeguards in rural development projects</p> <p>Experience with ADB or other donors is an asset</p>
National social safeguards specialist (already engaged by the NPMO)	Screen all subprojects to ensure no subproject of category A for indigenous peoples and resettlement will be selected. Specify social safeguards requirements for Subpackage 2 Ensure gender targets for infrastructure as reflected in the Project gender action plan are included in requirements for Subpackage 2.	2 person-month	N/A

(iv) Subpackage 1: Deliverables

Output	Time
A status report of the current list of infrastructure, including the names of the proposed infrastructure subprojects, its location, status of consultations, and status of the subproject preparation	Within one weeks of mobilization
Draft guidance for selection of subprojects, including selection criteria	Within two weeks of mobilization
Final guidance for selection of subprojects incorporating ADB, NPMO and PMOs comments	Within three weeks of mobilization
Based on input from PMOs and NPMO, a draft infrastructure plan within timeline and budget of the infrastructure component of the	Within five weeks of mobilization

Project, including: <ul style="list-style-type: none"> - Names of the subprojects - Their location - Cost estimate (ballpark) - Design and implementation schedule - Brief description of their contribution to conservation goals (with support from the GIC team leader) - How feasibility studies of the subprojects can be organized in the most efficient manner, meeting ADB and government requirements. 	
Final infrastructure plan incorporating NPMO, PPMOs, and ADB's comments	Within seven weeks since mobilization
A revised TORs of the consultants and detailed schedule of the deliverables for Subpackage 2 to support the implementation of the infrastructure plan.	Within eight weeks since mobilization

(v) Subpackage 2: Objective

63. The objective of the consulting services under Subpackage 2 is to prepare: (a) feasibility studies; (b) detailed design; (c) bidding documents; and (d) construction supervision.

(vi) Subpackage 2: Team Composition, Required Inputs and Qualifications

64. The estimated team composition and required inputs for Subpackage 2 are summarized below. The team composition and required inputs are subject to changes based on recommendations from Subpackage 1.

No.	Position	Total Input (person-months)	Responsibilities	Qualifications
1.	Team Leader (international) for design	3	Lead the team to deliver outputs defined in 5.3.	<p>A university graduate engineer with at least 20 years working experience in planning, design, and construction supervision small-scale infrastructure, rural development, or water resources development projects.</p> <p>At least 7 years of experience as a team leader in similar projects.</p> <p>Experience with ADB or other donors is an asset</p> <p>Experience in Lao PDR is an asset.</p>
2.	Engineers (2 persons x 5 months)	10	<p>Assist the Team Leader to check, review and modification of the basic design of the feasibility study, and the detailed design of the subprojects.</p> <p>Prepare the detailed BoQ, cost estimate, technical specifications, and bid documents.</p>	<p>University graduate engineer with at least 15 years' working experience in planning, design, and construction supervision of rural development projects</p> <p>Experience in similar ADB projects an advantage</p>
3.	Environmental Safeguards Specialist	10	Prepare environmental assessment of all subprojects, including environmental screening, initial environmental examinations where applicable, and environmental management and monitoring plans	<p>A university graduate in environmental management, environmental engineering or relevant background</p> <p>At least 10 years working experience in environmental safeguards in rural development projects</p> <p>Experience with ADB or other donors is an asset</p>
4.	Social Safeguards Specialist (already engaged)	12	Conduct social impact assessment of all subprojects	N/A

No.	Position	Total Input (person-months)	Responsibilities	Qualifications
5.	CAD draftsmen (2 persons x 5 months)	10	Carry out detailed design drawings including topographical maps, cadastral maps, scheme layout, and structure drawings to acceptable standard and good for construction purposes.	A tertiary qualification and at least 2 years relevant experience.
6.	Survey Team (3 teams x 6 months)	18	Each survey team will be responsible for subprojects in one province. Survey Team will be headed by a chief surveyor and responsible for carrying out the topographical survey of subprojects. The team shall comprise of sufficient number of members to carry out the task efficiently and effectively and be fully equipped to carry out the works.	The survey team shall comprise of a qualified surveyor to Higher National Diploma level and have at least 5 years of experience; two skilled laborers and two manual laborers.
7.	Regional team leader (for supervision) ¹⁴	5	Take overall responsibility for the management and supervision of the construction works. His/her responsibilities include but not be limited to: i) approve and monitor the contractor's construction program and method statements, ii) provide the contractor with the existing survey data (bench marks) and monitor the contractor's mobilization and setting out of works, iii) assist the contractor with identification of construction material sources and approve all materials for inclusion in the works, iv) plan and execute the construction supervision and contract administration, v) irregular inspection of the contractor's equipment, installations, housing etc. to ensure that they are adequate in accordance with the terms and conditions specified in the contract, vi), check BoQ and certify payments for works against relevant bills of quantities, and issue progress payment certificate, final payment certificate and other certificate including the taking over certificate, as required under the contract, vii) evaluate claims, disputes, extensions of time including issuing variation orders as appropriate, in line with the limits placed on the engineers' authority, as well as advising the contracting authority on all matters relating to the execution of the works, viii) issue decisions/instructions as appropriate under contract, ix) provide timely assistance to the contractor in all matters related to the interpretation of the contract documents, ground survey controls planning, quality control testing and other matters relating to the execution of the works, and x) inspect the works one time every two months during the defect liability period and issue the defects Liability	Bachelor Degree of civil engineering with a minimum of 8 years of experience with minimum 2 rural development projects as a resident engineer.

¹⁴ The individual engineers, if retain during construction stage, will support the consultant team in the supervision of the works.

No.	Position	Total Input (person- months)	Responsibilities	Qualifications
			Certificate.	
8.	Site Inspector (3 persons x 4 months)	12	The Site Inspector shall assist the regional team leader for supervision in his/her duties stated above, including: i) maintain a day-to-day diary recording all events relevant to the works; ii) carry out daily inspection of the works to ensure compliance with technical specifications and drawings; and iii) witness sampling and testing being carried out by staff of the Contractor and authorize audit tests as necessary to ensure the quality of works.	
9	Unallocated (national)	5		
	Subtotal international input (person-months)	3		
	Subtotal regional input (person-months)	5		
	Subtotal national input (person-months) excluding the social safeguards specialist who has been engaged by NPMO	65		

(vii) Subpackage 2: Deliverables

- (i) Defined design standard and specific format as required by the government and ADB.
- (ii) For each subproject, detailed drawings meeting the standards of ADB and government.
- (iii) For each sub-project, detailed BoQ, cost estimate, technical specifications, and bid documents.
- (iv) Completed feasibility study for each sub-project, or a feasibility study for a set of sub-projects as recommended in Subpackage 1, with input from the NPMO national social safeguards specialist on social due diligence. The feasibility studies must reflect relevant Project social and environmental safeguards and gender requirements. Feasibility studies must be of quality acceptable to the Government and ADB.
- (v) Monitoring and supervision of the construction of each infrastructure subproject, ensuring that the construction meets the design and technical specifications for the subproject, and also the standards for infrastructure of the government.
- (vi) Semi-annual progress reports for all subprojects under construction and adherence to specifications.
- (vii) Final progress report upon completion of construction of all subprojects.
- (viii) Time schedule of Subpackage 2 is estimated at **24 months from June 2015 to May 2017.**
- (ix) Detailed schedule of the deliverables will be specified as a result of Subpackage 1.

APPENDIX 3: TERMS OF REFERENCE FOR INDEPENDENT SAFEGUARDS MONITORING

A. Background

1. ADB approved \$20 million Grant financed from its Asian Development Fund Special Funds Resources for the Biodiversity Conservation Corridors Project (the Project) on 10 December 2010. The captioned Grant became effective on 11 April 2011. The long-term impact of the Project is climate resilient sustainable forest ecosystems benefiting local livelihoods. The Project outcome is sustainably managed biodiversity corridors in Lao PDR. The Project has four outputs: (i) institutions and communities strengthened for biodiversity corridor management and ready to implement REDD+; (ii) biodiversity corridors restored, ecosystem services protected, maintained and REDD+ ready; (iii) livelihoods improved and small-scale infrastructure support provided in target villages; and (iv) project management and support services provided. The Project originally covered 69 villages in 5 districts across Attapeu, Champasak and Xekong provinces in Southern Lao PDR. However, 69 villages have been reduced into 67 villages due to the government's policy to combine small villages. In Sekong province, Dak Diang and Dak Ru villages were combined and named Dak Diang village, In Attapeu province, Hat Ou Dom Xay and Sen Keo villages were combined and named Hat Ou Dom Xay village.

B. Required Safeguards Monitoring Entities (SMEs) and its Services

2. In addition to the services provided by the social and environmental safeguards specialists (consultants) to the Project, the Grant covenants requires independent monitoring on the safeguards to ensure that all recommendations and mitigation measures under the Ethnic Groups Development Framework (EGDF), Resettlement Framework (RF) and the Environmental Assessment and Review Framework of the Project are being implemented.

3. One SME will be required for the Project, to be recruited by the National Project Management Office following ADB Consultants' Qualifications Selection (CQS) procedure in conformity with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Interested entities such as local NGOs, or domestic universities and institutions must provide amplified Expressions of Interest (EOI) which includes the information showing that they are qualified to perform the services, giving the entity general experience for similar assignments and CVs of Key personnel with academic background, experience in similar assignments, knowledge of local conditions, etc.

C. Duration of Assignment

4. Intermittent, from mobilization expected in early 2015 to 2019.

1. Package 1: Social safeguards

5. **Rationale.** The Project and the additional financing expected from the Forest Investment Program may entail impacts on ethnic minorities and involuntary resettlement. In accordance with the ADB-approved EGDF and RF, the services of an external monitoring entity are required to:

- (i) Propose and provide an effective tool for assessing implementation of social safeguards;
- (ii) Determine if the project is implemented in accordance with the EGDF and RF;
- (iii) Verify the findings of internal monitoring and evaluation;

- (iv) Conduct independent and periodic monitoring of implementation of social safeguards, and
- (v) Evaluate if the objectives of approved frameworks are being/have been met, i.e., affected persons' living standards are at par with their pre-project conditions and Indigenous Peoples' rights are upheld.

6. **Detailed Tasks.** The external monitoring entity is tasked with the following:

- (i) Assess whether ethnic groups development plans and resettlement plans have been prepared in accordance with the approved EGDF and RF, respectively, and provide recommendations to fill in gaps
- (ii) Propose and carry out the mechanism for determining the effectiveness of the implementation of the EGDF, RF, ethnic minorities plans, and resettlement plans including but not limited to:
 - a. Defining the monitoring system and the monitoring cycle to be followed;
 - b. Preparing and applying gender disaggregated monitoring indicators and impact indicators;
 - c. Developing and maintaining a monitoring and evaluation database;
 - d. Proposing and applying standardized monitoring and evaluation checklists;
 - e. Determining the effectiveness of institutional arrangements and grievance redress mechanism.
- (iii) Provide timely advise to project management on ways to improve implementation of EGDF, RF, ethnic groups development plans, and resettlement plans;
- (iv) Verify internal monitoring reports through field visits and interviews with affected persons, ethnic groups, and other stakeholders;
- (v) Conduct independent and periodic monitoring of the progress of implementation of EGDF, RF, ethnic groups development plans, and resettlement plans;
- (vi) Document changes in income and living standards among affected persons;
- (vii) Document changes in living conditions, cultural practices, and communal ways of life among ethnic minorities;
- (viii) Verify land donations, if any;
- (ix) Report on the grievances and concerns of ethnic groups and affected persons;
- (x) Advise on the need for corrective action plans, if warranted;
- (xi) Submit quarterly reports which includes discussion of all the above;
- (xii) Assess whether affected persons' living standards have been restored or improved by comparing post-resettlement with baseline socio-economic conditions;
- (xiii) Assess whether ethnic groups received culturally appropriate project benefits, and whether adverse impacts on them were successfully mitigated;
- (xiv) Prepare evaluation report based on (xii) and (xiii); and
- (xv) Others as required or agreed upon during engagement of the external monitoring organization.

7. Deliverables.

- (i) Inception report
- (ii) Quarterly progress reports
- (iii) Evaluation report

8. Minimum Qualifications

- (i) Must have significant expertise in social safeguards and very familiar with ADB's Safeguard Policy Statement and Lao PDR's laws, regulations, and procedures for land acquisition, involuntary resettlement, land donation, and Indigenous Peoples/ethnic groups;
- (ii) Must have demonstrated experience in monitoring and evaluation;
- (iii) Must be an institute, consultancy office, NGO, pool of experts from Lao PDR.

9. Requirements for Application

- (i) Interested candidates are obliged to submit technical and financial proposals for the work with a brief statement of the approach, methodology, and relevant information demonstrating that they meet the qualifications set above;
- (ii) The proposed budget should cover all costs including logistics;
- (iii) Proposed staff members need to submit CVs showing their technical capacity to handle the tasks.

D. Environmental Safeguards Monitoring

10. The SME will provide the environmental safeguard monitoring services for the infrastructure subprojects under output 3, which is expected to commence in 2015. No category A subprojects will be selected. The SME will focus on assessing progress and compliance with the Environmental Monitoring Plans (EMPs) under the Initial Environmental Examinations (IEEs) the subprojects, thereby identifying constraints and developing remedial actions to effectively address these.

11. Key responsibilities of the SME include:

- (i) Review the EARF and the feasibility study reports for familiarization of environmental monitoring requirements;
- (ii) Develop a monitoring and assessment plan. Based on the IEEs, the SME will develop a monitoring and assessment plan responding to the scope of works outlined in these terms of reference, including the detailed field survey plan where necessary.

12. Deliverables of the environmental safeguard monitoring services by the SMR include:

- (i) A monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan for each mission. Four missions per year will be conducted. All category B subprojects will be monitored twice during construction, and at least 20 per cent of all category C subprojects will be monitored once during construction;
- (ii) Draft quarterly monitoring report submitted to the NPMO. Hard copies of the reports must be accompanied with soft copies; and
- (iii) Final quarterly monitoring report based on the NPMO comments. Hard copies of the reports must be accompanied with soft copies.

13. Requirements for the SME:

1. Team Composition and Required Inputs

14. The required SME will be qualified a local NGO, a domestic university or institution. The estimated team composition and required inputs are summarized below.

No.	Position	No. of Persons	Inputs (person-months)	Total
1	Safeguards Monitoring Team Leader and Environment Specialist (TL)	1	8.0	8.0
2	Assistant surveyor	1	8.0	8.0
	Total	2		8.0

2. Duties, Responsibilities and Qualifications

a. Environmental Safeguard Monitoring Team Leader

15. The Environmental Safeguard Monitoring Team Leader will be responsible in the overall planning and management of the Safeguards Monitoring of the subprojects. Specifically, she/he will lead the monitoring team and be responsible for the following:

- (i) Review of all the feasibility studies, IEEs including the EMPs where available of all relevant subprojects under the Project;
- (ii) Develop a monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan.
- (iii) Conduct the field monitoring surveys according to the monitoring and assessment plan.
- (iv) Prepare the quarterly monitoring reports, which include the results and assessment on the EMPs, and recommendations for any organizational or methodological improvements where applicable.

16. The Environmental Safeguard Monitoring Team Leader must have at least 10 years of relevant experience on the planning and conduct of environmental impact assessment of rural infrastructure, or rural water supply, sanitation or other agricultural development projects. She/he must hold at least a BS Degree on Environmental Science, Environmental Engineering, Environmental Management or equivalent.

b. Assistant Surveyor

17. One (1) assistant surveyor should be selected.

3. Time Schedule and Reporting.

18. Four (4) missions of environmental safeguard monitoring per year All category B subprojects will be monitored twice during construction, and at least 20 per cent of all category C subprojects will be monitored once during construction. A monitoring baseline (primary data or secondary data if available) will be established before the start of any subproject. Quarterly environmental monitoring reports will be submitted covering all subprojects. The duration of the services will coincide with the implementation period of the infrastructure subprojects.

APPENDIX 4: SUMMARY TERMS OF REFERENCE – ADDITIONAL FINANCING IMPLEMENTATION SERVICE CONTRACTS

1. Under the AF program and in response to the BCC MTR findings it is agreed that the AF program implementation will use a service provider contractor model. The indicative draft Terms of Reference are provided below.

A. Carbon Measurement, Monitoring and Trading Document Contract

1. Introduction

2. The AF will pilot approaches for conserving biodiversity and reducing emissions from deforestation and forest degradation. Specifically support will target: promoting CO₂ emission mitigation efforts and protection of forest ecosystem services through understanding and offsetting the causes and drivers of land use change. AF seeks to mainstream climate resilience practices that contribute to biodiversity conservation, while protecting the rights of local communities including improving their wellbeing. The proposed pilots will also evaluate whether payment for ecosystem services (PES) including carbon emission credits and other climate change mitigation measures provide additional incentives to slow deforestation and forest loss, improve biodiversity conservation and connectivity and protect valuable watershed protection forest.

3. The proposed pilots support innovative methods that prevent land degradation, increase carbon sequestration and enhance biodiversity in the wider BCC landscape corridor. Pilots will provide a basis to assess options for financial mechanisms to provide and safeguard selected ecosystem services such as watershed protection, carbon sequestration and biodiversity protection. Piloted activities that are evaluated as successful or value adding are expected to be integrated to sector policy and planning and adopted more widely including within the BCC and other Protection Forests in the future.

4. The pilots support activities that maximize the in-situ retention of carbon storage within the proposed forest ecosystems and as such will be included within the BCC Output 2: biodiversity corridors restored, ecosystem services protected, maintained and REDD+. Institutional capability strengthening and project management support will fit within output 1 and 4 of the BCC project. The BCC strategy seeks to empower community management of forests and supporting prioritized community investments linked to the protection and management of community forests through livelihood and infrastructure support.

5. AF activities will secure ecological services that provide benefits across wider spatial units and often over extended time periods. The AF strategy will be limited to the underlying causes and drivers of change for forest loss and degradation in each location. The targeting will require engaging with external, mostly private sector, agents of forest change that are often beyond the control of local communities. The growing impact of hydroelectric investment and the associated service providers result in increased roads, forest clearance concessions for reservoir and construction sites. Many of the actors are non-Laos entities resulting in illegal logs moving across the Viet Nam – Lao PDR border. These external agents create pressures on both existing forest resources and additional impacts on GHG emissions through their management of residual non-commercial biomass that is left for burning, or simply inundated resulting in significant level of methane production.

Estimated Emission reductions from Prioritized Districts 2015-2020

	Emission Typology	VCS Terminology	VCS Acronym	Unit	Phouvong District	Dakcheung District	Total FIP
Emission reduction	Deforestation	Avoided Unplanned deforestation	AUPD	Ha	29	662	691
				t/CO ₂	7,987	180,322	188,309
Emission reduction	Avoided Forest Degradation	Avoided Emission from Degradation	AUDD	Ha	61,477	73,217	134,694
				t/CO ₂	231,854	57,969	289,823
Carbon Sequestration	Additional Forest Growth	Enhanced forest carbon storage from afforestation, reforestation, revegetation	ARR	Ha	61,477	73,217	134,694
				t/CO ₂	17,247	22,387	39,634
Carbon Sequestration	Afforestation - Sequestration	Low productivity forest to High Productivity Forest	LtHP	Ha	1,050	1,050	2,100
				t/CO ₂	7,616	7,616	15,232

Source: ADB Staff Consultant estimates¹⁵

2. Rationale

6. While AF pilot investments seek to test and demonstrate means for reducing emissions the following contract seeks to build a data set and knowledge base regarding the impact of the pilots on carbon emissions and the value of these emission reductions in national and global emission trades. The contract will supply the technical services and experience to build a systematic and structured data system that provides the basis for monitoring change to emission levels and then uses this data to prepare draft documentation for possible carbon trades. The contract is offered separate from the pilots in recognition of the specialized expertise, the needs for independent evaluation and familiarity with the preparation of voluntary carbon and REDD based documentation.

3. Scope

7. The scope of the contract covers all AF pilots that are agreed with the PPMU and will be implemented over the period from 2016 to 2019.

4. Outputs

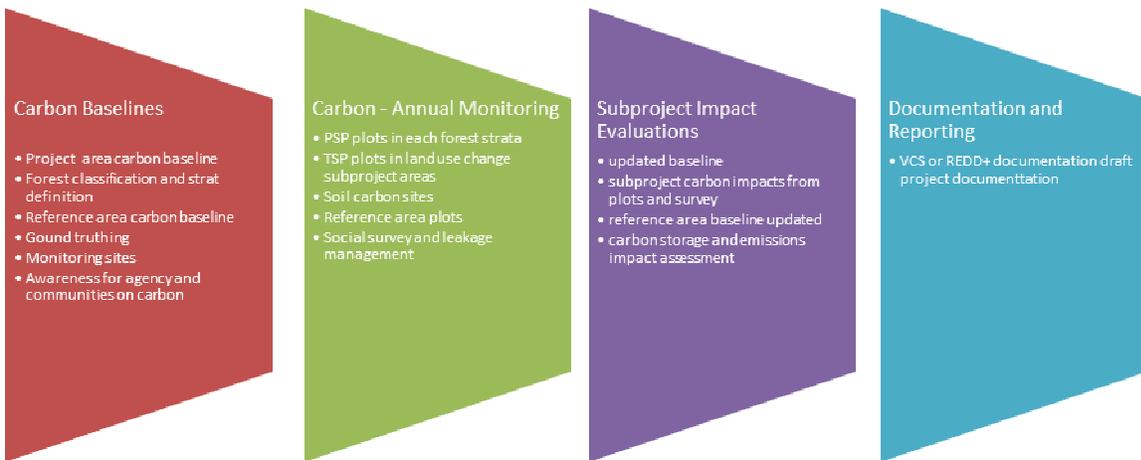
8. The contract will generate two carbon reports – one for each district – that supports an application to monetize the carbon benefits from the use of subproject upscaling. These will be supported by:

- (i) Carbon baseline assessment report;
- (ii) Carbon monitoring framework and implementation manual;
- (iii) At least 5 national staff trained in baseline assessment and monitoring techniques;
- (iv) Carbon emission impact evaluations for each Pilot program; and
- (v) Project Proposal Documentation for VCS based carbon trade

5. Task and Activities

9. The major tasks are identified in Figure 1.

¹⁵ Based on assumptions of changes in forest cover at the national level these estimates will be re-established as part of the baseline.

Figure 1: Major Tasks

a. Task 1: Carbon Baseline

10. The contractor will establish a carbon baseline to the standards required under the VCS for possible carbon trades. The baseline will need to be configured to meet the range of methodological requirements linked to reduced deforestation and forest degradation. The contractor will establish an updated satellite image base, that will be used to classify the forest cover, and land use within project districts, to define forest strata, and ground truth the images to define a carbon baseline. The contractor shall also identify an acceptable reference area for the pilot sites according to the VCS requirements. Within the reference area a forest classification and ground truthing will be undertaken to form a carbon baseline comparable to the Project site. Ground truthing will involve field visits and a mix of permanent sample plots and temporary sample plots – with sufficient to ensure the data quality of the satellite imagery interpretation. Task 1 activities will be supported by an International forest inventory expert, satellite imagery/remote sensing interpretation expert and a carbon measurement and VCS expert. National consultants in forest inventory, soil science, and field assistants who will work on sample plots, and soil carbon measurement sites.

b. Task 2: Carbon – Annual Monitoring

11. During the AF pilot subproject implementation the carbon contractor will be responsible for monitoring changes in carbon inventory and emission levels. The monitoring will have a primary focus on the subproject intervention sites where sample plots and field surveys will be used to track changes linked to each subproject. It is envisaged that approximately 1500 sample plots may be required along with the completion of village surveys to identify social impact issues, leakage due to markets, ecological and technical drivers. Staff establishing sampling plots will be retained through the life of the pilot projects.

c. Task 3: Subproject Impact Evaluations

12. During the final 12 months of AF pilot subprojects the contractor will complete the field sampling and surveys, and will reinterpret new satellite images using the same classification and strata used for forming the baseline of the project sites and the reference areas. Based on the data sets the contractor will complete a carbon balance model for each subproject and for

each of the two pilot districts. The draft findings will be shared with stakeholders in each province and nationally before a final impact model is completed.

d. Task 4: Documentation and Reporting

13. Task 4 seeks to prepare two project documents up to VCS standard that presents the potential carbon benefits from the pilot and the reference areas and assess the potential for monetizing these benefits through REDD+ or the voluntary carbon market. The document will be used as resources for a VCS/REDD+ knowledge forum to be hosted in Vientiane by AF / BCC.

6. Implementation Arrangement

14. The contractor will be a firm that has an international track record in working on forest and land use based carbon emission monitoring and trades. They will need to provide experts with demonstrable experience in (a) carbon measurement – both baselines and annual monitoring, (b) field based carbon monitoring, (c) carbon accounting, (d) familiarity with VCS methodologies, and (e) previous input to the production of VCS/REDD project documentation. It is expected that the service provider will provide expertise in (a) forest inventory and mensuration, (b) GIS and remote sensing expertise, (c) field survey, and (d) carbon accounting – including forest, soils and agricultural land use.

15. Relevant Government staff will work with the contractor and will be supported through the contract in terms of field costs. The contractor will provide capacity building support to stakeholders and will provide a series of agreed knowledge products on carbon monitoring and measurement for local use.

7. Indicative budget and duration

16. The budget covering 4 years will be competitively determined – indicative costs are:

- (i) Technical inputs, data and field samples - \$2 million
- (ii) Government staff allowances - \$0.05 million; and
- (iii) Other costs - \$0.096 million.

B. Community Forest Delineation and Patrolling Contract

1. Introduction

17. This module will assist villagers to protect and patrol their agroforests land for a two-year time frame. It will be implemented by the Provinces / Districts with the support of the NPMO and GIC as per the procedures established under BCCP. During this time, the subproject will provide participating villages with: (i) field equipment necessary for patrolling; (ii) inform villagers of the legal basis behind patrolling; (iii) train villagers in a patrol system that includes apprehending those caught doing illegal activities and reporting events; and (iv) train villagers, and project staff in recording events by using the SMART patrolling database. As indicated above, emphasis will be placed on protection of the most densely stocked areas of forest within each village territory as these have the highest conservation value and also give rise to the greatest level of emissions of CO₂ if they are felled. Some villages may also take the opportunity to patrol their conservation forest, especially if it is in close proximity to the agroforests.

2. Rationale

18. Communities in the AF pilot investment program will need to pay an increased role in the protection and surveillance of forest use to avoid the impacts of degradation simply moving to other areas. The contracted service provider will work with participating villages to plan, and implement forest demarcation and surveillance by patrolling systems.

3. Scope

19. The scope of the works will be defined by the number of participating villages, the module will provide an initial patrolling establishment phase and then provide a one year monitoring of patrolling activities and their success.

4. Outputs

20. After two years, for each participating village that had not previously patrolled, that village would show a 50% reduced incidence of illegal activities on their land.

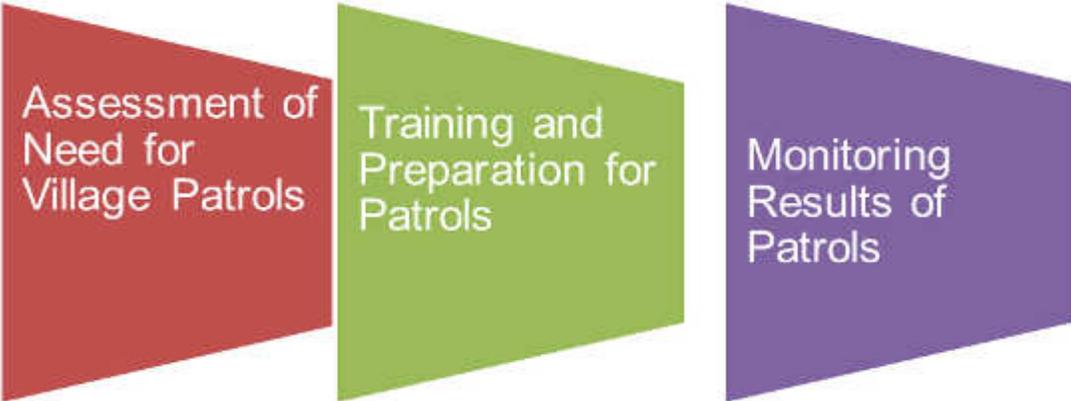
21. Each participating village will:

- (i) complete at least weekly patrols of their land for two years;
- (ii) provide a monitoring and data record of patrols and their findings; and
- (iii) for villages that have previously had patrols, the reduction rate of illegal activities will be smaller.

5. Tasks and Activities

22. The major tasks for implementing the subproject after it is identified in the village carbon assessment are presented in Figure 2.

Figure 2: Tasks for Implementation of Patrolling



a. Task 1: Assessment of Need for Village Patrols

23. The village assessment for carbon drivers undertaken by AF support will also include, for each village that participate in the agroforestry subproject, a rapid assessment of the potential for illegal activities on village land. This assessment will estimate, where possible, the number of illegal incidents on village land in each of the previous two years, if known. The rapid assessment will look at the location of agroforestry and any other village forest that might be eligible for protection and patrolling. The output of this task will be a protection and patrolling plan that is agreed with the village.

b. Task 2: Training and Preparation for Village Patrols

24. Task 2 involves training for participating villages on (i) the legal basis for protection and patrols - what can village patrols do legally; (ii) effective patrolling in the field; (iii) apprehending those caught doing illegal activities; (iii) recording and reporting on illegal events. Training sessions will be "learn by doing" wherever possible. Each participating village will send between 10 - 20 people to each training session.

25. The Subproject will train DoNRE and PoNRE government staff in the operation of the SMART patrolling database and information management system. IN addition the subproject will supply field equipment for the participating villages' patrol teams. This will be the same type of field equipment that the BCC project previously purchased for village patrols.

c. Task 3: Monitoring Results

26. Task 3 will establish a consistent approach for recording and storing information from the protection and patrolling activities. This will be done by using the SMART patrolling data base. Illegal incidents will be logged in this system, and whether they were resolved or remain open. Patrol routes completed on each village land will be recorded. Each participating village will use the same templates developed on the SMART system.

6. Implementation

27. The program will be implemented by the provinces/districts with the support of NPMO and GIC based on the experience in community patrolling systems including their design, training, implementation mentoring, and monitoring of impacts gathered under BCCP. The contract will cover all participating villages with protection and patrolling. The service provider will supply equipment, training, a monitoring and reporting system, and periodic measurement of inputs against results.

7. Indicative Budget and duration

28. An estimated indicative budget of \$10,000 per participating village over a 2 year period that includes the field payments for community members completing patrols, local transport, and technical expertise for the design and training inputs.

C. Large-Scale Afforestation Possibly in Joint Venture Contract

1. Introduction

29. After the village level carbon assessments are completed, the village assessment team will assess potential areas for larger scale afforestation. This will be done using remote sensing technology supplemented by ground truthing. Locations to be assessed will be mainly in catchments in the two AF districts. Forests will be assessed as to their proximity to shifting cultivation (if closer than 5kms, then afforestation will not proceed in that location); the ability of a replanted forest to provide other services, such as less soil erosion; the ability of the afforestation contractor to manage a new forest in a given location for four years after replanting.

30. After assessing locations, this module will support: (i) advise on approaches to large-scale afforestation – i.e., full replanting (mainly on land that is severely degraded), enhancing an existing forest with partial replanting, or natural regeneration; (ii) purchase of required seedlings and other material necessary for the replanting; (iii) training of contract labor, including from the villages, in replanting techniques, maintenance techniques, and in protection, especially from farm animals. This will be done in collaboration with the afforestation contractor.

2. Scope

31. In addition to completing site assessments and plans, the province/district with the support of the NPMO and GIC will work through options and recommend approaches to larger scale afforestation - full replanting (mainly on land that is severely degraded), enhancing an existing forest with partial replanting, or natural regeneration. The AF will support the purchase of required seedlings and other materials necessary for the replanting. The subproject, through the afforestation contractor, will train contract labor, including from the villages, in replanting techniques, maintenance techniques, and in protection, especially from farm animals. Contract labor for afforestation could include labor from villages.

3. Output

32. After four years, each participating district will plant or enhanced an area about 500 ha in natural forest. For each area the project will:

- (i) Prepare a planting plan;
- (ii) Provide a forest Management guideline for each planted area;
- (iii) Prepare contracts and or memorandum of understanding between third parties and community and owners;
- (iv) Deliver training in planting and maintenance of forest planting areas;
- (v) Provide reports on planting and also annual monitoring of planting areas for the first 2 years.

4. Task and Activities

33. The major tasks for implementing the large-scale afforestation subproject are presented in Figure 4.

Figure 3: Large Scale Afforestation

a. Task 1: Assessment of Location and Approach to Large-Scale Afforestation

34. The assessment will estimate, where possible, the area and location of land for reforestation. This could include full replanting (mainly on land that is severely degraded), enhancing an existing forest with partial replanting, or natural regeneration. Steep slope land that is within 5 km of shifting cultivation will not be eligible for replanting. The output of this task will be an afforestation plan that is agreed between DFRM and the districts.

b. Task 2: Fitting up a Joint Venture Deal for Afforestation

35. The task will seek out possible joint venture partners, such as established forestry companies, hydropower companies who have experience in afforestation, and mining companies that have experience in afforestation.

c. Task 3: Training Contract Labor and Preparation for Afforestation

36. The task will train contract labor to do land preparation, planting, weeding, and other necessary maintenance tasks that need to be achieved over a two-year period. This task will also purchase seedlings for the large-scale reforestation.

d. Task 4: Organizing and Supervising Planting

37. The task will organize the supervision of laborers during the replanting and maintenance activities.

e. Task 5: Monitoring and Reporting

38. The subproject will require the afforestation contractor to report not only on the area replanted or enhanced, but also on qualitative factors, such as the quality of the seedlings after each year.

5. Implementation

39. Implementation will be based on the expertise and experience in forest establishment and monitoring Gained from current BCCP activities and expanded with the assistance of JV partners in promoting sustainable large scale afforestation development.

6. Indicative Budget and duration

40. An indicative budget per 500 ha over a four year period is estimated to be \$500,000, which includes the assessment of sites, the packaging of joint venture deals, and the monitoring of planting areas.

D. Agroforestry – Cropping Subproject Contract

7. Introduction and rationale

41. During the village level carbon assessment, villages that contribute to carbon emissions from shifting cultivation will be assessed for alternative livelihood opportunities under the project. The process will involve exploring a series of technical options, starting with options that have a higher probability of success i.e., less risk to local farmers and households. Shifting cultivation is driven by the need to produce sufficient rice or an alternate product to get through lean periods or to purchase rice. Therefore the proposed alternative interventions must ensure that adequate rice is produced or sufficient output of another crop is produced to purchase rice for household food security.

42. The subproject is based on experience in Lao PDR of addressing shifting cultivation through the development of an agroforestry – cropping system based on alley cropping between economic trees. Agroforestry cropping systems (crops and trees), agro silviculture pastoral systems (crops, tree and livestock) and silvo-pasture (trees and livestock) have been shown to generate viable returns after a 3 year period (e.g., \$632/ha/yr in one case). Other developers are using similar models where two crops of rice are followed by a fallow /livestock year with similar outcomes. These developers work with villages to find suitable land for such systems and then work with government to obtain medium- to long-term (15 – 50 years) leases for the land. The village holds the rental agreement and the developer provides a payment equivalent to the land rent costs for the lease period to the Village Development Fund or similar structure. The project then supports villagers to establish the agroforestry plots and works through government extension services to improve crop production and livestock.

43. For AF villages with shifting cultivation the subproject will offer a similar process of identifying alternate land for the agri-silvi-pastoral development and if necessary provide the same rental incentive. Over the first year of tree establishment and cropping it is expected that shifting cultivation may continue however thereafter a community agreements to forego the shifting cultivation will be required. The lower boundary of existing shifting cultivation land would be planted in economic trees and the area of shifting cultivation will be planted in economic trees and an afforestation program. The area of the new agri-silvi-pastoral system will need to reflect the scale required to secure rice or its equivalent. Without the food security shifting cultivation will resume and may expand.

8. Output

44. Each participating village will replace the 50% of its crop output from shifting cultivation with production from an agroforestry system based on economic trees, crop production and livestock organized in alley cropping with a rotation of 1 crop of rice and two seasons of fallow/livestock production. For example a village of 170 households will produce at least 130 tonnes of rice per annum and graze up to 70 head of cattle on a total area of 170ha. In total there will be 160ha of forestry planting based on 120 ha of rehabilitated shifting cultivation land and 40 ha of planting within the agroforestry model.

45. The contractor will be responsible for producing the following at each village:

- (i) An assessment of shifting agriculture
- (ii) An agroforestry plan including areas to be developed and cropped
- (iii) Community agreement for the limitation of shifting cultivation
- (iv) Training of community members in agroforestry establishment and silviculture
- (v) Planted areas as per agreed agroforestry plan and for shifting cultivation areas
- (vi) Annual monitoring report for first 2 years

46. The scope of the contract will be defined by the number of villages that identify shifting cultivation as a major emission driver.

9. Task and Activities

47. The major tasks for implementing the subproject after it is identified in the village carbon assessment are presented in Figure 5.

Figure 4: Major Tasks



a. Task 1: Define Scope of Program

48. Once a village with shifting cultivation as a major priority during the village carbon assessment the agroforestry contractor team will be mobilized. The team will include (i) agroforestry expert – national, (ii) agroforestry international, (c) national agronomist –rice, (d) rural socio-economist and (e) soil scientist. The team will visit the village and undertake a planning process that encompasses both task 1 and task 2. For task one a land use and land quality survey of the land used for shifting cultivation will be completed to define annual use, crops produced and use of production including a food adequacy assessment. Households that use shifting cultivation will be identified and the last two years production cycle and land use defined along with productivity and use of output.

49. Based on the assessments of both the land and the household use of shifting cultivation an estimate of expected outputs required per unit area will be undertaken and the scale of potential agroforestry system estimated based on expected yields and number of households necessary to substitute for the production from shifting cultivation. The team will then assess alternative land available within the village land allocation and also within any government land within an accessible distance. The land availability and the estimate of productivity will be used to define the extent of the shifting cultivation substitution the pilot will target. Community meetings will be held to define which households will move off shifting cultivation.

50. The TA team will, in the situation that the land to be developed is Government land, negotiate a 15 year land use right for the community. Once an agreement is in place a community contract will be defined that commits the community to stop shifting cultivation on a predetermined area. Once signed, AF would deposit in the VDF an amount equivalent to the 15 year rent payment required.

51. The land use assessment of shifting cultivation will take the agronomist, agroforestry and soil scientist 3 days of field work and 1 day of consolidation of findings. The socio economist will identify households that engage in shifting cultivation and define the inputs and outputs that have been achieved over the last 2 to 3 seasons. A total of 5 days work is envisaged.

52. The identification of land for agroforestry will be undertaken by the agroforestry and soils specialists and is expected to require up to 3 days input from each person. The socio-economist and agroforestry expert will support community leaders to negotiate with Government over land use rights if required, if not the contractor will negotiate within the community. The task will be completed when a community contract is entered into committing the community and its membership to relinquish an agreed amount of shifting cultivation land in return for use rights over the agroforestry area and a program to rehabilitate the shifting cultivation area with economic and forestry trees. A total of 4 days will be required to complete such contracts.

b. Task 2: Agroforestry Development Plan

53. The forester and agronomist will work with the community members that will be assigned use rights to the agroforestry development. The meeting will define the physical layout, the planting plans and species of trees to be include in the planting alleys. The agronomist will define the cropping pattern and crop management program to support the required productivity levels. A government livestock specialist will define the fodder and fallow period for livestock production. The team will prepare a development plan with detailed activities that will be used to secure procurement of good and planting materials. The plan will be presented to community leaders for their ratification and planting material orders will be secured.

54. The team will also undertake an awareness and training program for households directly involved.

55. The forestry, agronomist, will input a total of 6 days per each for the planning and a further 3 days for training. The government livestock specialist will provide a total of 6 days input.

c. Task 3: Agroforestry Implementation Program

56. The forester and agronomist will oversee the planting and management program, labor will be provide on a paid basis with priority provided to (i) households that will have use rights, (ii) other community members, and (iii) casual labor. The planting and husbandry plans will be overseen by team members with input from government forestry, agronomy and livestock specialists over a 3 planting seasons.

57. Forestry, agronomy and livestock field days will be held each year during the growing season on at least 2 days with government technical expertise participating. Each participant will spend 8 days overseeing planting and a further 4 days for the farm demonstration days.

58. For budgeting a total area per year in agroforestry is 60ha of which 45ha is cropping and 15 ha is planted in trees for each of 3 years.

d. Task 4: Shifting Cultivation Rehabilitation

59. In the last two years the shifting cultivation area that is being retired will be demarcated with economic trees on the down-hill (community) side and the area planted in medium low density economic trees and afforestation programs. During year 2 the forestry expert will work with government expertise and local farmers to define an afforestation planting and silviculture management program. In the last year this area will be planted using community labor if available. Experts will provide awareness programs and training in management of these planted areas. The planting program will follow on from the agroforestry planting program in the last two years.

60. In year 2 the forestry expert will require 5 days. In year 3 and 4 the forestry expert will require 60 days input with an expected treatment area of 75 ha.

10. Implementation

61. The program will be implemented by a service provider that covers all agroforestry / shifting cultivation village programs. The team will need to work closely with Government technical experts. The service provider will supply agronomist, forestry expert, socio-economist, and soil expertise. Further input will be required from Government experts in agro-forestry, agronomy – rice.

11. Indicative Budget per village and Duration

62. An indicative budget of \$488,300 is estimated comprising of \$51,000 of professional time, \$7,500 of government staff allowances and \$429,800 for provisional amounts including materials. The contract duration will be 4 years.

E. Agroforestry – Cattle Grazing Subproject Contract

1. Introduction and Rationale

63. During the village level carbon assessment any villages that are identified as contributing to carbon emissions from forest degradation due to cattle grazing removing understory vegetation will be assessed for a range of potential subprojects linked to agro-silvi-pasture interventions. For cattle driven forest degradation the options are to move grazing lands, to adopt a cut and carry contained livestock sector, or to modify and intensify existing grazing lands. The lowest risk option will generally be the improvement of existing grazing lands followed by an option to move grazing to other improved areas. The interventions proposed need to ensure that they fit with livestock owner’s capability and perceptions regarding the role and management of livestock within the wider household livelihood strategy.

64. The indicative model is scoped based on the village profile data for the Dakcheung Village Dak Moung. The village has a total land area of 13,481 ha, that supports 48 households and a total population of 386. Currently 1,249ha approximately 10% of the total land area is used for grazing large livestock . As part of the Land Allocation and Land Use Planning project in 2012 the area allocated to large livestock was reduced to 768ha which is spread over 3 blocks of land.

Village Livestock Example

Type of Livestock	Number (head)	Price and income
Buffalo	40	3-5 million Kip/head (8 million kip for big and fat herd)
Cattle	45	2.5 -5 million Kip/head (6 million kip for big and fat herd)
Goat	30	0.3 – 0.8 million kip/head (1 million kip for big and healthy head)
Pig	50	0.5-1.2 million Kip /head (often dead by diseases)
Poultry	100	Often dead by diseases

2. Output

65. Each participating village will demonstrate the use of a agroforestry –pastoral model that seeks to protect forests from cattle degradation and improve the quality of livestock and livestock productivity.

66. For the indicative village of Dak Moung this will develop 230 ha (approximately 30%) of the land allocated to large animal grazing into agroforestry- pastoral systems. The area will support the majority of existing large livestock by year 3 (stocking rate 3 head per ha) enabling forest regeneration and also enabling the remaining grazing lands to become a grazing buffer for low productivity years due to drought. Tree productivity will provide up to 100kg/ha or 23 tonnes of fruit for home use or sale whilst wood offtake will be possible in the longer term.

67. The pilot will also rehabilitate grazing land reallocated to forest (indicative village is 480ha) through the replanting of appropriate forest species resulting in a long run gain in carbon storage.

68. The contractor will produce:

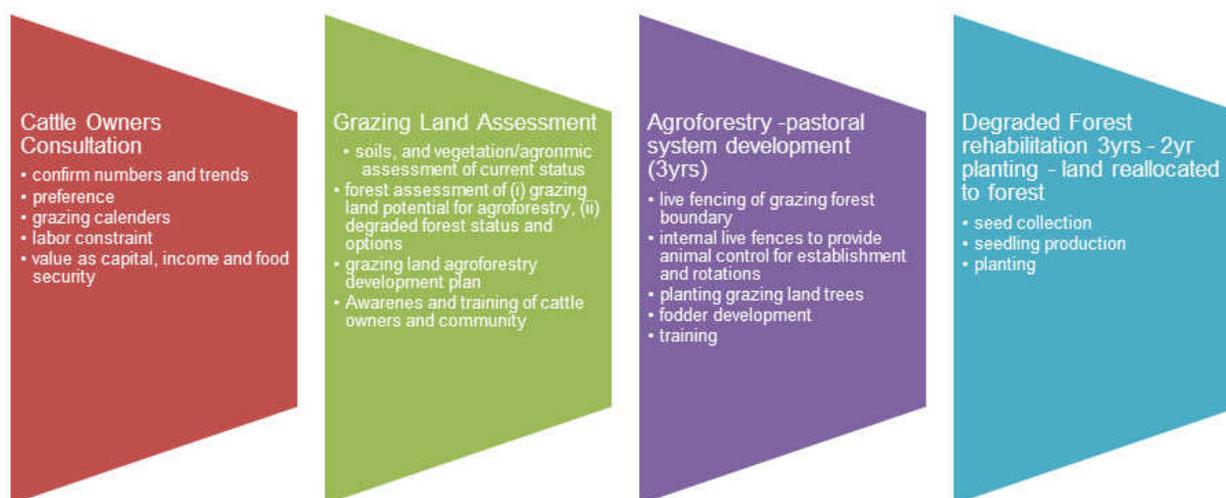
- (i) An agroforestry plan including areas to be developed and cropped;
- (ii) Community agreement for the limitation of shifting cultivation and animal grazing areas;

- (iii) Training of community members in agroforestry establishment and silviculture;
- (iv) Planted areas as per agreed agroforestry plan and for shifting cultivation areas; and
- (v) Annual monitoring report for first 2 years.

3. Task and Activities

69. The major tasks for implementing the subproject after it is identified in the village carbon assessment are presented in Figure 6.

Figure 5: Major Tasks



a. Task 1: Cattle owner consultation

70. Livestock and socio-economic experts will identify all cattle owners in the selected villages and conduct a rapid appraisal to confirm current numbers and livestock productivity and 5 year trends for both. Working with small group of cattle owners grazing calendars will be used to identify the cattle management systems being used, the reasons for these and the constraints with respect to labor, fodder and markets. The consultation will identify the role of cattle in household food security, livelihoods and as a risk mitigation and management asset. Cattle owners will be introduced to options for improving livestock productivity and for moving grazing into agroforestry systems that provide greater output while protecting forests. Owner preferences for such grazing systems will be identified and use to customize the proposed model where-ever possible. Two experts will require 4 days input for this exercise.

b. Task 2: Grazing Land Assessment

71. Land currently used for grazing as well as the areas within this that will support future grazing and land that will be rehabilitated into forest cover will identified and a field assessment undertaken to ascertain existing vegetation, soil condition, fertility etc. The assessment will involve soils experts and agronomic and livestock specialists. The agronomist will assess current vegetation, its condition and fodder crop options that match site conditions and livestock feed demands. The livestock expert will assess the condition of existing livestock, feed demand and how these are currently being met throughout the year. The livestock specialist will work closely with the agronomist to define future options. An agroforestry expert and government

forestry advisor will conduct assessments of the areas to be rehabilitated as well as the agroforestry planting areas and define options including cultivars, provenance, define planting models and management systems.

72. The soils, agronomic, and livestock specialists will require 5 field days and 2 days to consolidate findings, whilst the agroforestry expert and government forestry advisor will require a total of 7 days in the field and a further 2 days consolidating their findings. Detailed 3 year site development plans for the agroforestry area and for the rehabilitation of grazing land to forestry area will be the major output.

73. Annual site assessments will be completed by the agronomist and agroforestry experts requiring 2 days field work and 1 day office time.

c. Task 3: Agroforestry Implementation Program

74. The development work will be undertaken under the supervision of a national agronomist and agroforestry experts. Indicative treatment areas are shown in the following table:

Table : Grazing Areas Example Village

	Grazing block (ha's)	Proposed agroforestry target - 3 years	Live fences outer boundary	Live fence inner boundary
Block 1	500ha	150 ha	10km	14km
Block 2	180ha	50ha	3km	4km
Block 3	88ha	30ha	2km	2km
Total	768ha	230 ha	15km	20km

75. Agroforestry model will follow the site development plan in task 2, for the indicative subproject live fences involving 3 rows with a 1000 stems per kilometer will be established in two year for a total of 35km. The proposed agroforestry planting area will involve up to 390 stems per ha (to be determined in the planning phase) and will be planted over a three window at about 80ha per annum. All labor will be provided by the community and will be remunerated at 75% of the daily wage rate and agreed in advance. Understory and fodder vegetation planting will be done in conjunction with live fence and agroforestry planting.

76. Livestock will be excluded for 2 years unless vegetation requires control under which circumstances controlled livestock grazing will be used. Training during the planting will be provided to livestock owners on fodder management, tree management, and livestock management – a total of 2 days per each twice a year for 12 days pf training per annum.

77. All planting will be overseen by national agronomist and the agroforestry expert and will be supported by a government agronomist (30 days) and forestry expert (70 days). Training inputs will be 6 days per village for the agronomist, livestock, and agroforestry experts.

d. Task 4: Grazing Land Forest Rehabilitation

78. Land returning to forest use will be rehabilitated to accelerate potential carbon capture. All community members will be offered work paid at the daily wage for land preparation and planting of specified trees under the forest rehabilitation model. All planting and preparation will be supervised by a Government forestry advisor. Seeds and seedlings will be secured locally,

production of seedlings by AF is considered to be not possible given the time lines available. A total of 150 ha will be rehabilitated per year requiring a planting program of 2 months duration.

79. The agroforestry expert will provide 10 days input, the government forestry advisor will provide 70 days per year for 3 years.

4. Implementation

80. The program will be implemented by a service provider that covers all agroforestry / forest rehabilitation programs. The team will need to work closely with Government technical experts. The service provider will supply and international agroforestry expert, national agroforestry, agronomist, livestock, forestry, socio-economist, and soil expertise. Further input will be required from Government experts in forestry, livestock.

81. The contractor will work village by village based on the AF project Director instructions and will work closely with the carbon monitoring contractors.

5. Indicative budget and Duration

82. An indicative budget of \$946,800 is estimated comprising of \$48,900 of professional time, \$41,400 of government staff allowances and \$856,500 for provisional amounts including materials. The contract duration will be 4 years.

F. Carbonization of Non-Commercial Wood From Hydro-power Dam Sites to Charcoal Contract

1. Rationale

83. Removal of biomass from areas to be inundated by reservoirs for hydro-power or irrigation is essential to limit the production of methane and carbon dioxide from the anaerobic decomposition of the biomass after flooding. This decomposition also consumes dissolved oxygen in the water and renders it uninhabitable for fish. The MoNRE has produced detailed guidelines for the removal of biomass from reservoirs¹⁶ and most concessions for hydro-power development issued since 2010 have the requirement that the operator prepare and implement a Biomass Disposal Plan. However, to date biomass disposal has mainly consisted of removing commercial timber species, but leaving all branchwood behind, together with all non-commercial tree species and shrubs. This residual biomass can potentially be carbonized to produce charcoal as a domestic or commercial fuel. The same applies to the biomass from primary or secondary forest that is cleared for agriculture. Both of these options for sources of woody biomass provide potential benefits for local communities as a source of cash income from selling charcoal. In the future there is the possibility of producing biochar, which can be incorporated into the soil to improve its structure and lock up the carbon, but this is considered to be too speculative at this time, and there is no information on the value of possible gains in agricultural productivity compared with the costs of producing the biochar.

84. The traditional way of producing charcoal in Lao PDR is to dig a pit, fill it with wood and set fire to it, and then when well alight, cover it with earth to exclude air and leave it to “cook” or

¹⁶ Environmental Guidelines for Biomass Removal from Hydropower Reservoirs in Lao PDR, (2010), Strengthening Environmental Management Phase II (SEM II), Water Resources and Environment Administration. (now within MoNRE)/

pyrolyse for one to two days. This method is extremely inefficient with the yield of charcoal (which may be around 70% carbon) rarely exceeding 20% of the carbon in the feedstock. The process gives off a high proportion of a mixture of volatiles, which include the important GHGs, Methane, NO_x and Carbon dioxide, which various studies report to be between about 1 ton and 5 tons CO₂eq/ton charcoal produced due to the significant contribution from the potent non CO₂ GHGs, especially methane. With modern low cost appropriate technology these gases are captured and burnt to supply heat either to support the pyrolysis or for external use such as crop drying or even electricity generation and thus lead to a significant reduction in emissions, which then consist largely of water vapour and a reduced quantity of carbon dioxide. Thus emission reductions from making charcoal in retorts could amount to at least 0.5 tons CO₂eq per ton of charcoal produced however further additional emissions will be generated through the distribution of charcoal to end users and their subsequent burning of the charcoal.

85. There is a well-established market for charcoal in Lao PDR, both for domestic household and industrial (silicon manufacture) consumption and for export and traders and trucks returning empty to major cities, uplift it in bags at roadside for transport to markets.

86. During the village level carbon assessment a village with potential to produce charcoal from biomass residues, based on the quantities of biomass available and the physical conditions for harvesting it, and where a substantial proportion of the villagers express an interest in learning how to operate the technology, and produce charcoal, will be identified for undertaking pilot trials. The purpose of the trials will be to examine the technical and financial aspects of harvesting and preparing the raw material, to test the performance of the retorts and the quality of the product with different species for feedstock.

a. Feedstock and Output

87. Charcoal can be produced by pyrolysis in Adam retorts¹⁷ designed to fit existing rural village conditions and process the amounts and characteristics of available biomass. The retort is a batch feed, village-sized unit that can easily be duplicated and constructed for use in rural locations. Each batch load of the retort consists of about 3 cubic meters of waste biomass feedstock weighing about 1,300 kg when dried; this produces 400-450 kg of Charcoal. The total batch cycle (including loading, firing, cooling down and unloading) takes about 24 hours. About 200 batches/year can potentially be produced with each retort giving an annual yield of about 90 tons per retort requiring about 600 cubic meters of biomass residues. This quantity of biomass would come from 2-3 ha of primary forest or about 10 ha of secondary forest, and will need to be harvested and converted into suitable sized pieces for loading into the kiln. For charcoal pieces up to about 1 meter in length and 15cm in diameter are suitable, so that large logs will need to be cross-cut and split.

88. Each participating village would have at least one retort, depending on the level of interest and the available feedstock, which can either be operated by one household on a full-time basis or by several households taking turns. The current market value of charcoal for domestic consumption sold in 7kg bags at roadside in the BCC area is about LAK 8,000 (US\$1) per bag or around US\$140 per ton, so that if all charcoal produced is sold, annual income per retort is about US\$ 5,600 plus the value of the emission reductions.

¹⁷ Chanda Vongsombath, et.al. 2013. *Producing Biochar in Lao PDR to Reduce GHG Emissions from Hydropower Projects and Develop Sustainable Biochar Operations to Improve Village Livelihoods.*

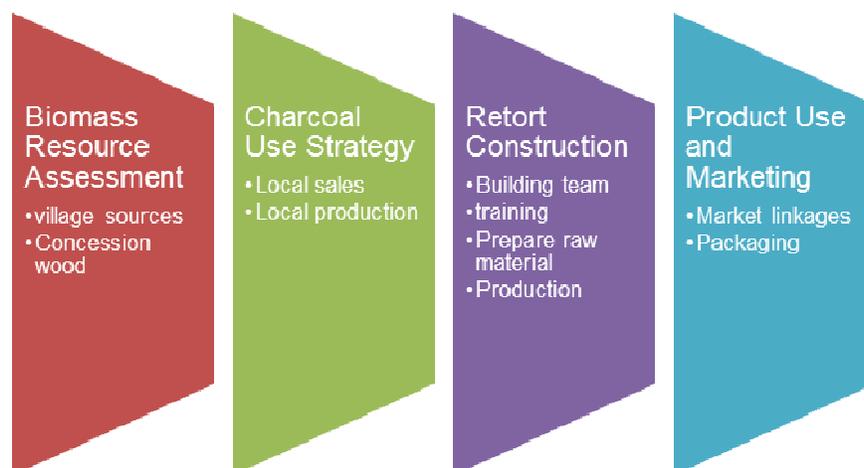
89. The estimated annual emissions reductions (at retort) of around 0.5 tons CO₂eq/ton of charcoal could amount to about 45 tons per retort. With a current market price (financial price) for carbon dioxide of around US\$4 per tonne, that gives a value of the emissions avoided of around US\$180 per retort.

90. Each retort requires 2 persons to operate for loading, unloading and monitoring. During the pyrolysis stage, which lasts for about 12 hours only occasional monitoring is required, and cooling is normally timed to take place overnight, so that the retort operators can engage in other activities for some of the time. The labour inputs for harvesting and preparation of the feedstock is more variable and is dependent on how far the material must be transported and how much work is needed to reduce it to suitable dimensions for the retort. It is expected that trees of suitable dimensions will be de-branched at stump, and then dragged by buffalo to the retort site. The tree stems will then be cross-cut into logs of appropriate length for the retort. The harvesting of the 600 cubic metres required by each retort will require two persons, and should be done during the dry season, when labour is not required for tending crops. Hence each retort will provide employment for four persons at an annual cost of around US\$2,400, assuming a daily wage of US\$3 and should produce a net profit for the operators.

2. Task and Activities

91. The major tasks for implementing the subproject after it is identified in the village assessment are presented in Figure 7.

Figure 7: Major Tasks



a. Task 1: Biomass Resource Assessment

92. The biomass resource assessment will adopt a high level assessment based on aggregate land use within the village lands and a more detailed inventory of available wood either in the area expected to be inundated by a reservoir or in secondary forest that is expected to be cleared for cropping.

93. The wood inventory of land to be inundated or to be cleared for agriculture would be supported by a trained forest inventory expert with a Government Forest inventory specialist and 2 field assistants for measuring sample plots. Temporary sample plots would be established at randomly selected sites and the wood volumes measured. The plots would then be linked to satellite imagery for defining aggregate resources in the total village territory. In total the two experts and two field assistants will require up to 5 days of field work and 2 days of data analysis and a further day for reporting to the community and the agronomy team.

b. Task 2: Charcoal Use Options and Strategy

94. The charcoal use options will be derived from an analysis of current domestic energy use and a market survey in urban and rural villages that do not have access to charcoal locally. This will include opportunities for export to Vietnam.

c. Task 3: Retort Construction and Operation

95. It is proposed that the concession areas would be supplied with a number (possibly 3) of Adam Retorts that are made of brick and steel ventilation pipes. The plans for the retort can be purchased for around \$500 and local construction would be supervised by a biochar expert. The total cost of each retort would be up to \$1500 each. Each production cycle would require a total of 750 kg of wood (fresh weight) from which an out turn of 150 kg of biochar is expected.

96. Operational training will be provided and the first 2 production cycles from each retort would be supervised and mentored. Total input for this would amount 20 days for 2 people.

3. Implementation

97. The program will be implemented by a service provider that covers all charcoal subprojects. The service provider will supply charcoal making technology and expertise, forest inventory expertise, and marketing skills.

4. Indicative budget and Duration

98. For each participating village the professional fees are estimated as \$21,000 with a further \$26,000 for provisional amounts to cover technology and training costs. The contract duration would be approximately 1 year.

ECONOMIC AND FINANCIAL ANALYSIS

A. Introduction

1. The Forest Investment Program Additional Financing (AF) grant is designed to complement the four components of the Biodiversity Conservation Corridor (BCC) Project including: (i) institutional and community strengthening at village, district and provincial level; (ii) biodiversity corridor restoration and ecosystem services protection through improved forest patrols and reduced emissions from deforestation and forest degradation (REDD+); (iii) livelihood improvement for communities within the corridor through support for improved agricultural systems that reduce the need for slash-and-burn agricultural systems; and (iv) project management and support services.

2. The Additional Financing is expected to produce the following benefits:

- A net reduction in emission of carbon dioxide (CO₂), on average, in the amount of 97,000 tons per annum for a period of 30 years, by undertaking several interventions that serve as drivers of change of deforestation and forest degradation. These include: (i) agroforestry with livestock support; (ii) agroforestry with crop support; (iii) carbonization of non-commercial wood into charcoal; (iv) afforestation and forest rehabilitation; and (v) forest protection and patrolling.
- About 420 households (1,600 individuals) in 5 Kum Bans (equivalent to village clusters or districts) will benefit directly from the support for more productive and sustainable agricultural systems, including improved livestock systems, perennial crop production, and non-timber forest products (NTFPs). They will benefit from enhanced sustainable sources of income from their agricultural, livestock rearing and forestry related activities as a result of the direct technical support provided. Other village households, although not direct beneficiaries, will benefit from the flow-on effect of observing these activities.
- Direct financial benefits to targeted communities in the form of incremental employment creation, estimated to be 160,000 labor days, for households and local communities from proposed investments in forest protection by patrolling (an estimated area of 50,115 ha), and reforestation (an estimated area of 350 ha), agroforestry combined with crops and livestock management (an estimated area of 1,100 ha).
- In addition, downstream communities are expected to benefit from enhanced ecosystem services generated through the actions of the direct beneficiaries. In particular, enhanced quality and quantity of water from the targeted forest areas over time will benefit downstream users. This will enable them to increase productivity and avoid some of the costs currently incurred as a result of the irregular flow and polluted nature of the water supply.

3. The financial analysis of interventions at the village level will be conducted during implementation. Financial analysis at the design stage is limited to a cost effectiveness of undertaking recurrent expenditure associated with the project investment, the key expenditure being the recurrent cost of patrolling and maintaining the replanted areas. The cost is estimated at \$0.24 million per year in financial prices and is expected to reduce as trees reach canopy closure. Financial sustainability is assured through legislation by provincial governments on

biodiversity conservation corridor management which governs the allocation of resources as noted in para. 21 below.

4. The current economic analysis attempts to provide a preliminary analysis on the viability of the proposed interventions based on the net reduction of CO₂ emissions induced by the AF interventions as described in para. 2 above. Specific investments or clusters of investment will be identified at the detailed design stage. Individual investments will be selected based on a set of criteria, which include financial viability parameters. The household income and financial analysis will be conducted as part of the detailed feasibility of individual investments to be conducted during project implementation.

B. Economic Analysis of CO₂ Emission Reduction

1. Current Situation

5. The total forest area in Lao PDR has steadily declined from around 70% of total land area in 1940 to around 40% or about 9.5 million ha in 2010. This, coupled with increasing fragmentation of forest areas and a decline in the average growing stock within the residual forest, has reduced the carbon sequestration capacity and resulted in a decline in biodiversity. The pattern of utilization of Lao PDR's forest resources has been influenced by population and economic growth, not only within the country, but also of the neighboring countries. To some extent, these neighboring countries have been able to restore their own forest cover by displacing the pressure on forests of Lao PDR.¹

6. The provinces of Attapeu and Sekong (i.e., the Project area) contain about 1.7 million ha of forest, the equivalent of 18% of the country's total forest area. Much of the forest in these two provinces is located in upland areas characterized by elevations of above 200 meters above sea level (m.a.s.l.) and mountainous terrain with steep slopes. Across the country, upland areas account for 25% of the population and 39% of the poor.² Upland communities depend largely on natural resources and agriculture for livelihoods³ where agriculture is primarily by smallholders practicing rotational cropping. Attapeu and Sekong are also amongst the provinces that have the highest levels of income disparity between upland and other districts (footnote 3).

7. The main drivers of deforestation and forest degradation in the Project areas have been small-scale forest clearance by local communities for rotational agricultural cropping, and to a lesser extent, by small/medium entrepreneurs for commercial crops such as coffee. Most of the biomass from cleared lands is disposed of by burning, resulting in large CO₂ emissions.

2. Addressing Key Drivers of Deforestation and Forest Degradation

8. The Project includes a number of modules aimed at addressing the drivers of deforestation and forest degradation. These include: (i) agroforestry with livestock support; (ii) agroforestry with crop support; (iii) carbonization of non-commercial wood for charcoal production; (iv) afforestation and forest rehabilitation; and (v) forest protection and patrolling. Support in monitoring of carbon stocks and water quality will also be included in the project to

¹ Meyfroidt, P. and E.F. Lambin. 2009. *Forest Transition in Viet Nam and Displacement of Deforestation Abroad*, *PNAS Early Edition*. www.pnas.org/cgi/content/full/0904942106/DCSupplemental.

² Government of Lao PDR. 2011. *Draft Upland Development Strategy for Agriculture and Rural Development 2015 – 2020*. Vientiane.

³ P. Messerli et al, eds. 2008. *Socio-Economic Atlas of the Lao PDR – an Analysis based on the 2005 Population and Housing Census*. Swiss National Center of Competence in Research North-South, University of Bern, Bern and Vientiane: Geographica Bernensia.

serve as an monitoring and evaluation tool for the project in the short term and more importantly benefit long-term national implementation of REDD+ investment planning.⁴ The appropriate modules for each village cluster will be decided through a consultative process backed by assessments and will be based on the village land use plans. Each module is briefly described in subsequent paragraphs.⁵

9. **Agroforestry with livestock support.** Application of this module will demonstrate the use of an agroforestry – pastoral system that seeks to reduce forest degradation due to free range livestock grazing and improve the management of livestock and livestock productivity. The module will also rehabilitate grazing land reallocated to forest through the planting of appropriate multipurpose species that will provide fodder as well soil improvement through nitrogen fixation and a long run gain in carbon storage. The module will involve: (i) consultation with livestock owners and others interested in participating; (ii) assessment of grazing land; (iii) site development and training; and (iv) reforestation of former grazing lands.

10. **Agroforestry with crop support.** The module will demonstrate the use of an agroforestry – crop intensification system that seeks to restore soil fertility in areas used for rotational agriculture, especially on steep slopes. Each participating village will replace the 50% of its crop output from rotational agriculture with production from a agroforestry system based on economic multipurpose trees that provide fruit, fodder and fuel wood as well as soil stabilization and fertility restoration, together with crop production and livestock organized in alley cropping with a rotation of 1 crop of rice and two seasons of fallow/livestock. The module will involve: (i) a land use and land quality survey of the land used for rotational agriculture based on consultations with households that use rotational agriculture; (ii) preparation of an agroforestry development plan; (iii) implementation of agroforestry development plan; and (iv) rehabilitation of former rotational agriculture lands.

11. **Carbonization of non-commercial wood for charcoal production.** Non-commercial wood in hydropower and other land concession areas is often flooded by the reservoir or burnt prior to land preparation, resulting in increased carbon emissions. These noncommercial wood resources represent a potential opportunity to local communities with the added benefit of reducing carbon emissions by transforming such non-commercial wood into charcoal as a domestic or commercial fuel. The same applies to the biomass from primary or secondary forest that is cleared for agriculture. Both of these options for sources of woody biomass provide potential benefits for local communities as a source of cash income from selling charcoal. In the future there is the possibility of producing biochar, which can be incorporated into the soil to improve its structure and lock up the carbon. This module will involve: (i) a biomass resource assessment; (ii) identification of charcoal use options and strategy; (iii) retort construction and operation; and (iv) charcoal use and marketing.

12. **Afforestation and forest rehabilitation.** The module will support afforestation (mainly on land that is severely degraded), enrichment planting or assisted natural regeneration of degraded village forests. The module will cover support for village forests as well as other large forests. The activity will depend on the village agreeing to manage newly enriched forests and

⁴ Monitoring of carbon stocks: The scope includes monitoring carbon stocks to demonstrate carbon-based benefits from the project investments. Activities include: (i) establishing a carbon baseline (possibly to the standards required under the Verified Carbon Standard (VCS) for possible carbon trades); (ii) monitoring changes in carbon inventory and emission levels; (iii) an impact evaluation of each hotspot; and (iv) preparation of two carbon reports – one for each district – which includes an assessment of the potential for monetizing the project benefits through REDD+ or the voluntary carbon market.

⁵ Detailed descriptions of each module are available upon request.

other forest areas under their control. The module will involve: (i) a needs assessment which will also include assessment of the potential for large-scale afforestation; (ii) training and preparation for forest enhancement; (iii) implementation of afforestation or rehabilitation; and (iv) monitoring and evaluation. In the case of large-scale forests, the module will also involve arrangements with joint venture partner such as a hydropower operator.

13. **Forest Protection.** This module will assist villagers to protect and patrol their areas of forest with high carbon stocks and other economic land, and where required, village forest land. The module will involve: (i) needs assessment for village patrols; (ii) training and preparation of patrol teams; and (iii) monitoring and evaluation.

3. Assumptions

14. The main assumptions for the economic analysis of CO₂ emission reduction include:

- The project life is 30 years including a four-year project implementation period.
- Carbon sequestration reaches a steady state 10 years after the start of project implementation and is expected to continue beyond the project life. However, the discounted value beyond 30 years will have little, if any, impact on the project's economic viability.
- Forest rehabilitation and protection is based on participation of the local community in both protection and reforestation with payment from the project for that work. These costs are a financial benefit to the community but an economic cost to the project.
- Labor inputs provided by the households are charged at the market rate adjusted by the appropriate shadow wage rate factors (SWRF).
- The main output value included the value of the carbon sequestered by the protected and rehabilitated forest, with a value of \$10 per ton of CO₂ equivalent.
- All values are expressed in constant 2015 prices.
- All costs and benefits are expressed in the *world price level numeraire*. For non-traded goods and services, a standard conversion factor (SCF) of 0.9 is used for conversion of financial to economic values. For rural labor, a shadow wage rate factor (SWRF) of 0.81 is applied, except for patrolling activities an SWRF of 0.9 is used since the willingness to undertake the patrolling labor is limited (as per the results of stakeholder consultation).
- Taxes and duties are excluded from the economic prices.
- A discount rate of 12 percent is used as representing the opportunity cost of capital.

4. Economic Costs

15. The estimated cost of proposed interventions is \$12.84 million in financial prices and \$11.37 million in economic prices. Table 1 outlines the financial and economic cost profile. It is important to note that the economic analysis includes all costs presented in Table 1, except for (i) carbon monitoring and (ii) capacity building and implementation support, from which only 50% and 10% of the line item costs are respectively used. Therefore, in effect total economic costs to be included in the economic internal rate of return (EIRR) estimation is \$6.98 million. The key reason for this prorated cost inclusion of these two cost items is to ensure that the

economic cost stream only carries those costs that are directly attributable to attaining corresponding benefits. Moreover, a large part of these costs is for capacity development, the benefits of which are not readily quantifiable. Annual operations and maintenance (O&M) cost is estimated at \$0.24 million in financial prices and \$0.21 million in economic prices, based on an estimated 3% of direct investment (financial) cost and its economic cost equivalents.

Table 1: Economic Costs

Items	Financial Budget (\$'000)			Economic Budget (\$'000)					Economic Cost for EIRR Estimation
	Total budget	Rural Labor Component	Non-labor Component	Total budget	Rural Labor Component	SWRF	Non-labor Component	SCF	
Carbon monitoring	2,092.3	418.5	1,673.8	1,845.4	339.0	0.81	1,506.4	0.90	922.7
Planning, boundaries & UXO	441.3	88.3	353.0	389.2	71.5	0.81	317.7	0.90	389.2
Agroforestry and cropping	1,534.9	460.5	1,074.5	1,340.0	373.0	0.81	967.0	0.90	1,340.0
Agroforestry and livestock	2,308.7	692.6	1,616.1	2,015.5	561.0	0.81	1,454.5	0.90	2,015.5
Large-scale afforestation	585.4	292.7	292.7	500.5	237.1	0.81	263.4	0.90	500.5
Community afforestation	154.5	77.3	77.3	132.1	62.6	0.81	69.5	0.90	132.1
Charcoal production	78.0	31.2	46.8	67.4	25.3	0.81	42.1	0.90	67.4
Patrolling	1,375.1	825.1	550.0	1,237.6	742.6	0.90	495.0	0.90	1,237.6
Capacity building and implementation	4,277.5	0.0	4,277.5	3,849.8	0.0	0.90	3,849.8	0.90	376.0
Total Investment	12,847.8	2,886.1	9,961.8	11,377.5	2,412.0		8,965.6		6,981.1

5. Economic Benefits

16. **Quantified Benefits.** The main benefits will be carbon sequestration and climate change mitigation. The current economic analysis quantifies only the benefits from reduced emissions. The other economic benefits, mainly agricultural productivity attributable directly and indirectly to the project interventions, are not readily quantifiable at this stage and will be conducted when specific investments activities are well defined during the project implementation. It is estimated that proposed interventions to address deforestation and forest degradation will generate a net reduction in CO₂ emission of approximately 97,000 ton per year. Using the assumed economic price of \$10 per ton of CO₂, the benefits will be, on average, \$0.97 million per year for the first ten-year period, and \$1.44 million per annum for the thirty-year period. Summary annual CO₂ emission⁶ is outlined in Table 2 and the estimate benefit stream is in Table 3.

17. With regard to the economic value of carbon, in many recent studies the economic value of carbon has been assumed to be its market price as reflected in the well-established carbon markets of Europe. However, recent turmoil in these markets, caused by a combination of the economic downturn and distortions that are built into the markets suggest that the economic value of carbon sequestration is more complex than the simple market price. According to a World Bank study, the price of reducing global warming to within 2°C in 2030 is estimated to be between US\$80/tCO₂ equivalent and US\$120 tCO₂ equivalent.⁷ Nocera and Cavallaro (2012) compared various alternative approaches for estimating the economic value of CO₂ emission reductions including CO₂ market-based prices, and prices based on future consequences through the assessment of either damage costs or avoidance costs.⁸ They concluded that the use of market prices is unsuitable unless very short temporal horizons are being considered since they fail to take account of long-term impacts. Damage cost and avoidance cost approaches provide a more theoretically sound approach and have been used in a range of

⁶ Detailed estimates for CO₂ emission reduction is in the Annex to this document.

⁷ World Bank and Ecofys, 2015. State and Trends of Carbon Pricing. Washington D. C.

⁸ Nocera, S. and F. Cavallaro. 2012. *Economic Evaluation of Future Carbon Dioxide Impacts from Italian Highways*. EWGT 2012 15th Edition of the Euro Working Group on Transportation, International Science Conference, Paris.

studies. However, both tend to produce a wide range of estimated values, albeit with a lower bound value of about \$20 per ton of CO₂ equivalent. Therefore for the current analysis, the economic value of CO₂ is taken at a conservative value of just 50% of this lower bound, i.e., \$10 per ton.

Table 2: Annual CO₂ Emission Reduction

Years after project commences	Reforestation (planned - 350ha) [1]	Agroforestry (planned - 1100ha) [2]	Avoided deforestation & degradation from protecting existing forests[3]	Avoided deforestation from growth of trees in primary and secondary forests [4]	Avoided shifting cultivation [5]	Total annual emission reductions [6]
1	410	190	9,383	91	441	10,516
2	1,797	1,100	18,767	182	1,685	23,531
3	4,727	3,696	28,150	273	2,778	39,626
4	9,544	9,726	37,534	365	3,811	60,979
5	15,653	18,126	46,917	456	4,810	85,962
6	22,022	27,588	56,301	547	5,787	112,244
7	28,001	36,653	65,684	638	6,750	137,726
8	34,642	40,671	75,067	729	7,703	158,812
9	41,110	34,614	84,451	820	8,647	169,642
10	48,548	18,671	93,834	912	9,584	171,549
Total	206,455	191,036	516,088	5,014	51,996	970,588

Source: Asian Development Bank estimates.

18. **Unquantified Benefits.** A number of additional benefits are also attributable to the proposed interventions however have not been quantified. First, the incremental gains from improved farming and livestock rearing practices will benefit approximately 420 households (1,600 individuals). Non-timber forest products (NTFP) through reforestation activities may include bamboo, rattan, fruit and resins. Other products, such as fuel wood and medicines may not be marketed, but will be used by local communities directly and can therefore be priced at the market value for the product that they substitute. However, their total value is likely to be small in comparison with carbon sequestration benefits unless some specific subprojects are included for promoting NTFPs. They have therefore been excluded from the current estimates. Second, biodiversity values may be significant. These can be expressed in a number of ways, including reduction in the numbers of endangered species, the levels of threat to important species and possibly the return of species thought to have been locally extinct. In the longer term, these achievements may increase the value of ecotourism which will bring financial returns, as will the possibility of bio-prospecting. Third, soil and water conservation values. These are site specific, since they depend on the proportion of an upper river basin that is protected from soil erosion and the current land-use, which determine both the quantity of the soil loss that can be avoided and the scale of the overall impact on the seasonal distribution, quality and quantity of water supply within the river basin.

6. Estimated EIRR and Sensitivity Analysis

19. Estimation of the EIRR and economic net present value (ENPV) is shown in Table 3. The proposed investments in addressing the five key drivers of deforestation and forest degradation are assessed to be economically viable with an EIRR of 15.1%.

20. Sensitivity analyses were conducted to test the robustness of the proposed investment. Tested variables include (i) a 10% cost increase; (ii) a 10% benefit reduction; (iii) a 10% cost increase combined with a 10% benefit reductions; and (iv) a one-year lag in benefits. The results of the sensitivity analyses are also in Table 3. Switching values and sensitivity indexes were also estimated for the key variables. The investment remains economically viable when costs are increased 10% or revenues decreased by 10%, when both of these changes are combined, or with a one-year benefit lag. In particular, EIRRs of the tested sensitive cases are in the range of 12.8-14.3%, above the threshold of 12%. However, the switching values indicate that a 29.0% cost increase or a 22.5% benefit decrease would affect the economic viability of the proposed investments. The sensitivity indexes— 3.4 for cost increases and 4.4 for benefit reduction—suggest that while the proposed investments are fairly robust, the risk of ENPV being reduced to zero or negative is high unless cost efficiency and timely benefit realization are under close monitoring.

Table 3: Estimated EIRR and Sensitivity Analysis

Base Case Analysis						Net Cash Flows in Sensitive Cases				
Year	Costs			Benefits	Net Cash Flow	10% cost increase (1)	10% benefit reduction (1) and (2)	combined	1 year benefit lag	
	Investment	O&M	Total							
2016	0.70	0.00	0.70	0.00	(0.70)	-0.77	-0.70	-0.77	-0.70	-0.70
2017	2.09	0.00	2.09	0.11	(1.99)	-2.20	-2.00	-2.21	-2.09	-2.09
2018	2.79	0.00	2.79	0.24	(2.56)	-2.84	-2.58	-2.86	-2.69	-2.69
2019	1.40	0.00	1.40	0.40	(1.00)	-1.14	-1.04	-1.18	-1.16	-1.16
2020	0.00	0.00	0.00	0.61	0.61	0.61	0.55	0.55	0.40	0.40
2021	0.00	0.21	0.21	0.86	0.65	0.63	0.56	0.54	0.40	0.40
2022	0.00	0.21	0.21	1.12	0.91	0.89	0.80	0.78	0.65	0.65
2023	0.00	0.21	0.21	1.38	1.17	1.15	1.03	1.01	0.91	0.91
2024	0.00	0.21	0.21	1.59	1.38	1.36	1.22	1.20	1.17	1.17
2025	0.00	0.21	0.21	1.70	1.49	1.47	1.32	1.30	1.38	1.38
2026	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.49	1.49
2027	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2028	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2029	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2030	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2031	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2032	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2033	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2034	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2035	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2036	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2037	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2038	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2039	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2040	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2041	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2042	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2043	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2044	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
2045	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	1.51
ENPV	5.17	0.93	6.10	7.59	1.49	0.88	0.73	0.12	0.63	0.63
EIRR					15.1%	13.7%	13.6%	12.2%	13.2%	13.2%
						SV	24.5%	19.7%	EIRR reduced by	
						SI	4.1	5.1	18.9%	12.4%

EIRR = economic internal rate of return; ENPV = economic net present value; SI = sensitivity indicator; and SV = switching value.

Source: Asian Development Bank estimates.

7. Sustainability Issue

21. Patrolling of the protected forests and maintenance of the replanted areas for the first five years will require ongoing expenditure if the investment is to be sustainable. Responsibility for ensuring that these activities are undertaken, including provision of the necessary finances, will rest with the local government, at provincial, district or Kum Ban level. The costs have been

estimated at about \$0.24 million per annum in financial prices although they are likely to reduce slightly once trees reach canopy closure. Discussions with the operators of the hydro-power plants in the project area indicate that protection and restoration of forest cover in the water catchments would bring substantial benefits in terms of reduced siltation of the reservoirs and damage to turbine blades from suspended solids in the water.

22. Sustainability of project interventions is further assured by Regulations on Biodiversity Conservation Corridor Management approved by provincial governors of Champasak, Attapeu and Sekong Provinces. These regulations govern the utilization of resources to minimize damage to natural ecosystems, habitat and endangered species. Furthermore the regulations encourage participation of villagers in conservation activities and enforcement of biodiversity conservation corridor regulations. It is expected that provincial governments will seek to secure payments for ecosystem services (PES) which are expected to be sufficient to cover the on-going O&M costs.

ANNEX: EMISSION REDUCTION CALCULATIONS

1. **General considerations.** The estimation of the changes in emissions of CO₂ resulting from the interventions by the project takes account of the following:

- Reduced emissions from forest that would have been cleared without the project, but remains as forest as a result of the project interventions.
- Reduced emissions from forest that would have been degraded, primarily caused by uncontrolled or illegal logging, grazing and wildfire as a result of the project intervention to improve protection.
- Sequestration of CO₂ by the forest that would have been cleared or degraded without the project, through growth of the trees in the forest that now remains.
- Sequestration of CO₂ by trees in plantations and agroforestry systems established to restore forest cover and other purposes.
- The type of forest that would have been cleared without the project and the corresponding carbon stocks.

2. The amount by which emissions are reduced and the rate of sequestration is calculated based on the best available information on the forest types and conditions within the area that the project will influence. Data is available on average carbon stocks for the main natural forest types found in Lao PDR, that cover Evergreen, Mixed Deciduous, Dry Dipterocarp, Coniferous forest and secondary forest following shifting cultivation according to the number of years of re-growth. The carbon stock for the natural forest areas is based on about 47,000 temporary sample plots measured by Sustainable Forestry for Rural Development (SUFORD) Project in Production Forest Areas covering the first three forest types plus plots established by the National Forest Inventory (Table A.1). This data shows that the average volume per ha declines very sharply with reducing crown closure and that most of the forest appears to be in the medium crown density class, while the areas classed as “potential forest” with <20% crown cover have very low volumes and hence carbon stocks and about 50% of the plots (although within production forest) were bare. The plots have been stratified for each forest type into carbon stock density classes that correspond roughly with crown cover density, although no precise measurements have been made of the correlation between crown density and carbon stock.

Table A.1: Growing Stock in Different Forest Types According to Crown Closure, based on Data from 47,000 Sample Plots Measured by the SUFORD Project

	Mixed Deciduous Forest		Dry Dipterocarp		Dry Evergreen	
	Vol./ha	No. plots	Vol./ha	No. plots	Vol./ha	No. plots
Crown closure >70%	208.0	3,504	178.0	174	171.7	275
Crown closure 40-70%	58.8	5,191	51.3	704	58.1	679
Crown closure 20-40%	18.9	3,307	18.6	614	20.4	356
Crown closure 10-20%	4.2	5,211	5.2	355	5.1	109
Bare		26,459		208		15
		43,672		2,055		1,434

Source: Feasibility Study Report by TA-7459 REG – GMS Biodiversity Conservation Corridors Project – FIP Component, November 2013.

3. The carbon stocks, and hence the emissions that would result from liquidating the forest are calculated from the timber volumes using the conversion factors given in Table A.2. These are the same conversion factors that are used in the national emission estimates.

Table A.2: Conversion Factors from Tree Volume to Biomass, Carbon and Carbon Dioxide

CONVERSION FACTORS		
Volume to biomass	BEF	1.71
Stem volume to total tree volume	RS	1.25
Carbon to CO ₂		3.67
Biomass to CO ₂		1.44
Biomass to carbon		0.52
Weighted wood density	tonnes/m ³	0.75

BEF = biomass expansion factor, CO₂ = carbon dioxide, and RS = biomass of small roots
 Source: Feasibility Study Report by TA-7459 REG – GMS Biodiversity Conservation Corridors Project – FIP Component, November 2013.

4. The carbon densities and carbon dioxide potential corresponding to the timber volumes given in Table A.1 for the forest types, together with the averages for the four crown closure classes that are considered as “forest” by Lao PDR Ministry of Agriculture and Forestry (MAF) are given in Table A.3 below.

Table A.3: Total AGB+BGB Carbon Densities and Carbon Dioxide Potential According to Forest Type and Crown Closure from Data in Table A.1 and Conversion Factors in Table A.2.

	Mixed Deciduous Forest		Dry Dipterocarp		Dry Evergreen	
	Carbon (t/ha)	CO ₂ (t/ha)	Carbon (t/ha)	CO ₂ (t/ha)	Carbon (t/ha)	CO ₂ (t/ha)
Crown closure >70%	173	235	148	544	163	525
Crown closure 40-70%	49	180	43	157	48	178
Crown closure 20-40%	18	55	18	57	17	62
Crown closure 10-20%	4	13	4	14	4	18
Bare	0	0	0	0	0	0
Weighted Average for CC > 20%	76	279	11	161	60	210

ABG = above ground biomass, BGB = below ground biomass
 Source: Feasibility Study Report by TA-7459 REG – GMS Biodiversity Conservation Corridors Project – FIP Component, November 2013.

5. The weighted average carbon dioxide potentials shown in Table A.3 are slightly lower than those used for the estimates of emissions from land-use changes given in the Feasibility Study, shown in Table A.4, because the latter were based on data collected in Xe Pian Protected Area, and suggest that the average canopy density in the protected area is around 70%. Since the forest in the biodiversity conservation corridor has not been protected the lower weighted average density derived from the SUFORD plots is considered to give a more conservative estimate of future potential emission reductions.

Table A.4. Total AGB and BGB, Carbon Densities and Carbon Dioxide Potential According to Forest Change Category used in Estimates of Current Emissions.

LAND COVER	Biomass (T/ha)		Carbon (T C/ha)		CO ₂ (T CO ₂ /ha)	
	AGB	AGB + BGB	AGB	AGB + BGB	AGB	AGB + BGB
Forest	210	260	105	130	385	477
Degraded Forest / Regrowth	50	60	25	30	92	120
Dry Dipterocarp	32	38	16	19	58	78
Cropland-regrowth						-62
Cropland		10		5		18
Other Land / Water	0	0	0	0	0	0

Source: Feasibility Study Report by TA-7459 REG – GMS Biodiversity Conservation Corridors Project – FIP Component, November 2013.

Table A.5: Estimated Emissions in the Five Target Kum Bans from Change in Land-use as Detected from LANDSAT Imagery in 2000 and 2010

Kumban	Number of villages	Population	HH	Emissions of CO ₂ (tons)			
				Forest-crop	Deg. For-crop	regrowth	Net emissions
Tateu	6	1,788	243	68,391	46,276	-25,484	89,183
Dakpar	6	1,589	221	319,923	77,832	-4,324	393,431
Xekaman	8	1,945	330	251,073	80,408	-5,704	325,777
Total Sekong Kumban	20	5,322	794	639,387	204,516	-35,512	808,391
Average Sekong/Kumban	7	1,774	265	213,129	68,172	-11,837	269,464
Vongvilai	5	4,096	779	132,192	17,664	-20,884	128,972
Namkong	3	1,706	425	93,177	35,052	-35,328	92,901
Total Attapeu Kumban	8	5,802	1,204	225,369	52,716	-56,212	221,873
Average Attapeu/Kumban	4	2,901	602	112,685	26,358	-28,106	110,937
Total 2 sites	28	11,124	1,998	864,756	257,232	-91,724	1,030,264
Average 2 sites/Kumban	6	2,225	400	172,951	51,446	-18,345	206,053

Source: Feasibility Study Report by TA-7459 REG – GMS Biodiversity Conservation Corridors Project – FIP Component, November 2013.

6. For the Project it is assumed that project interventions would result in a decrease in the deforestation due to the project interventions aimed at the promotion of (i) improved land management through the use of agroforestry systems that incorporate multipurpose trees to protect and improve the soil through nitrogen fixation and provide useful products such as fuel, fodder and fruit, which will increase agricultural productivity and farmer's income, (ii) small holder plantations that would have a similar outcome, (iii) community based forest management and a decrease in forest degradation due to better protection of the forest areas with crown closure >20 % and (iv) larger scale reforestation, especially of bare land on steep slopes in the catchment areas of hydro-power dams. It is anticipated that, if successful, these plantations would trigger payments for improved water flow and quality in the future.

7. The five sources of carbon sequestration will be presented below.

8. **Sources of Carbon Sequestration 1.** The AF also plans to cover 350 ha of reforestation for four years. The community and large-scale reforestation plantations are based on growth models for the slow growing indigenous species (*Hopea odorata*). The expected sequestration from reforestation are given in Table A.6.

Table A.6: Estimated Sequestration from Reforestation of 350 ha, Based on Slow Growing Indigenous Hardwood Species *Hopea odorata*

Reforestation		based on slow growing H'woods (<i>Hopea odorata</i>)						
Year	Carbon Sequestered (ton/ha)	Area planted	Annual Incremental CO ₂ sequestered from:					TOTAL
			Year 1 plantation	Year 2 plantation	Year 3 plantation	Year 4 plantation	Year 5 plantation	
1	2.25	50	410					410
2	6.25	80	1,141	656				1,797
3	11.41	100	2,082	1,825	820			4,727
4	16.15	120	2,947	3,331	2,282	984		9,544
5	22.12		4,036	4,715	4,164	2,738	0	15,653
6	25.61		4,674	6,458	5,894	4,996	0	22,022
7	29.47		5,378	7,478	8,072	7,073	0	28,001
8	38.37		7,003	8,605	9,347	9,687	0	34,642
9	43.46		7,932	11,205	10,756	11,217	0	41,110
10	49.00		8,943	12,691	14,007	12,907	0	48,548
Total over 10 years		350	44,546	56,965	55,342	49,602	0	206,455

Phasing of 350 ? ha to be planted: year 1: 50 ha, year 2: 80 ha; year 3: 100 ha; and year 4: 120 ha.

Source: Asian Development Bank estimates.

9. **Sources of Carbon Sequestration 2:** The AF plans to cover 1,100 ha of agroforestry plantation for four years. The carbon sequestration by the agroforestry systems is based on growth models for a leguminous nitrogen fixing multipurpose tree (*Tephrosia candida*) that produces fodder as well as sequestering carbon in its woody trunk and branches. The expected sequestration from agroforestry crops and livestock are given in Table A.7.

Table A.7: Estimated Sequestration from Trees in Agroforestry Systems on 1,100 ha, Based on Fast Growing Leguminous Multipurpose Tree Species *Tephrosia candida*.

Agroforestry		based on fast growing fuelwood/fodder spp (<i>Tephrosia candida</i>)						
Year	Carbon Sequestered (ton/ha)	Area planted	Annual Incremental CO ₂ sequestered from:					TOTAL
			Year 1 plantation	Year 2 plantation	Year 3 plantation	Year 4 plantation	Year 5 plantation	
1	1.04	50	190					190
2	2.90	150	529	571				1,100
3	5.29	300	966	1,588	1,142			3,696
4	7.49	600	1,368	2,898	3,177	2,284		9,726
5	10.26		1,873	4,103	5,797	6,353	0	18,126
6	11.88		2,169	5,619	8,206	11,594	0	27,588
7	13.68		2,496	6,507	11,238	16,412	0	36,653
8	1.04		-2,305	7,487	13,013	22,476	0	40,671
9	2.90		529	-6,916	14,975	26,026	0	34,614
10	5.29		966	1,588	-13,833	29,949	0	18,671
Total over 10 years		1,100	8,781	23,446	43,714	115,095	0	191,036

Phasing of 1,100 ha to be planted: year 1: 50 ha, year 2: 150 ha; year 3: 300 ha; and year 4: 600 ha. Negative numbers reflects felling at the end of each 8-year period.

Source: Asian Development Bank estimates.

10. **Sources of Carbon Sequestration 3, 4, and 5.** Three other sources of carbon sequestration are from (i) avoided deforestation and degradation from protecting existing forests; (ii) avoided deforestation from growth of trees in primary and secondary forests; and (iii) avoided shifting cultivation. The estimates of reduction in emissions from deforestation and forest degradation in these three sources are based on the area of 50,115 ha of forest that communities are expected to patrol. It is expected that the areas patrolled will be the denser forest areas in order to maximize the emission reductions. It is assumed that patrolling will give a 5% reduction in emissions in the first year and that the reductions will increase by about 5% annually up to 50% by year 10 (see Table 8, upper panel).

11. The AF will help with delineation of boundaries to increase awareness of local communities in knowing which forests are to be protected, and reinforced with community patrolling, and hence such forests continue to grow and sequester carbon. The same applies to

areas of secondary forests, where clearance and burning for shifting cultivation is avoided (see Table 8, lower panel, green-shaded column). The sequestration from growth of trees in primary and secondary forests where deforestation and degradation has been avoided is relatively modest but contributes to the overall net emission reductions (see Table A.8, lower panel, blue-shaded columns).

**Table A.8: (a) Estimated Reductions in CO₂ Emissions from Protecting Existing Forests
(b) Sequestration from Growth of Trees in Primary and Secondary Forests where Deforestation and Degradation has been Avoided**

Factor		Total forest area	Canopy closure %				Total
			>70	40 - 70	20 - 40	<20%	
Emission reductions from protection of Growing Stock							
% forest area in 5 kumbans		100%	40%	40%	20%		
Area (ha)		50,115	20,046	20,046	10,023		0
Growing stock m ³ /ha		106	176	71	35		5
Total growing stock (m ³)		5,302,178	3,528,103	1,423,269	350,806		0
Total carbon stock (tC)		4,420,028	2,941,115	1,186,473	292,440		0
Annual Rate of loss due to DFD (%)		1.2%	1.2%	1.2%	1.2%		1.2%
Annual reduction in Carbon stock (t/an)		51,182	34,057	13,739	3,386		0
Annual emissions from C loss (t/an)		187,668	124,876	50,376	12,417		0
Reduced emissions from protection (t/ar % reduction)							
year 1	5%	9,383	6,244	2,519	621		0
year 2	10%	18,767	12,488	5,038	1,242		0
year 3	15%	28,150	18,731	7,556	1,862		0
year 4	20%	37,534	24,975	10,075	2,483		0
year 5	25%	46,917	31,219	12,594	3,104		0
year 6	30%	56,301	37,463	15,113	3,725		0
year 7	35%	65,684	43,707	17,632	4,346		0
year 8	40%	75,067	49,950	20,150	4,967		0
year 9	45%	84,451	56,194	22,669	5,587		0
year 10	50%	93,834	62,438	25,188	6,208		0
(a) Total emissions avoided over 10 years (tCO ₂ eq)		516,088	343,408	138,534	34,146		0
Sequestration through growth of conserved Growing Stock							
MAI (m ³ /ha/an)		1.44	0.5	2	2.2		
Annual incr. (m ³)		72,166	10,023	40,092	22,051		
An. carbon incr. (t/an)		42,939	5,964	23,855	13,120		
Sequestration on Growing stock conserved							
Year 1	1	533	13	51	28		441
Year 2	2	1,867	25	101	56		1,684.62
Year 3	3	3,052	38	152	84		2,778.26
Year 4	4	4,175	51	203	111		3,811
Year 5	5	5,265	63	253	139		4,809.57
Year 6	6	6,334	76	304	167		5,787.23
Year 7	7	7,388	89	354	195		6,750
Year 8	8	8,432	101	405	223		7,702.56
Year 9	9	9,467	114	456	251		8,647
Year 10	10	10,496	127	506	279		9,584.34
(b) Total CO ₂ sequestered (tCO ₂ eq/an) over 10 years		57,009	696	2,785	1,532		51,996
Total reduction in emissions over 10 years (tCO₂eq) from two sources [(a)+(b)]							
		573,097	344,105	141,319	35,678		51,996

C = carbon; DFD = deforestation and forest degradation; MAI = mean annual increment

Note: the upper panel shows the estimated reductions in CO₂ emissions from protecting existing forests, and the lower panel outlines the reduction from two sources, namely 5,014 tons from sequestration from growth of trees in primary and secondary forests (blue-shaded columns) and 51,996 tons from avoided clearance and burning for shifting cultivation (green-shaded column).

Source: Asian Development Bank estimates.

12. Table A.9 below, summarizes the net emission reductions from all sources presented above. The total net reduction in emissions over the next decade is about 970,000 tons CO₂ equivalent, which is consistent with the estimated total emission over the past decade as outlined in Table A.5.

Table A.9: Estimates of Net Reductions in Emissions of CO₂ in the Project Areas

Years after project commences	Reforestation (planned - 350ha) [1]	Agroforestry (planned - 1100ha) [2]	Avoided deforestation & degradation from protecting existing forests[3]	Avoided deforestation from growth of trees in primary and secondary forests [4]	Avoided shifting cultivation [5]	Total annual emission reductions [6]
1	410	190	9,383	91	441	10,516
2	1,797	1,100	18,767	182	1,685	23,531
3	4,727	3,696	28,150	273	2,778	39,626
4	9,544	9,726	37,534	365	3,811	60,979
5	15,653	18,126	46,917	456	4,810	85,962
6	22,022	27,588	56,301	547	5,787	112,244
7	28,001	36,653	65,684	638	6,750	137,726
8	34,642	40,671	75,067	729	7,703	158,812
9	41,110	34,614	84,451	820	8,647	169,642
10	48,548	18,671	93,834	912	9,584	171,549
Total	206,455	191,036	516,088	5,014	51,996	970,588

Notes: Total sources of carbon emission reduction [6] is the aggregate of [1] taken from Table A.6; [2] taken from Table A.7; [3] taken from Table A.8, upper panel; [4] taken the annual aggregates of blue-shaded columns of Table A.8, lower panel; and [5] taken from Table A.8, lower panel, green-shaded column.

Source: Asian Development Bank estimates.

Gender Action Plan

Gender Action Plan
Document Stage: Draft for SRM
Project Number: 40253-036

**Lao PDR: Greater Mekong Subregion Biodiversity
Conservation Corridors Project – Additional Financing
(Protecting Forests for Sustainable Ecosystem
Services Project, Forest Investment Program
Component)**

I. INTRODUCTION

1. This Gender Action Plan (GAP) is an updated version of the GAP prepared for the Greater Mekong Subregion (GMS) Biodiversity Conservation Corridors Initiative Project (BCC) in 2010. The update is necessary to accommodate the Forest Investment Program additional financing (AF). The AF, like the BCC Project, is categorized as an “effective gender mainstreaming (EGM)” project. It therefore aims to ensure (i) equality of project benefits and opportunity sharing between men and women; (ii) systematic approach to reduce gender inequalities in the project areas; (iii) targeted approach for women of ethnic groups; (iv) collection of gender disaggregated data including benefit monitoring and evaluation; and (v) increased representation of women in decision-making bodies at all levels.

A. The Baseline Biodiversity Conservation Corridor (BCC) Project

2. The GMS 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 and ready to implement REDD+; (ii) biodiversity corridors restored, ecosystem services protected, maintained and REDD+ ready; (iii) livelihoods improvement and small-scale infrastructure support provided in target villages; and (iv) project management and support services provided.

3. 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.¹ The Project aims to 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 Biodiversity Conservation Corridors Project

4. In 2013, the Forest Investment Program additional financing (AF) was proposed to support a number of new activities that contribute to, and enhance the existing BCC outputs. Whereas the existing BCC project focuses on biodiversity considerations, particularly maintaining and improving forest cover connectivity within the corridor, the AF will focus more on conservation of areas with high carbon stocks (since loss of such areas results in high levels of emissions) and restoration of forest cover where co-benefits from carbon sequestration, soil, water and biodiversity conservation, can be maximized. The new activities will therefore include the augmentation of ecosystem services and benefits through strengthening the participation of local communities in permanent forest boundary delineation, demarcation and maintenance, forest management, enforcement of forest protection and monitoring changes in forest carbon stocks resulting from reduced losses and increased sequestration from forest restoration.

5. The AF supports the four BCC outputs but broadens them to integrate measures to reduce emissions from deforestation and degradation (REDD+) into the existing project results.

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

It also adopts the BCC approach and technical guidelines for forest protection and restoration, and livelihood activities. It will be implemented in 21 villages in Attapeu and Sekong.

6. The additional financing estimated at \$12.84 million, will cover an additional 21 villages and 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. The BCC and the AF are jointly referred to as 'the Project' hereafter.

C. Rationale for the Gender Action Plan

7. Important differences in roles between women and men, or other gender norms, may have a significant bearing on the Project. Because gender disparities usually result in women and men having different needs, demands, and constraints, it is crucial to identify them early in the design process before key decisions are made. If these differences are ignored, the prospects for success of the project may be adversely affected, and women may not have the opportunity to benefit from the project on equal terms with men. Social norms related to gender roles frequently result in:

- Gender-based inequality in access to and control of key resources;
- Unequal opportunities for women and men in areas such as education, mobility, and public decision making; and
- Formal or informal discrimination against women in areas such as inheritance, ownership and registration of land, access to credit, and employment.

8. Therefore the AF activities will include specific gender mainstreaming features to facilitate and ensure women's participation and access to project benefits. Gender mainstreaming requires that the opportunities for addressing women and gender issues are identified at the design stage of activities and that they are accepted by the implementing agency.

9. The AF is consistent with the FIP Investment Plan for Lao PDR (2011) which includes among key monitoring indicators: number of women participating in Participatory Sustainable Forest Management, female government staff trained in REDD+, number of villagers trained including proportion of women, benefits shared by women in participating villages, collaboration with Lao Women's Union (LWU), extent to which women and men of various ethnic groups have access to relevant information in timely manner, number of women and ethnic minorities represented in decision making, and women's access to social and economic opportunities. Gender targets as well as performance and monitoring indicators for mainstreaming are found in the project Design and Monitoring Framework.

II. GENDER IN THE CONTEXT OF THE PROJECT

A. Legal and Policy Framework

10. The Lao PDR Constitution and various laws guarantee gender equality and the National Growth and Poverty Eradication Strategy (NGPES) – the government’s national development plan – highlights gender as a cross cutting priority.² There are two main institutions tasked with oversight of women: the Lao Womens Union (LWU) safeguards the rights and interests of Lao women and children of different ethnic groups while the National Commission for the Advancement of Women (NCAW) assists the Government to formulate national policy guidance and strategic action plans to promote women’s advancement and gender equality. The National Strategy for the Advancement of Women (2011-2015) has as targets more than 35 percent increase in number of women in vocational and technical training in each sector. The Ministry of Finance similarly is instructed to issue guidance on budget lines, allocation and expenditure for NSAW implementation. Lao PDR had a Gender Inequality Index (GII) of 0.483 by 2013.

B. Gender Profile in Project Area

11. Key issues related to the BCC project are found in the GAP of 2010 quoting the Lao Gender Profile (2005). A more recent gender assessment for Lao PDR is found in the ADB/World Bank’s *Country Gender Assessment for LAO PDR: Reducing Vulnerability and Increasing Opportunity* (2012). The project area of Southern Lao PDR is typically dominated by indigenous people. Women in all indigenous peoples’ (IP) villages are clearly seen as less powerful than men. Women’s lower status within the community renders their voices less significant. Women have less access to decision making and to government resources for development. They also have limited time and mobility to attend meetings that determine women’s needs and priorities. Village men have cultural norms which are probably also shared by women, where women feel “shy” to speak up in meetings especially when outsiders are present. As a result the views and priorities of women are likely to remain excluded from collective decision-making processes and this is especially true of poor and indigenous women. Indigenous women also often do not speak Lao and although they participate in village meetings or meetings with government officers they often do not understand the discussion and are reluctant to ask Lao speaking men to explain to them. Some women especially the poorer women would understand some of what was presented in the meetings but would not know how to apply such knowledge in practice. Therefore, adequate targeting of women’s groups among IP and identifying their characteristics in terms of assets and livelihood conditions is a precondition for the design and implementation of an effective targeting strategy for BCC and FIP interventions.

12. Socio-demographic characteristics of BCC project sites based on seven sample villages are found in Table 1. It shows that the total affected ethnic group population in BCC sites is about 53% of the total population, the highest being in Xekong, followed by Attapeu and Champassak. In contrast, villages identified for AActivities have higher percentages of ethnic groups as indicated in Table 2. An estimated 35% of BCC households are poor and are mostly found in Xekong province where Dak Cheung is located.

² Lao PDR Gender Profile. 2005. Gender Resource Information & Development Center (GRID), with the Support of the World Bank.

Table 1: Summary 2010 of Socio-demographic Characteristics in BCC Target Villages

PARAMETER	ENTRY
BCC Area (km2)	6980
BCC Population	27,368
Population Density	4
Covered Provinces	3
Covered Villages	69
Covered Households	4,689
Covered Poor Households	1,639
% Estimated Poor from BCI Population	35%
Covered Ethnic Group	14,505
% Affected Ethnic Group from BCI Population	53%
Female Population	14,341
% Female Population	52%

Table 2: Summary Matrix of Poverty Characteristics of Two AF Districts

Province/ District/ Village	Total Population	% Females	No of Households	Poor Households category*	Total Ethnic Group Population	% Ethnic Group from Total Population	Ethnic Group Females	% Ethnic Group Females
Phouvuong	1,117	44.9	193	2	887	79.4	472	53.2
Dakcheung	3219	66.4	487	2	2791	86.7	1506	54.0

* Poor households classified as 1=non-poor and 2=poor as per records at district offices.

13. A BCC Project social assessment survey with Women's Union at the village, district and national levels, as well as the Lao Front for National Construction, revealed that provision of social services is an important need for women. This is validated at the village level where the following issues and concerns were raised:

- (i) Absence or lack of rural and social infrastructure. Inter-village roads are far and difficult. Without means of transport, women spend much of their time walking to undertake household reproductive activities.
- (ii) Marked illiteracy rates feature among women, especially from ethnic groups.
- (iii) Poor household credit performance.
- (iv) Low income opportunities results in increased labor migration, especially by males, leaving women behind to manage agricultural tasks and alone.

14. With regards to educational attainment, women generally only reach primary schooling as compared to males who are able to reach secondary level. In Attapeu Province, women stressed the need for education to bail their families out of poverty.

15. With respect to crop production, men are more visible at land preparation: ploughing, making bunds and preparing seedbeds. Women on the other hand are more visible during weeding, harvesting, threshing and post-harvest operations. Women make decisions regarding household expenditure and are responsible for selling surplus rice. Despite all these responsibilities, women get minimal, if at all, extensions services on improved rice cultivation practices as well as livestock and poultry production.

16. Gender balance in the Government field extension service is extremely limited to the point of being non-existent. Awareness and understanding of gender concepts and process for gender mainstreaming among its staff are generally low. Male government officials in general seem to place less importance on learning opportunities for women and on defining specific actions on how gender can be incorporated and how specific outcomes can be achieved. Therefore, project guidelines must stress on recommendations for inclusion of women to make sure women are kept informed and made aware of how to form separate women focus groups. During the Inception Period of AF, the entry points for mainstreaming women's issues into technical guidelines and technical work must be teased out. Gender stereotypes in the ethnic villages must be addressed. Such stereotypes and cultural and social norms and values affect men and women differently. Male project implementation officers may not push hard as "it is easier to work with men". It is assumed that the project will have local staff working in collaboration with NGOs in implementing gender mainstreaming which could constitute a 'learning by doing' situation for government project implementation staff.

III. DESIGNING GENDER INCLUSIVE INTERVENTIONS

17. The GAP should be implemented together with the Ethnic Group Development Framework (EGDF). At the outset it is important to recognize that the proposed AF interventions have gender dimensions. For instance:

- Women are substantially involved in the activities related to REDD+ ;
- Measures to directly improve women's or girls' access to opportunities, services, assets, or resources are adopted; or
- Appropriate measures are taken to ensure that women and/or girls can participate in and benefit from the project.
- Targets set for women's participation are accompanied by measures to ensure that women understand the information shared during the meetings/trainings taking into account factors such as native language and literacy level, and that they are encouraged to speak up and express their views

18. The AF activities will have adequate resources to implement gender mainstreaming e.g., initially allowing for awareness raising in AF objectives, making sure women in the village understand what AF is about and create focus group discussions in villages.

A. Gender Inclusive Design Elements of the Project

Table 3: Gender Actions by Output of the AF

Project Outputs	Gender Actions
<p>Output 1: Institutions and community strengthened for biodiversity conservation management and ready to implement REDD+</p>	<ul style="list-style-type: none"> • Ensure that enhancement of REDD+ policy framework is informed by sex-disaggregated data on the different uses of the forest by men and women and the different roles that men and women play in conservation. • Ensure balanced consultation with local women and men (50% participation by each) on decisions regarding zoning/restrictions of access to forest areas to avoid/mitigate restrictions which might adversely impact on women's livelihoods activities from forest use/products. • Target of 50% women's participation in REDD+ awareness activities

Project Outputs	Gender Actions
	<ul style="list-style-type: none"> • Target 30% participation by women in training on REDD+ activities. • Ensure that all training and IEC materials in forest use, management and conservation integrate gender dimensions. • Awareness and training activities to be held at times and days convenient to women. • Ensure that progress is reported by type of activity and type/level of engagement by women and men.
<p>Output 2: Biodiversity corridors restored, ecosystem services protected, maintained, and REDD+ ready</p>	<ul style="list-style-type: none"> • At least 2 out of the 5 national staff trained on carbon and water quality baseline assessment and monitoring techniques, are women. • Women will be at least 30% of participants (as household members and/or female headed households): <ul style="list-style-type: none"> (i) in planning meetings on forest demarcation/ zoning and training on community protection; (ii) in the preparation of the community forest development plans; (iii) in training and implementation/ restoration teams on replanting and maintenance techniques.
<p>Output 3: Livelihoods improved and small-scale infrastructure support provided in target villages</p>	<ul style="list-style-type: none"> • Women will be 40% of participants (as household members and/or female headed households): <ul style="list-style-type: none"> (i) in community contracts with user rights for sustainable alternative agro-forestry development and implementation. (ii) in training, implementation teams and in access to livelihood assistance on forest conservation and resource use, including tree planting, crop demonstrations, and livestock and crop management and productivity improvement activities. • Livelihood support/extension services will include specific services/ inputs/ training identified by women farmers on enhancing productivity, diversification of produce, livestock management, medicinal and non-timber product development, etc.
<p>Output 4: Project management and support services provided</p>	<ul style="list-style-type: none"> • Gender indicators related to AF project to be included in the project M&E framework. • The project will report sex disaggregated data on all activities and monitoring of benefits by type of activity and type/level of engagement. • All EA/IA national and provincial staff will be sensitized on gender issues in forest conservation and sustainable use, building on capacity development/training activities provided under the BCC. • In accordance with action agreed at MTR, a focal person for social safeguards will be appointed (could be from the Lao Women's Union at provincial or district level) to the NPMO and PPMOs to help mobilize and ensure effective coordination amongst various institutions involved in social safeguards.

ADB = Asian Development Bank, GAP = gender action plan, GIS = geographical information system, IEC = information, education and communication, LWU = Lao Women's Union, M&E = monitoring and evaluation, NTFP = non-timber forest product, O&M = operation and maintenance, REDD+ = reduced emissions from deforestation and forest degradation.

IV. IMPLEMENTING ARRANGEMENTS

19. 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 and social safeguard requirements of ADB and the Government of Lao PDR (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 Project, and will also be responsible for the AF. 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).

20. 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.

21. The NPMO and PPMOs are responsible for overseeing implementation of the GAP and reporting on progress in annual / semi-annual progress reports to ADB. The international and national social development specialist engaged under the Grant Implementation Consultants contract (see below) will: (i) build capacity of NPMO and PPMO staff regarding gender responsive design and analysis of project activities; (ii) evaluate gender dimension of activities and their impact; and (iii) assist the NPMO to report on progress of implementing the GAP.

V. STAFFING AND REPORTING REQUIREMENTS AND BUDGET

22. An international and national social specialist is included in the Grant Implementation Consultant team of the BCC Project and these inputs will be increased (12 person-months for national) with AF. The specialist has supported the implementation of the GAP prepared for the BCC Project and will be responsible for assisting the NPMO and PPMOs in implementation of the revised GAP requirements, including:

- (i) ensure that all activities are appropriately screened and designed for gender inclusiveness in line with the GAP;
- (ii) undertake gender monitoring and reporting by type of activity and type/level of engagement;
- (iii) undertake gender reporting to the NPMO and semi-annual reporting to the ADB; and
- (iv) providing training to PPMO and NPMO staff, including the PPMO forestry and environment specialist on gender issues.

23. Given that the AF activities will be implemented by service providers, these service contracts will need to include expertise in social and gender issues.

24. 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.

Environmental Assessment and Review Framework

Lao People's Democratic Republic:

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 September 2010 available on <http://www.adb.org/projects/40253-023/documents>.

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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.¹

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.

¹ 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;² 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.

² '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 2009³ 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.⁴ The Decree on Environmental Impact Assessment details and guides environmental impact assessment.⁵ 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).⁶

³ 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.

⁴ No. 02/99/NA.

⁵ Decree No. 112/PM of 16 February 2010.

⁶ 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 ¹	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)
I. Development Projects: energy sector		
Hydropower plants	<15 MW or water capacity <200,000,000 m ³ dam area <1,500 ha	>15 MW or water capacity >200,000,000 m ³ 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
II. Investment Projects: agriculture and forestry sector		
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 ²	
III. Investment Projects: industrial processing sector		
Chemicals production plants		All
Non-metallic mineral production plants		All
Wood, rattan, straw and other processing factories	All	
Potable water factory	All	
IV. Investment Projects: infrastructure and services sector		
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 ² 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
V. Investment Projects: minerals/ore sector		
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 CO₂ 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.

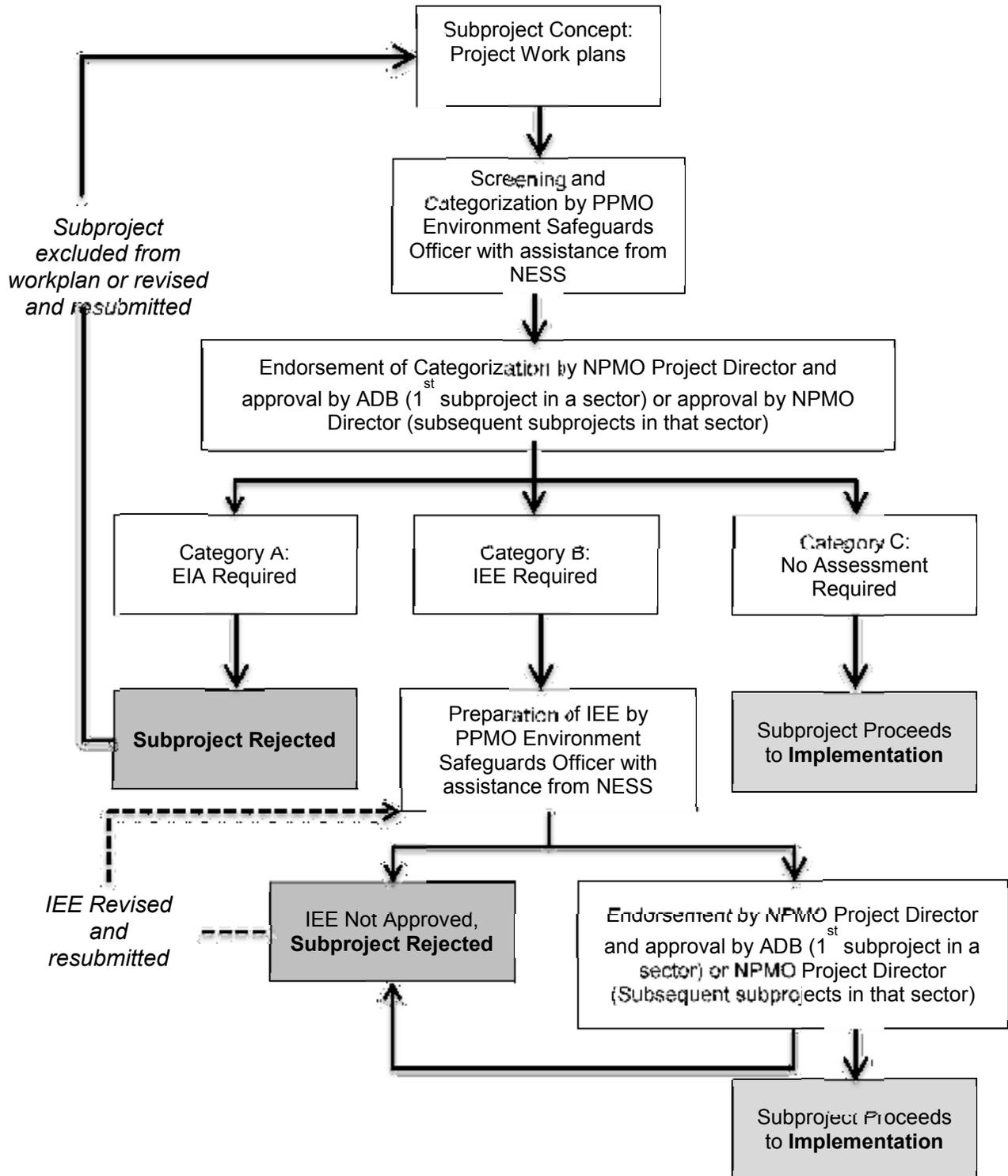
A. Subproject Concept

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

⁷ 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
Champasak	Pathoumphone	Subproject 1 (cat. B)		Bi-monthly	Semi-annually	Upon request by ADB
		Subproject 2 (cat. C)		Once	Annually	
		Etc.		Etc.		
Attapeu	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.		
Xekong	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 listed⁸ 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
Design Phase			
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.

⁸IUCN. Global Invasive Species Database. 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.
Construction Phase:			
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.
Operation Phase:			
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.

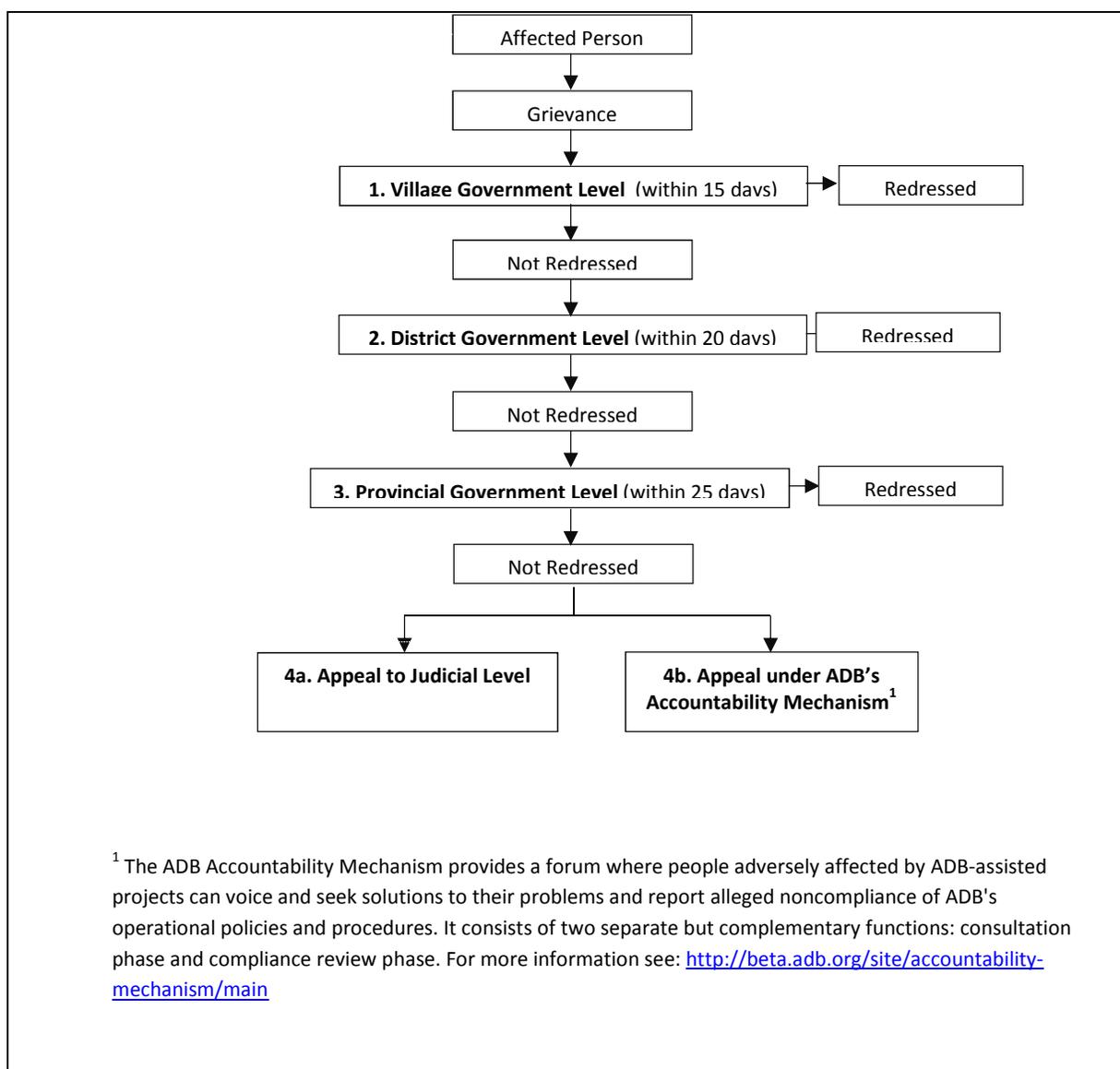
4. Step 4: Judicial Level

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.

Agro-Industrial

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
A. Project Siting			
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. Potential Environmental Impacts			
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 ¹	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
I. Development Projects: energy sector			
Hydropower plants	<15 MW or water capacity <200,000,000 m ³ dam area <1,500 ha	>15 MW or water capacity >200,000,000 m ³ 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	
II. Investment Projects: agriculture and forestry sector			
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 ²		
III. Investment Projects: industrial processing sector			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
IV. Investment Projects: infrastructure and services sector			
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 ² 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	
V. Investment Projects: minerals/ore sector			
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
A. Project Siting			
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. Potential Environmental Impacts			
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 ¹	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
I. Development Projects: energy sector			
Hydropower plants	<15 MW or water capacity <200,000,000 m ³ dam area <1,500 ha	>15 MW or water capacity >200,000,000 m ³ 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	
II. Investment Projects: agriculture and forestry sector			
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 ²		
III. Investment Projects: industrial processing sector			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
IV. Investment Projects: infrastructure and services sector			
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 ² 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	
V. Investment Projects: minerals/ore sector			
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
A. Project Siting			
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. Potential Environmental Impacts			
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 ¹	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
I. Development Projects: energy sector			
Hydropower plants	<15 MW or water capacity <200,000,000 m ³ dam area <1,500 ha	>15 MW or water capacity >200,000,000 m ³ 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	
II. Investment Projects: agriculture and forestry sector			
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 ²		
III. Investment Projects: industrial processing sector			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
IV. Investment Projects: infrastructure and services sector			
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 ² 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	
V. Investment Projects: minerals/ore sector			
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
A. Project Siting			
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. Potential Environmental Impacts			
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 ¹	Category 1 Threshold (IEE Required)	Category 2 Threshold (EIA Required)	IEE or EIA Required?
I. Development Projects: energy sector			
Hydropower plants	<15 MW or water capacity <200,000,000 m ³ dam area <1,500 ha	>15 MW or water capacity >200,000,000 m ³ 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	
II. Investment Projects: agriculture and forestry sector			
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 ²		
III. Investment Projects: industrial processing sector			
Chemicals production plants		All	
Non-metallic mineral production plants		All	
Wood, rattan, straw and other processing factories	All		
Potable water factory	All		
IV. Investment Projects: infrastructure and services sector			
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 ² 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	
V. Investment Projects: minerals/ore sector			
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

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor⁹ or child labor;¹⁰
 - (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,¹¹ pesticides, and herbicides,¹² (b) ozone-depleting substances,¹³ (c) polychlorinated biphenyls¹⁴ and other hazardous chemicals,¹⁵ (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,¹⁶ and (e) transboundary trade in waste or waste products;¹⁷
 - (iii) production of or trade in weapons and munitions, including paramilitary materials;
 - (iv) production of or trade in alcoholic beverages, excluding beer and wine;¹⁸
 - (v) production of or trade in tobacco;¹⁰
 - (vi) gambling, casinos, and equivalent enterprises;¹⁰
 - (vii) production of or trade in radioactive materials,¹⁹ including nuclear reactors and components thereof;
 - (viii) production of, trade in, or use of unbonded asbestos fibers;²⁰
 - (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.
-

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

¹⁰ 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).

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

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

¹³ 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>.

¹⁴ 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.

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

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

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

¹⁸ 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.

¹⁹ 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.

²⁰ 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

A. Instructions:

(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.

(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.

B. Subproject Data:

Title: _____

Province/District/Village: _____ Date: _____

Provincial Project Office: _____ Processing Stage: _____

Coverage: Province District Village

C. ADB Environment Category: New Recategorization --- Previous Category _____

Category A

Category B

Category C

Comments:

D. GOL Environment Category

Category 1

Category 2

Comments:

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 Examination (IEE) 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 labor²¹ or child labor;²²
 - (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,²³ pesticides, and herbicides,²⁴ (b) ozone-depleting substances,²⁵ (c) polychlorinated biphenyls²⁶ and other hazardous chemicals,²⁷ **(d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,**²⁸ and (e) transboundary trade in waste or waste products;²⁹
 - (iii) production of or trade in weapons and munitions, including paramilitary materials;
 - (iv) **production of or trade in alcoholic beverages, excluding beer and wine,**³⁰
 - (v) **production of or trade in tobacco;**¹⁰
 - (vi) gambling, casinos, and equivalent enterprises;¹⁰
 - (vii) production of or trade in radioactive materials,³¹ including nuclear reactors and components thereof;
 - (viii) production of, trade in, or use of unbonded asbestos fibers;³²
 - (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.
-

- **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

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

²² 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).

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

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

²⁵ 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>.

²⁶ 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.

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

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

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

³⁰ 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.

³¹ 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.

³² 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 resources³³, 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.

³³ 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
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³⁴ 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.

³⁵ 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

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1. Subproject Inspection Reports
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³⁶Overall 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.

Resettlement Framework

Resettlement Framework: Lao PDR
Document Stage: Updated for Additional Financing
Project Number: 40253-036

Lao PDR: Greater Mekong Subregion Biodiversity Conservation Corridors Project – Additional Financing (Protecting Forests for Sustainable Ecosystem Services Project, Forest Investment Program Component)

Prepared by the Ministry of Natural Resources and Environment, Lao PDR, for the Asian Development Bank. This is an updated version of the draft originally posted in October 2010 available on <http://www.adb.org/projects/40253-023/documents>.

CURRENCY EQUIVALENTS

(as of 11 January 2016)

Currency unit	–	kip(KN)
KN1.00	=	\$0.0001227
\$1.00	=	KN8,148

ABBREVIATIONS

ADB	–	Asian Development Bank
AHH	–	affected household(s)
APs	–	affected persons
BCI	–	Biodiversity Conservation Corridors Initiative
BCI 1	–	Biodiversity Conservation Corridors Initiative – Phase I
BCC	–	Biodiversity Conservation Corridors Initiative – Phase II
DAFO	–	District Agriculture and Forestry Office
DRC	–	District Resettlement Committee
DPI	–	Department of Planning and Investment
FIP	–	Forest Investment Program
GAP	–	gender action plan
GMS	–	Greater Mekong Subregion
GOL	–	Government of the Lao PDR
HH	–	household(s)
LFNC	–	Lao Front for National Construction
LURC	–	Land Use Rights Certificate
LWU	–	Lao Women’s Union
MAF	–	Ministry of Agriculture and Forestry
MONRE	–	Ministry of Natural Resources and Environment
NPA	–	national protected area
NPMO	–	national project management office
NTFP	–	non-timber forest product
O&M	–	operation and maintenance
PAFO	–	Provincial Agriculture and Forestry Office
PAM	–	Project administration manual
PONRE	–	Provincial Office of Natural Resources and Environment
PRC	–	Provincial Resettlement Committee
PPO	–	provincial project office
REDD+	–	reduced emissions from deforestation and degradation
RF	–	Resettlement Framework
RP	–	Resettlement Plan
SAP(s)	–	Severely Affected Person(s)
SPS	–	Safeguards Policy Statement
SR	–	Safeguards requirements
VAP(s)	–	Vulnerable Affected Person(s)
VDF	–	village development fund
WREA	–	Water Resource and Environment Administration

GLOSSARY

- Affected person (AP)** - Means any person or persons, household, firm, private or public institution that, on account of changes resulting from the Project, will have its (i) standard of living adversely affected; (ii) right, title or interest in any house, land (including residential, commercial, agricultural, forest, salt mining and/or grazing land), water resources or any other moveable or fixed assets acquired, possessed, restricted or otherwise adversely affected, in full or in part, permanently or temporarily; and/or (iii) business, occupation, place of work or residence or habitat adversely affected, with or without displacement. In the case of a household, the term AP includes all members residing under one roof and operating as a single economic unit, who are adversely affected by the Project or any of its components.
- Detailed Measurement Survey (DMS)** - With the aid of the approved detailed engineering design, this activity involves the finalization and/or validation of the results of the inventory of losses (IOL), severity of impacts, and list of APs earlier done during RP preparation. The final cost of resettlement can be determined following completion of the DMS.
- Compensation** - Means payment in cash or in kind to replace losses of lands, housing, income and other assets caused by the Project. All compensation is based on the principle of replacement cost, which is the method of valuing assets to replace the loss at current market rates, plus any transaction costs such as administrative charges, taxes, registration and titling costs.
- Cut-off date** - Means the date of completing DMS for which land and/or assets affected by the Project are measured. The APs will be informed of the cutoff date, and any people who settle in the Project area after the cutoff date will not be entitled to compensation and assistance.
- Entitlements** - Refers to a range of measures comprising compensation, income restoration support, transfer assistance, income substitution, relocation support, etc. which are due to the APs, depending on the type and severity of their losses, to restore their economic and social base.
- Eligibility** - Means any person who has settled in the Project area before the cutoff date, that (i) loss of shelter, (ii) loss of assets or ability to access such assets, permanently or temporarily, or (iii) loss of income sources or mean of livelihood, regardless of relocation will be entitled to be compensation and/or assistances.
- Income restoration** - This is the re-establishment of sources of income and livelihood of the affected households.
- Income restoration program** - A program designed with various activities that aim to support affected persons to recover their income/ livelihood to pre-project levels. The program is designed to address the specific needs of the affected persons based on the socio-economic survey and consultations.

- Inventory of Losses (IOL) - This is the process where all fixed assets (i.e., lands used for residence, commerce, agriculture, including ponds; dwelling units; stalls and shops; secondary structures, such as fences, tombs, wells; trees with commercial value; etc.) and sources of income and livelihood inside the Project right-of-way (project area) are identified, measured, their owners identified, their exact location pinpointed, and their replacement costs calculated.
- Additionally, the severity of impact to the affected assets and the severity of impact to the livelihood and productive capacity of APs will be determined.
- Land acquisition - Refers to the process whereby an individual, household, firm or private institution is compelled by a public agency to alienate all or part of the land it owns or possesses to the ownership and possession of that agency for public purposes in return for compensation at replacement costs.
- Rehabilitation - This refers to additional support provided to APs losing productive assets, incomes, employment or sources of living, to supplement payment of compensation for acquired assets, in order to achieve, at a minimum, full restoration of living standards and quality of life.
- Relocation - This is the physical relocation of an AP from her/his pre-project place of residence and/or business.
- Replacement cost - Means the method of valuing assets at current market value, or its nearest equivalent, plus any transaction costs such as administrative charges, taxes, registration and titling costs.
- Replacement Cost Study - This refers to the process involved in determining replacement costs of affected assets based on empirical data.
- Resettlement - This includes all measures taken to mitigate any and all adverse impacts of a project on AP property and/or livelihoods, including compensation, relocation (where relevant), and rehabilitation as needed.
- Resettlement Plan (RP) - This is a time-bound action plan with budget setting out compensation and resettlement strategies, objectives, entitlement, actions, responsibilities, monitoring and evaluation.
- Severely affected households - This refers to affected households who will (i) lose 10% or more of their total productive land and/or assets, (ii) have to relocate; and/or (iii) lose 10% or more of their total income sources due to the Project.
- Subproject - This refers to all sub-components of the Project including but not limited to physical infrastructure.
- Vulnerable groups - These are distinct groups of people who might suffer disproportionately or face the risk of being further marginalized by the effects of

resettlement and specifically include: (i) female headed households with dependents, (ii) disabled household heads, (iii) households falling under the generally accepted indicator for poverty, (iv) children and the elderly households who are landless and with no other means of support, and (v) landless households, and (vi) affected ethnic groups.

NOTE

- (i) In this report, "\$" refers to US dollars.

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4. The Lao PDR requested ADB to follow up BCI Phase I with an investment framework (\$20 million grant project) to replicate positive results of BCI in target villages in the three provinces. *Biodiversity Corridors* are geographic areas within or cutting across the GMS Economic Corridors that need to be placed under sustainable management regimes to secure local livelihoods and investments and maintain ecosystem services for future generations.

5. BCC has four outputs, (i) institutional and community strengthening for biodiversity conservation management; (ii) biodiversity corridors restoration, ecosystem services protection, and sustainable management by local resource managers ; (iii) livelihood improvement and small-scale infrastructure support in target villages; and (iv) project management and support services. The provinces, districts, and villages covered by BCC in Lao PDR are summarized in Table 1.

Table 1: BCC Project Sites in Lao PDR

Province	District	Village	Total Population	# of Households	
Champasak	1 District	21 Villages	13,241	2,309	
	Pathoumphone		21	13,241	2,309
		1. Sanot		701	130
		2. Thongpha		619	108
		3. Thahou		519	83
		4. Somsouk		494	74
		5. Thopsok		557	85
		6. Houayko		178	31
		7. Nabon		489	84
		8. Nakok		649	114
		9. Laonga		687	99
		10. KiatNgong		983	168
		11. Namom		802	153
		12. KeleGnai		971	168
		13. Ta Ong		267	53
		14. Tavang		215	36
		15. Phalay		1,424	258
		16. Saming		988	164
		17. Khonthout		674	135
		18. Keng Na Arn		710	134
		19. Thongxai		453	87
20. Kala			645	115	
21. Houayton		216	30		
Attapeu	Phouvoung		23	9,073	1,591
			4	1,117	193
		1. B. Lamong		300	61
		2. B. Phoungnang		313	30
		3. B. Phoukeua		212	42
	4. B. Namxouan		292	60	
	Sanamxai		19	7,956	1,398
		1. B. Senkeo		145	29
		2. B. Hat-Oudomxai		381	70
		3. B. Sompoy		1,185	248
		4. B. Sivilai		358	65
		5. B. Tangao		238	50
		6. B. Boungkeo		413	72
		7. B. Khanmaknao		334	54
		8. B. Pakbo		513	71
9. B. Hatxay-Soung			473	70	
10. B. Namkong		437	73		
11. B. Don		349	58		
12. B. Nongmouang		438	83		
13. B. Pin-Dong		253	44		
14. B. Bengvilai		319	46		
15. B. Kaxe		568	98		

Province	District	Village	Total Population	# of Households		
Xekong	Dakcheung	16. B. Phonmani	259	45		
		17. B. Chanto	321	51		
		18. B. Matka	442	69		
		19. B. Phonsa-At	530	102		
			25	5054	789	
			15	3,219	487	
		Kaleum		1. B. Ayoun	232	14
				2. B. Dakman	157	29
				3. B. Dakta-Ok-Gnai	248	35
				4. B. Dakta-Ok-Noy	175	25
				5. B. Dakdom	243	44
				6. B. Daksiang	187	16
				7. B. Daklu	147	26
				8. B. Daklan-Deuy	219	38
				9. B. Daksiang Bi	244	41
	10. B. Kongnong			215	26	
	11. B. Tangpuang			71	17	
	12. B. Tangmi			190	41	
	13. B. Tangyeuy			305	44	
	14. B. Tangno			190	36	
	15. B. Tangtalang			396	55	
		10	1,835	302		
			1. B. Songkhon	450	78	
			2. B. Panon-Kaliang	108	15	
			3. B. Tavang-Bon	107	18	
			4. B. "Agnuang	170	41	
			5. B. Aching-Akeo	186	39	
			6. B. Chateu-Oung-Pale	104	17	
			7. B. Ka-Ouang-Ateng	185	27	
			8. B. Alot	166	19	
		9. B. Klo	225	33		
		10. B. Aloung-Laba	134	15		
3 Provinces	5 Districts		69	27368		
LEGEND	Sample Villages			4689		

Note: The number of villages was reduced from 69 to 67 during the midterm review because of Government's policy to combine small villages.

6. In 2013, the Forest Investment Program additional financing (AF) was proposed to support a number of new activities that contribute to, and enhance the existing BCC outputs. Whereas the existing BCC project focuses on biodiversity considerations, particularly maintaining and improving forest cover connectivity within the corridor, the additional financing will focus more on conservation of areas with high carbon stocks (since loss of such areas results in high levels of emissions) and restoration of forest cover where co-benefits from carbon sequestration, soil, water and biodiversity conservation, can be maximized. The new activities will therefore include the augmentation of ecosystem services and benefits through strengthening the participation of local communities in permanent forest boundary delineation, demarcation and maintenance, forest management, enforcement of forest protection and monitoring changes in forest carbon stocks resulting from reduced losses and increased sequestration from forest restoration.

7. The AF supports the four BCC outputs and slightly broadens the scope to integrate measures to reduce emissions from deforestation and degradation (REDD+) into the existing project results (see Appendix 1). It also adopts the BCI approach and technical guidelines for forest protection and restoration, and livelihood activities. It will be implemented in 21 villages in Sekong and Attapeu (See Appendix 2).

B. Anticipated Involuntary Resettlement

8. Three provinces, five districts, and 67 villages are covered by BCC in the Lao PDR. Social assessment was conducted in seven sample villages from May to June 2010, which resulted in the identification of activities that may possibly trigger involuntary resettlement under the SPS. In 2013, the involuntary resettlement impacts were reviewed in light of the proposed FIP additional financing. Potential impacts of both BCC and AF are as follows:

- (i) Component 1: Institutional and community strengthening for biodiversity conservation management and implementation of REDD+

If affected persons are not safeguarded, the exercise may result in restriction to access for some members of the village and/or even loss of assets and livelihood.

- (ii) Component 2: Biodiversity corridors restoration, ecosystem services protection, maintenance and REDD+ readiness

There is also possibility for restriction to access for some members of the village and/or loss of assets and livelihood.

- (iii) Component 3: Livelihoods improvement and small-scale infrastructure support

Possible livelihood support activities proposed by prospective beneficiaries are small holder fishponds, rattan plantation establishment, and even forest restoration and enrichment planting. Again, if not sensitively attended to may result in displacement and restriction to other commune members. As regards small infrastructure, resettlement impacts may occur when land is acquired for small-scale infrastructure improvement/rehabilitation or for storing construction materials or other temporary impacts caused by construction activities.

C. Rationale for Resettlement Framework

9. Technically and ideally, BCC and the AF(the Project) promote a sequential and sector-like approach at implementation. The necessary land use and capability assessment, and participatory management planning have to be in place prior to subproject implementation. However, it is recognized that planning is an ongoing facet of natural resource management and as such, some subprojects may be ready for implementation within the whole planning phase for the landscape. Specifically under Component 1 (institutional and community strengthening), the Project aims to secure forest areas for the local communities against further outside pressure/economic concessions by delineating and demarcating community forest areas and protected forest areas. It will provide tenure instruments to communities that are found peripheral to protected areas, which by law have defined uses. Communities will craft restrictions appropriate to their concerns and needs in order to protect their rights to the land and the natural resources therein and in so doing, protect the biodiversity. Capacity building leading to community empowerment is built in to address the need for balancing resource use and protection and eventually, within this context, any activity will be the choice of participating communities.

10. Affected persons cannot be determined as land use zones and priority subproject investments have yet to be identified, under the sequential or simultaneous approach, after the conduct of Components 1 and 2. However, an indicative menu of options for Component 3 (livelihood improvement and small scale infrastructure support in target villages) was identified by stakeholders. Technical inputs for land use planning will be provided for executing and implementing agencies, local government units, the Lao Front for National Construction (LFNC),

Provincial Committee for the Advancement of Women, and the Lao Women's Union (LWU). Community ownership to subprojects is still subject to processing for and documentation of broad community support imperative not only for subproject investments, but on a higher plane, to ensure sustainability towards biodiversity conservation and protection. All these are processed during Component 1 geared at strengthening local institutions. Owing to the beneficiary process-driven approach, resettlement plans cannot be prepared before project appraisal. This Resettlement Framework is therefore prepared in the event that any economic or physical displacement might occur in the course of project implementation.

II. OBJECTIVE OF THE RESETTLEMENT FRAMEWORK

11. Physical resettlement is not expected for the Project because the small-scale infrastructure subprojects will be improved along the existing rights of way or following the existing alignments. Should involuntary resettlement impacts occur, whether minor or temporary, resettlement plans shall be prepared and implemented properly. This Resettlement Framework (RF) has been prepared to guide resettlement planning and implementation and provide protocols for due diligence in cases of voluntary acquisition and restrictions. The RF reflects the Lao Government's Policies on Compensation and Resettlement of People Affected by Development Projects, particularly Decree 192/2005, Regulations 699/2010 Project Management Office-Water Resource and Environment Administration (PMO-WREA) and the ADB Safeguard Policy Statement (SPS, 2009). The RF provides (i) the policy and legal framework of the Government and ADB; (ii) the compensation policy to be applied to all subprojects and activities under the Project; and (iii) procedures to be followed during preparation, appraisal, and implementation of resettlement plans. The RF will be translated into Lao and distributed to the central and local agencies, companies and agencies contracted to carry out subproject feasibility study, and other individuals responsible for subproject preparation and implementation, and also submitted to the ADB for review and posting on the ADB website.

III. LEGAL FOUNDATION AND ENTITLEMENT POLICIES

A. Asian Development Bank Policy

12. The objectives of the ADB social safeguards policy are to avoid involuntary resettlement whenever possible; to minimize involuntary resettlement by exploring project and design alternatives; and to enhance, or at least restore, the livelihoods of all displaced and vulnerable persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups. The policy indicates four important elements in involuntary resettlement:

- (i) mitigate the need for resettlement and compensation as much as possible;
- (ii) compensate for lost assets and loss of livelihood and income;
- (iii) assist in relocation including provision of relocation sites with appropriate facilities and services; and
- (iv) assist with rehabilitation so as to achieve at least the same level of well-being with the Project as before.

13. The policy further stipulates that the absence of legal title to land cannot be considered an obstacle to compensation and rehabilitation privileges. All persons affected by the Project, especially the poor, landless, and semi-landless persons should be included in the compensation, resettlement, and rehabilitation package. The Safeguard Policy Statement stipulates that those APs who are unable to demonstrate a legalizable or recognizable claim to the land being acquired will be eligible for compensation with respect to non-land assets only,

and not the land itself. They will however be provided with other benefits and allowances as provided other APs.

B. Lao PDR Regulations on Resettlement

14. **1991 Constitution.** The Constitution sets out the broad framework for the ownership and management of land in Lao PDR, as well as the rights of ethnic groups wherein; (i) the State protects and promotes all forms of state, collective, and individual ownership (Article 14); (ii) land in Lao PDR is owned by the national community and the State ensures the right to use, transfer and inherit land in accordance with the law (Article 15); and (iii) the Constitution establishes the right of all ethnic groups to protect, preserve and promote their customs and heritage; all acts of division and discrimination among ethnic groups are prohibited (Article 8).

15. **Land Law.** The Land Law 04/NA (21 October 2003)¹ is the principal legislation by which the State exercises its constitutional responsibility for the management, preservation and use of land. Specifically, the following are pertinent to BCC the Project's implementation:

- (i) Article 3 reaffirms that all land in Lao PDR is the property of the national community and is to be managed by the State. Land is entrusted for efficient use to individuals, families and other entities; and, "ownership" consists in the right to use land. Land may not be used as a tradable commodity and land speculation is prohibited.
- (ii) Article 5 protects the constitutional rights of land users including the lawful interests of efficient, regular and long-term users. It also guarantees their rights to possession, use, usufruct, transfer and inheritance.
- (iii) Article 11 classifies land into eight categories including agricultural land, forest land, construction land, communications land, industrial land, cultural land, defense and security land and water area land. The principal categories of concern to the Project are agricultural land (i.e., land allocated of use in plantation and animal husbandry, including irrigation land); construction land (i.e. land designated for dwellings and other structures) and communication land (i.e., land allocated for roads, bridges, drainage channels, power lines, etc.).

16. The Land Law addresses the registration and titling of land that is being used legally, as well as the following provisions:

- (i) Land registration certifies the legal use of land; and, in the case of conjugal property, land is registered in the names of both spouses (Article 43).
- (ii) A Land Certificate issued by district authorities confers a temporary right to use agricultural and forest land; it can be inherited but cannot be transferred, leased or used as collateral (Article 48). The temporary right lasts for at least three years, but may be issued for a longer period (Articles 18 and 22).
- (iii) A Land Title is the only document that confers a permanent right to use land (Article 49). It is issued as a result of a systematic or spontaneous land registration process.

17. The government is undertaking a program of systematic land registration that will eventually survey and register title land throughout the country. The program is focusing on more populous urban areas and is slowly meeting targets in the countryside.

¹ Land Law 04/NA (2003) supersedes the earlier Land Law 01/NA 12 April 1997.

18. The right of an individual or organization to use land can be terminated if the State takes the land back for a public purpose (Article 63). In that instance, the State must make “appropriate” compensation to the affected person; each village, province, municipality, or special zone must keep 5% of its total land area in reserve to ensure the compensation of requisitioned land (Article 71).

19. In the absence of a Land Title, the Land Certificate (Form 01) is recognized as evidence of land use rights. Similarly, in the case of land acquisition, holders of other documents issued by district authorities such as survey certificates, land tax receipts, residency certificates and customary land use right are generally recognized as eligible for compensation.

20. In addition, people who lack proof of ownership and/or certifications, but who occupy land with the permission of village authorities are considered to be legal, unregistered users. The Land Law provides mechanisms (for example: residency or use of the land by the unregistered user for at least two years) by which individuals, except those living within the right-of-way (ROW), can apply for certification.

21. **1999 Road Law.** The Road Law defines road ROWs for different categories of roads. The Law also provides for “reasonable” compensation for persons with land use rights for land outside the ROW if it is expropriated during road construction.

22. **Decree No. 192/PM, Regulation No. 2432/STEA on Compensation and Resettlement (2005) and Regulation No. 699/PMOWREA on the Endorsement and Promulgation of Technical Guidelines on Compensation and Resettlement on People Affected Projects (2010).** The Decree and Regulations adopted in 2005 and 2010 under the Water Resource and Environment Administration (WREA) define principles, policies and procedures for land acquisition, compensation and resettlement for all development projects including those funded by the Government of the Lao PDR (GOL), private investors and/or donors. The technical guidelines included in the regulations cover all stages of project development, from project identification and pre-feasibility studies through construction and operation of the project.

23. In general, the main principles of the government policies on land acquisition, compensation, assistance and resettlement reflect those reflected in ADB’s SPS (2009) as shown in Table 2.

24. Changes in legislation relating to compensation and resettlement assistance to persons affected by development projects instituted by the Government of Lao PDR in 2005 have been initiated to more effectively safeguard the rights of citizens in respect of their livelihoods, possessions and living standards.

Table 2: Equivalence and Gaps Between Decree 192/PM, Regulations 699/PMO-WREA (2010) and ADB –SPS (2009)

Parameter	Decree 192/PM & Regulations 699/PMO-WREA (2010)	ADB-SPS (Involuntary Resettlement)	Project Policy
Severely impacted affected persons (APs) losing productive land	THERE IS EQUIVALENCE AS POLICY UNDER WREA TOOK ACCOUNT OF ADB AND WORLD BANK POLICIES ON INVOLUNTARY RESETTLEMENT	The involuntary resettlement impacts of an ADB-supported project are considered significant if 200 or more persons will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating).	Losing 10% or more of the household's assets shall be considered as threshold.
APs without land use rights certificate (LURC)		Those APs without legal title to land will be included in consultations. Ensure that APs without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets including dwellings, structures and other improvements to land such as crops, irrigation, at full replacement cost. Safeguards cover involuntary restrictions on land use or on access to legally designated parks and protected areas. Covers temporary and partial losses.	Project affected people, without legal or recognizable legal claims to land acquired, will be equally entitled to participation in consultations and benefit schemes of BCC Project where possible, and be compensated for their lost non-land assets such as dwellings and structures occupied before cut-off date. They will be entitled to resettlement assistance and other compensation and social support to assist them to improve or at least restore their pre-project living standards and income levels.
Compensation for lost land		Land based livelihoods restoration based upon land based strategies where possible, or cash compensation at replacement value provided loss of land does not undermine livelihoods for those with legal rights to land. Provide adequate and appropriate replacement land. If land not available non-land based options built around opportunities for employment, self-employment should be provided in addition to cash compensation for land and non-land assets lost.	Where appropriate land based compensation is not viable, replacement cost surveys will be carried out by the project staff to ensure that project rates for all categories of loss will be equivalent to replacement cost at current market value, to be updated at the time of compensation and combined with other assistance and livelihood restoration measures to ensure full restoration and improvements. Provided APs have legal or recognizable claim compensation is for full amount of land acquired.
Differences between compensation rates and		Provide physically and economically APs with needed assistance including (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production	Physically displaced (relocated) APs are to receive relocation assistance, secured tenure to relocated land, better housing at resettlement sites with comparable access to production and employment opportunities, and

Parameter	Decree 192/PM & Regulations 699/PMO-WREA (2010)	ADB-SPS (Involuntary Resettlement)	Project Policy
market rates		opportunities, integration of APs economically and socially into host communities;(ii) transitional support and development assistance such as land development, credit facilities, training or employment opportunities; and (iii) civil infrastructure as required.	civic infrastructure and community services as required, transitional support and development assistance such as land development, credit facilities, training or employment opportunities.
Compensation for structures		Rate of compensation for acquired housing, land and other assets will be calculated at full replacement costs, based upon: (i) fair market value;(ii) transaction costs;(iii) interest accrued;(iv) transitional and restoration costs;(v) other applicable payments.	Full compensation at replacement cost will be paid for all affected structures without any deductions for salvageable materials or depreciation, full replacement costs, based upon: (i) fair market value;(ii) transaction costs;(iii) interest accrued;(iv) transitional and restoration costs;(v) other applicable payments
Compensation for registered businesses		Affected business owners are entitled to (i) costs of re-establishing commercial activities elsewhere;(ii) the net income lost during the transition period; and (iii) costs of transferring and reinstalling plant, machinery and equipment.	Affected business owners are entitled to (i) costs of re-establishing commercial activities elsewhere;(ii) the net income lost during the transition period; and(iii) costs of transferring and reinstalling plant, machinery and equipment.
Compensation for non-registered businesses	COVERED	No distinction between registered or non-registered businesses in regards to compensation entitlement for lost income and other assistance.	Lao PDR policy to compensate non-registered businesses to prevail
Monitoring	THERE IS EQUIVALENCE AS POLICY UNDER WREA TOOK ACCOUNT OF ADB AND WB POLICIES ON INVOLUNTARY RESETTLEMENT	Monitoring indicators specified for internal and external monitoring and reporting	The executing agency (EA) must appoint an independent external monitor and undertake internal monitoring according to the critical indicators.
Disclosure and Consultation		ADB policy requires continuous public disclosure throughout all stages of the project, from identification and feasibility and project design and throughout implementation.	Public consultation will begin before project approval and continue on an ongoing process.

25. Both Lao PDR law and ADB policies entitle affected persons (APs) to compensation for affected land and non-land assets at replacement cost. However, Government and ADB policy differ in the definition of severely affected APs. The ADB (Operational Manual Section F2 para. 5) sets a threshold of 10% or more of productive assets to define severely affected APs, while the Government Decree 192/PM (Article 8) adopts a threshold of 20% of income generating assets. Using a 10% threshold is, however, in accordance with Decree 192/PM (Article 6) which entitles all APs to economic rehabilitation assistance to ensure they are not worse off due to the proposed Project.

26. APs are entitled to compensation for affected assets at replacement cost and other assistance so that they are not made worse off due to the proposed Project. Decree 192/PM goes beyond ADB's policy and provides APs living in rural or remote areas, or APs in urban areas who do not have proof of land-use rights and who have no other land in other places, compensation for loss of land-use rights at replacement cost, in addition to compensation for their other assets and other assistance. Should APs be found to be non-titled and required to relocate, the proposed Project will ensure they are provided replacement land at no cost to the APs, or cash sufficient to purchase replacement land.

C. Avoiding / Minimizing Involuntary Resettlement

27. All project activities including subprojects will endeavor to avoid involuntary resettlement. If avoidance is not possible, involuntary resettlement impacts will be set to a minimum. Avoiding or minimizing involuntary resettlement impacts is built into the criteria for selecting project activities under each output including subprojects. Screening will be based on the following:

- (i) Identified as one of the top three priorities by beneficiaries in the commune and documented through participatory, multistakeholder consultations conducted by the project;
- (ii) Affordable within the block allocation set aside for the commune;
- (iii) Fulfills all social safeguard criteria as laid out in subproject eligibility section [(see Project Administration Manual (PAM))];
- (iv) Compliant with all environmental safeguard issues as described in safeguards section in the PAM;
- (v) In conformity with land use plans in the commune and the biodiversity corridor;
- (vi) Households in target communes benefit in the form of income generation or cost savings in terms of money, time, and effort and benefits households in the target communes (men, women, or both, and/or families/households);
- (vii) Technically feasible and satisfies preference for mountainous area community-based small scale rural infrastructure interventions; and
- (viii) Arrangements satisfactory to the project have been made for undertaking operations & maintenance (O&M) if applicable.

28. Resettlement impacts will be minimized by observing the following: (i) improvement of small-scale infrastructure designs will be along existing rights of way or following existing alignments; (ii) ensure no project activity including subprojects with the ADB's Category A resettlement criteria is financed under the Project; (iii) local stakeholders will be actively engaged during consultation to ensure the project activities including subproject designs minimize involuntary resettlement impacts and do not entail land acquisition.

29. Further, intensive capacity building across project cycle, and ensuring broad community support in subproject prioritization, planning, selection, and implementation will be observed. Zoning will primarily protect the existing forest resources and different ethnic groups' rights to access non-timber forest products (NTFPs). Fast paced economic developments, if conducted in an unplanned manner, will heavily impact on the last remaining natural forests, ecosystem

services, and forest based livelihoods. The Project will facilitate the provision of tenurial security to ethnic minorities and an Ethnic Groups Development Framework has been prepared in 2010 and updated in 2013. BCC aims at providing incentives, funding, and technical assistance enabling local people to grow trees of their choice in their homestead plantations and community forests for subsistence needs as well as for fuel wood consumption and construction. Micro credit schemes for village/village level enterprises are to be encouraged for local (wood and non-wood) primary processing to emerge or existing ones to become vibrant. The establishment of management regimes in the corridors shall create jobs for local people.

D. Entitlement Eligibility Requirements

30. Eligibility will be determined with regards to the cut-off date, which is taken to be the date on which land and/or assets affected by project activities including subprojects are measured. The APs will be informed of the cut-off date, and any people who settle in the subproject area after the cut-off date will not be entitled to compensation and assistance under the subproject.

31. In addition, the extent of eligibility for compensation in regards to land is determined by legal rights to the land concerned. If the APs have land use rights certificate (LURC), full compensation and assistance for lands and assets upon land will be made. If the APs have no land legal rights or the affected land cannot be legalized, compensation for assets upon lands will be provided but not for the land. However, assistance shall be provided for resettlement assistance and social support to improve or at least restore their pre-project living standards and income level. APs without legal right status will be entitled to benefit schemes of the BCC Project and directly engaged in the Component 3 of the Project—livelihood improvement and small scale infrastructure support in target villages and villages clusters. An entitlement matrix is provided (Appendix 3) and it summarizes the main types of losses and the corresponding nature and scope of entitlements.

IV. COMPENSATION, ASSISTANCE, AND RELOCATION

A. Compensation and Assistance

32. Compensation and assistance will be provided to ensure that the economic and social futures of APs are at least as favorable as they were before the Project. The compensation policy, which encompasses compensation for all affected assets, along with rehabilitation measures, will ensure that all APs are able to, at minimum, restore their incomes, standards of living, and productive capacities to pre-project levels if not better. Specific measures to ensure restoration of incomes and living standards of APs include compensation for lost assets based on (i) as a priority, land-for-land of equivalent productive capacity and at a location suitable and acceptable to the APs, or (ii) in case of the lack of available suitable same-use land or, at the request of an APs who have been informed regarding the options, cash for land or a combination of the two. Compensation will be based on results of the replacement cost survey.

1. Compensation and Assistance for Lands

33. Some lands will be acquired on a temporary basis (i.e., for access tracks and storage areas, etc.). This land will be returned to its original owners and compensation paid for any temporary loss of income from standing crops or other, and the land will be returned to its owners in its original condition. If the temporary acquisition continues for longer than 6 months, as per Decree 69/2009, the AP may request the contractor to pay for land rental.

34. For major losses equal to or more than 10% of the total land holding, as a priority, legal APs will be allocated replacement land of similar type, category and productive capacity, located in the same village and with land title or secure tenure; or, if land is not available or the APs chooses, cash compensation at replacement cost at current market prices plus assistance to

purchase and register land.

35. If the area of the remaining agricultural land is no longer viable, legal APs may request that the Project acquires the entire land holding.

36. Regardless of tenure status and with losses under or equal 10% of the total productive land; and the remaining area is still economically viable for use or meets the expected personal yield, (i) subsistence allowance in cash or in kind (e.g. rice) will be provided to ensure subsistence during transition or relocation; (ii) moving allowance in cash or in-kind (dump trucks) to move salvageable structures and personal belongings; and (iii) appropriate livelihood restoration measures to be determined during detailed measurement survey (DMS).

2. Compensation for Loss of Standing Trees and Crops

37. For owners of crops, trees and aquaculture products whether or not land is owned, the following entitlements are: (i) if standing annual crops are ripening and cannot be harvested, cash compensation at replacement cost equivalent to the highest production of crop over the last three years; (ii) for perennial crops and trees and aquaculture products, cash compensation at replacement cost equivalent to current market value based on type, age, and productive value (future) at the time of compensation; and (iii) for timber trees, cash compensation at replacement cost equivalent to current market value based on type, age and diameter at breast height (DBH) of trees.

38. For loss of garden/pond land that cannot be certified/recognized as residential land, (i) cash compensation of affected portion at replacement cost which is equivalent to the current market value of fishpond, labor and rent of equipment to excavate fishpond, free from transaction costs (taxes, administration fees); (ii) if the currently held fish stocks will not be harvested before the project takes possession of the fishpond, then cash compensation for the projected mature value of fish stock held at the time of compensation; (iii) construction contractor to restore/repair remaining fishpond to return to pre-project condition. If support cannot be provided by the contractor, the AP will be entitled to cash assistance to cover for payment of labor and rent of equipment to restore/repair fishpond; (iv) income restoration and livelihood development assistance shall be provided. The level of assistance will be finalized during consultations with the APs and during the resettlement plan (RP) preparation; and (v) APs shall be entitled to the benefit schemes of the BCC Project and automatically included in Component 3 (livelihood improvement) of the Project.

3. Compensation for Loss of Structures

39. For total impacts on houses and shops, cash compensation at replacement cost for the entire structure equivalent to current market prices of: (i) materials, with no deduction for depreciation of the structure or salvageable materials; (ii) materials transport; and (iii) labor cost to cover cost for dismantling, transfer and rebuild; and (iv) excluding those who will move back to their residual land, timely provision of dump trucks for hauling personal belongings at no cost to the APs. For relocating APs with no impact on business or main source of income: a cash allowance and/or in-kind assistance equal to 16 kg of rice per household member for three (3) months. If tenants must or choose to relocate, they will receive a cash allowance equal to the current rental amount for a transition period of three (3) months, a moving allowance and assistance to find alternative accommodation or premises.

40. For partial impacts on houses and shops, cash compensation at replacement cost for the affected portion equivalent to current market prices of: (i) materials, with no deduction for depreciation of the structure or salvageable materials; (ii) materials transport; and (iii) labor cost to cover cost for dismantling, transfer and rebuild.

41. For secondary structures, cash compensation at replacement cost for the affected portion of structure equivalent to current market prices of: (i) materials and labor, with no deduction for depreciation of the structure or for salvageable materials; (ii) materials transport; and (iii) cost of repair of the unaffected portion.

4. Relocation of Business

42. APs with businesses that are disrupted temporarily and not displaced, cash allowance is provided equal to the provincial daily wage or average daily revenues whichever is higher, for the number of days that business activity is disrupted. For relocating APs with no impact on business or main source of income, a cash allowance and/or in-kind assistance equal to 16 kg of rice per household member for three (3) months.

B. Relocation

43. Under unavoidable situations, if there is insufficient residential land remaining after acquisition, the AP must relocate. When relocation is unavoidable, the following basic principles have been adopted for the Project:

- (i) Physical displacement to resettlement sites will not take place until such time as the sites are ready and equipped with fully functioning infrastructure.
- (ii) In the case of population relocation, efforts shall be made for the existing social and cultural institutions of the people being resettled and host community to be maintained to the extent possible.
- (iii) Preparation of RPs and resettlement sites will be carried out with the full participation of affected people. APs' comments and suggestions will be duly taken into account during the design and implementation phases of the resettlement plans and in preparing the resettlement sites.
- (iv) Adequate budgetary support will be fully committed and be made available to cover the costs of land acquisition, resettlement site preparation, and AP relocation and rehabilitation within the agreed implementation period.
- (v) ADB shall not approve of any civil works contract for any subproject to be financed from the loan proceeds unless the Government has completed satisfactorily and in accordance with the approved RP for that subproject compensation payment and relocation to new sites, and ensured rehabilitation assistance is in place prior to obtaining possession and rights to the land.

44. The APs may choose from the following options:

45. Relocation to the resettlement site: For major losses equal to or more than 10% of the total land holding, as a priority, legal Aps will be allocated replacement land of similar type, category and productive capacity, located in the same village and with land title or secure tenure; or, if land is not available or the APs chooses, cash compensation at replacement cost at current market prices plus assistance to purchase and register land.

46. Self relocation: APs are entitled to assistance:

- (i) Cash compensation at full replacement cost for their legal affected land and structures if they prefer to make their own arrangements for relocation;
- (ii) Subsistence and transportation allowances; and
- (iii) Entitled to benefits scheme of the BCC Project.

47. Relocation assistance: Regardless of tenure status, subsistence allowance in cash or in kind (e.g. rice) will be provided to ensure subsistence during transition or relocation. Moving

allowance in cash or in-kind (dump trucks) to move salvageable structures and personal belongings will be provided.

48. Rental assistance: For relocating APs with no impact on business or main source of income: a cash allowance and/or in-kind assistance equal to 16 kg of rice per household member for three (3) months. If tenants must or choose to relocate, they will receive a cash allowance equal to the current rental amount for a transition period of three (3) months, a moving allowance and assistance to find alternative accommodation or premises

49. Assistance for livelihood stabilization: Relocating APs with main income source affected OR APs losing 10% or more of productive land: a cash allowance and/or in-kind assistance will be provided as provision of life stabilization for APs:

- (i) losing between 10% to 30% –(a) 20 kg of husked rice per person per month for 6 months if not relocating, (b) 20 kg of husked rice per person per month for 12 months if relocating, and (c) 20 kg of husked rice per person per month for 18 months if relocating to a difficult socio-economic condition area;
- (ii) losing between 30% to 50% –(a) 20 kg of husked rice per person per month for 9 months if not relocating, (b) 20 kg of husked rice per person per month for 12 months if relocating, and (c) 20 kg of husked rice per person per month for 18 months if relocating to a difficult socio-economic condition area;
- (iii) losing more than 50% –(a) 20 kg of husked rice per person per month for 12 months if not relocating, also the same amount if relocating, (b) 20 kg of husked rice per person per month for 18 months if relocating to a difficult socio-economic condition area; and
- (iv) entitled to BCC Project's benefit schemes and automatically included in Component 3 (livelihood improvement).

50. Special assistance to poor households: For vulnerable households, the following are available:

- (i) an additional allowance of 1 month supply of rice per person in the household;
- (ii) provision of labor and additional materials at no cost to APs to assist during rebuilding of houses;
- (iii) appropriate livelihood restoration measures to be determined during DMS; and
- (iv) entitled to the benefit schemes and automatically included in Component 3 (livelihood provision) of the Project.

C. Voluntary Donation

51. The ADB-SPS on Involuntary Resettlement does not apply to negotiated settlements even if among the stakeholders, unless expropriation would result upon the failure of negotiations. Thus, consultation processes, policies, and laws that are applicable to such transactions; third-party validation; mechanisms for calculating the replacement costs of land and other assets affected; and record-keeping requirements will be in line with this BCCRF. This RF shall ensure symmetry of information and bargaining power between involved parties.

52. Since small-scale infrastructure constructions will positively impact on the incomes and livelihoods of local people, following priorities and consensual agreement of the local people and considering that the scale of impact is very minor, the voluntary land acquisition for the BCC subproject can be applied using a Voluntary Land Donation Form (see Appendix 4 for a sample form) must be attached to the Village RP. When land is communally owned, a communal Voluntary Land Donation Form will be issued. Voluntary donation takes on the principles below:

- (i) Subproject site is selected in full consultation with landowners and any non-titled

- affected people;
- (ii) Voluntary donations do not severely affect the living standards of affected people and the amount of agricultural or other productive land to be acquired from each AP does not exceed 5% of the total productive landholdings of the household;
- (iii) Land donations are linked directly to benefits for the affected people;
- (iv) Any voluntary 'donation' will be confirmed through written record and verified by an independent third party such as Independent Monitoring Organization;
- (v) There is an adequate grievance process (as described in para.65);
- (vi) No AP will be displaced from housing and severely affected;
- (vii) Vulnerable AP(s) will directly benefit from Components 2 and 3 of the Project

53. In cases of restriction to land use and/or livelihood sources, impacts of which are determined to be minor and the affected households do not want to receive compensation for the impacts; the principles and procedures will be applied following the same for those with voluntary donation of affected land and or assets upon lands. If the impacts are significant as can be finalized during the consultations with the affected households, the compensation and options for assistance must be discussed with the affected households and presented in the RP. The affected households shall be automatically included in the benefit schemes of the BCC Project.

54. In the event APs who had long been utilizing resources that are eventually zoned off will be restricted to access said areas, resettlement and compensation entitlements will be provided following the consultations with them during the RP preparations. These APs will be automatically engaged in the Project components and entitled to BCC Project's benefit schemes.

V. IMPLEMENTATION ISSUES

A. Information Disclosure, Consultation and Participation

55. **Information disclosure.** In the RP preparation following the DMS and formulation of the Inventory of Losses (IOL) the project beneficiaries will be provided information on:

- (i) Description of the project activity/subproject;
- (ii) Potential resettlement impacts by the project activity/subproject;
- (iii) Project Resettlement Policy Framework (concentrate on the entitlements);
- (iv) Implementation schedule; and
- (v) Grievance redress mechanism.

56. The local people and affected households and other stakeholders will continue to be consulted during RP updating and implementation, following a two-way process – information dissemination and gathering of feedback and suggestions.

- (i) Affected households will be notified at least 6 months prior to the date that the land will be acquired by the project activity/subproject.
- (ii) Public Consultations: A first public consultation with local people and the affected households and other stakeholders will be held prior to the start of the inventory of losses (IOL), as a way of introducing the subproject and the resettlement policy to the local population. Focus groups are to be held with representatives of households affected by land acquisition and with all households affected by lose of a dwelling. During the focus groups participants can express their concerns that should be addressed in the resettlement process and on their preferences for compensation and income restoration.

- (iii) A second Public Consultation will take place to share the results of the IOL, the entitlements and the resettlement plan. This public consultation will include discussing the results of the impacts survey with the affected households and getting feedbacks and suggestions on their compensation and entitlements, including income restoration and relocation options.
- (iv) Further public consultations will continue during implementation. These consultations should take place (i) following completion of the DMS and review and updating of unit costs for affected assets, where the resettlement committees consults with the affected households individually and/or in group in connection with the updating of compensation and entitlements and, as warranted, income restoration programs and relocation plans; and (ii) following approval of the updated RP, to present to the affected households in the communes (i.e., also referred to as “final disclosure meeting”) the validated/updated list of affected people, compensation and entitlements due to them, and schedule of delivery of compensation and entitlements.
- (v) Disclosure of RP: The draft RP will be uploaded on the ADB website. Following approval of the draft RP by EA and ADB, the final RP will again be disclosed to the affected households and uploaded on the ADB website.
- (vi) The updated RP (draft and approved) to be prepared following detailed design will likewise be disclosed to the affected households and uploaded on the ADB website.

57. Information disclosure is an ongoing process beginning early in the project cycle and continuing throughout project preparation and implementation. The process must provide timely information to communities in order that they may meaningfully contribute to project design, decisions and also mitigation. Provision of timely and accurate information will stem misinformation and inaccurate rumors from circulating in communities. During consultations particular attention is given to vulnerable subgroups in the community to ensure their understanding and collective input. Public notice is given as regards details of the approved draft resettlement plan, or framework, before project appraisal by the ADB. This draft will also be disclosed on the ADB website. Following the census of affected persons, the final resettlement plan, as endorsed by the GOL, is further disseminated to the affected communities and posted on the ADB website. Any updates or revisions to the final resettlement plan must be further disseminated to affected communities and again, posted on the ADB website.

58. The Provincial Resettlement Committees (PRCs) and District Resettlement Committees (DRCs) will conduct a series of public meetings to provide information regarding project activities and the proposed resettlement and compensation arrangements.

59. These public meetings will be needed to: (i) disseminate information on inventory and pricing results, (ii) inform the APs on amounts of compensation and supports of each affected household, (iii) listen to their feedback and suggestions, and (iv) for revising or adjusting the inaccurate data, if any. It is important that APs are informed well in advance of the date, time and location of each meeting, and that reminders are also provided. It is essential that these meetings enjoy maximum participation as this will reduce misunderstandings and potential for conflict. The DRCs must ensure that they post this information on the announcement board at the Village Center for at least 15 days.

60. The contents of the public meetings will cover the following:

- Subproject components. This includes about the project activity as well as places where more detailed information can be sought.

- Project activity/Subproject impacts. Anticipated impacts on the people living and working, making livings in the affected areas of the project including explanations about the need for land acquisition for the subproject components.
- APs rights and entitlements. The rights and entitlements for different categories of APs, including the entitlements for those losing businesses, jobs and income. Options for land-for-land and cash. Options regarding reorganizing and individual resettlement, and provisions and entitlements to be provided for each as well as opportunities for BCC project-related employment will be applied for all APs
- Grievance mechanism and the appeal process. All APs are to be informed that project policies and procedures are intended to ensure their pre-project living standards are at least restored if not improved. All APs must also be informed that if there is any confusion or misunderstanding about any aspect of the project, the commune or district resettlement committee can help resolve problems. If they have complaints about any aspect of the land acquisition, compensation, resettlement, and rehabilitation process, including the compensation rates being offered for their losses, they have the right to make complaints and to have their complaints heard. APs will also receive an explanation about how to access grievance redress procedures, according to Project's mechanisms.
- Resettlement activities. All APs are to be given an explanation regarding compensation calculations and compensation payments, monitoring procedures (which will include interviews with a sample of APs), reorganization, relocation to an individual location/self-relocation, and preliminary information about physical works procedures.
- Organizational responsibilities. All APs are to be informed about the organizations and levels of Government involved in resettlement and the responsibilities of each, as well as the names and positions of the Government officials with phone numbers, office locations, and office hours if available.
- Implementation schedule. All APs should receive the proposed schedule for the main resettlement activities and informed that physical works would start only after the completion of all resettlement activities and clearance from the project area. It should be clarified that APs would be expected to move only after full payment of compensation for their lost assets. Implementation schedules and charts will be provided to resettlement committees at all levels.

61. Following all public meetings with APs and stakeholders the DRC must complete the following activities:

- Make a list of all APs who joined the meeting;
- Make a complete record of all questions, comments, opinions, problems and decisions that arose during the information and consultation meetings.
- Deliver leaflets and project announcements to the APs.

62. **Documents disclosure.** According to the ADB SPS, the following documents are submitted to the ADB for Disclosure on the ADB website:

- (i) Draft RP or RF endorsed by the Client before project appraisal;
- (ii) Final RP endorsed by Client after the DMS (Census of APs);
- (iii) Updated RP following any changes from the DMS or other changes introduced (if any); and
- (iv) Resettlement monitoring reports.

63. **Community Participation and Consultation.** The APs will participate throughout the various stages of planning and implementation of subproject RPs. They will be properly informed of all activities to be carried out. The information should include the specific activities, schedules, and potential impacts and mitigation measures. The information should be in a form of public meetings to be held by the respective Provincial Agriculture and Forestry Offices (PAFOs), District Agriculture and Forestry Offices (DAFOs), and village committees.

64. APs will be fully informed by the relevant agencies related to entitlements, compensation and rehabilitation options and grievance mechanisms under the RPs. This can be in a form of a project brochure developed with relevant messages that can be easily understood by the APs and issued to APs before subproject appraisal. Extensive meetings with APs will also allow the implementing agencies to identify the needs and preferences of APs pertaining to compensation and rehabilitation assistance and to reduce any negative potential impacts caused by the Project.

65. **Grievance Redress Procedure.** Article 13 of Decree 192/PM requires the Project to establish an effective mechanism for grievance resolution. Lao PDR legal requirements for this mechanism are further described in Part VI of the Decree's Implementing Regulations, and in detail in the Technical Guidelines. Decree 192/PM determines that the prime responsibility for grievance resolution is the Project proponent. As they are responsible for carrying out Project works that are likely the source of grievances then they can best respond to and resolve grievances in the most timely and acceptable method. The objectives of this mechanism are to ensure AP satisfaction with RP BCC implementation, in particular, the RF/RP.

66. At the central level the national project management office (NPMO) will be responsible for the resettlement and environment-related grievances. The NPMO will (i) make public the existence of this Grievance Redress Mechanism, through public awareness campaign, (ii) review and address grievances of stakeholders of the Project, in relation to either the Project, any of the service providers, or any person responsible for carrying out any aspect of the Project; and (iii) proactively and constructively responding to them. The

67. The Project will rely on the existing village arbitration units where they have already been established in core villages. The village arbitration unit generally consists of the village headman and/or deputy chief, village elders and village representatives of the Lao Women's Union (LWU) and Lao Front for National Construction (LFNC); the unit is responsible for settling disputes between villagers through conciliation and negotiation. At the district and provincial levels, the district and provincial resettlement committees that are composed of concerned departments, local officials, village headmen and mass organizations will act as grievance officers.

68. The following procedures are proposed for redress of grievances during the Project.

- (i) Stage 1: In the first instance, APs will address complaints on any aspect of compensation, relocation or unaddressed losses to the village arbitration unit or other designated village grievance officers. The unit will organize a meeting with the complainants to resolve the issue using its traditional methods of conciliation and negotiation; the meeting will be held in a public place and will be open to other APs and villagers to ensure transparency.
- (ii) Stage 2: If within 5 days of lodging the complaint, no understanding or amicable solution can be reached or no response is received from the village arbitration unit, the AP can bring the complaint to the District Resettlement Committee (DRC). The DRC will meet with the AP to discuss the complaint, and provide a decision within 15 days of receiving the appeal.
- (iii) Stage 3: If the AP is not satisfied with the decision of the DRC or in the absence of

any response, the AP can appeal to the Provincial Resettlement Committee (PRC). The PRC will provide a decision on the appeal within 15 days.

- (iv) Stage 4: If the AP is still not satisfied with the decision of the PRC, or in the absence of any response within the stipulated time, the AP can submit his/her grievance to Ministry of Natural Resources and Environment (MONRE)? who will render decision within 15 days of receiving the appeal.
- (v) Stage 5: As a last resort, the AP may submit his/her case to the Court of Law. The complaint will be lodged with the Court of Law; the decision of the Court will be final. Although the technical guidelines for resettlement designate this elevating of the complaint to the local mass organizations, non-benefit organizations and AP representatives, in order to ensure the availability of adequate resources to carry out this procedure, the MONRE will be responsible for forwarding the complaint and ensuring its process in the courts.

69. All legal and administrative costs incurred by APs and their representatives throughout this process are to be covered by the Project.

70. At each stage of the grievance redress process, careful written records will be maintained. The village arbitration unit will submit reports to the DRC documenting the following: (i) the complaints as received; (ii) the names and other pertinent information about complainants; (iii) the dates of the original complaint, meetings and any other actions; and, (iv) the outcomes and/or resolution. The DRC, PRC and MONRE will each maintain similar records for appeals that are submitted to them. The records of grievances will be included in regular progress reporting on the subproject.

71. In addition the grievance mechanism described above, APs may also (or permit representatives on their behalf raise their concern or complaint with the ADB Southeast Asia Department, through the ADB Resident Mission office in Vientiane if APs are still not satisfied with the resolution of their complaints at the Project and central level.

B. Preparation of Resettlement Plans: Procedures and Methods

72. A resettlement plan will be prepared if a subproject or any project activity has potential involuntary resettlement impacts which will be determined through involuntary resettlement screening and categorization done during feasibility study stage. A screening and categorization form is provided in Appendix 5. Scoping and preparation for resettlement will be part of the updated social assessment.

73. The preparation of RPs will require community participation. Under the guidance of MONRE, specifically the NPMO and National Safeguards Specialist, the PAFO will work closely with the APs and local administrative authorities, resettlement committees, community organizations, women's group, minority groups in the area throughout the various stages of the RPs, i.e., from preparation to monitoring of RPs.

74. A detailed socio-economic survey and census will be conducted with each affected household. This must cover 100% of the affected households. This will include a detailed measurement study in order to formulate the inventory of losses and calculate compensation for lost land, dwellings, structures and other assets. This will identify severely affected households and those partially affected. Other social and development assistance measures needed will be discussed with the APs and confirmed, then the final resettlement budget calculated. It is important that the survey be gender responsive and must include the men and women of the household.

75. Participatory meetings will be convened with the community to explain the process that will be followed in obtaining information regarding the census and DMS and as to why these are

necessary. Separate meetings should be held with members of vulnerable groups to ensure that these people understand the process. Holding separate meetings will allow them to freely ask questions without feeling intimidated or less knowledgeable than others. These meetings will allow the community to provide feedback in regards to the process and facilitate coordination of events.

76. Valuation of affected assets will be obtained during the socio-economic data collection and concurrently, details of land transactions occurring over the past 12 months will be obtained by the survey teams from each affected village. This will provide a better indication of the current market value of any land being acquired. In accordance with ADB policy, current market values will be applied. In regards to structures and dwellings, replacement cost surveys will be undertaken by the DRCs in each district in order to obtain unit prices for building materials and other components and assets lost. Any AP not satisfied with the level of compensation applied will be able to appeal according to the Grievance Process established for the project. A guideline on socio-economic survey as well replacement cost survey is presented in the Appendix 6.

77. The following general steps will be followed in the formulation of each RP:

- (i) Step 1: In further refining the subproject design, consult with potential APs and engineers and environment specialist who are working for BCC Project to avoid resettlement effects as much as possible as already mentioned in the Section III (D) to keep the impact minimum.
- (ii) Step 2: Carry out a census and socio-economic survey of all the potential APs as part of the social assessment. This should include the socioeconomic data of the APs and the detailed measurement survey that inventories each household's losses. The socio-economic survey will be carried out by the resettlement committee or consultant and will be conducted on a participatory basis with all members of each household. The census survey establishes the cut-off date for the eligibility of entitlement. It will be carried out with the attendance of relevant local authorities. The following data should be collected:

Data about APs:

- Total number of APs
- Demographic, education, income, and occupational profiles
- Inventory of all property and assets affected
- Socioeconomic production systems and use of natural resources
- Inventory of common property resources if any
- Economic activities of all affected people, including vulnerable groups
- Social networks and social organization
- Cultural systems and sites

Data on land and the area:

- Map of the area and villages affected by land acquisition
- Total land area acquired for the Project
- Land type and land use
- Ownership, tenure, and land use patterns
- Land acquisition procedures and compensation
- Existing civic facilities and infrastructures
- Cultural systems and sites

- (iii) Step 3: In parallel to AP census survey, continue consultation with APs to identify their preferences and special needs that the RP needs to address. In addition, information on market prices for land, crops, and other assets need to be collected from respective provincial, district, and village authorities and the local market, so that the cost estimates for the RP can be done.
- (iv) Step 4: Prepare the RP in approved format. The Entitlement Matrix in this Framework will be used and applied to the inventory of losses obtained from the DMS, specifying the number of APs, the size of land affected, the number of other assets affected, lost, and the compensation amount for each category of loss.
- (v) Step 5: Present the draft RP to the ADB and following approval, disseminate the RP at public meetings for the subproject as well as post on the ADB website. Any comments made during the meeting need to be documented, and where appropriate, incorporated into the finalized RP.

78. The outline of a RP is enclosed in the Appendix 7. The RP must be updated following the completion of the detailed designs and conducting of the DMS. This will provide up to date and accurate figure regarding the scope of impact, identification of APs and severity of impact, as well as an updated compensation calculation. The RP should be reviewed to update any changes in market prices for replacement values and would need to be reviewed again at the time compensation is due for payment. If rates and prices are found to be out of date, revised updated costs must be used. The procedure for updating is also discussed below under RP Implementation.

79. If after initial screening, a subproject or project activity is deemed to have no land-acquisition or any other involuntary resettlement impact, an Official Letter shall be submitted to the NPMO by the Provincial Project Office (PPO). The NPMO, with support from its consultant, will verify the situation and submit an Official Letter requesting ADB to issue no-objection letter for the subproject or project activity. Once the no-objection letter is issued, civil works can be started.

C. Ethnic Groups and Gender Issues

80. Any resettlement issues covering affected ethnic groups shall strictly refer to the BCC Ethnic Groups Development Framework (LAO) for guidance. Similarly, the Project Gender Action Plan (GAP) will serve as reference as regards gender concerns.

VI. INSTITUTIONAL ARRANGEMENT AND IMPLEMENTATION

81. MONRE, through the NPMO, will oversee the RP activities of the concerned Provincial Offices of Natural Resources and Environment (PONREs) and provide technical assistance if necessary. MONRE will be, as the project proponent, the responsible ministerial authority for resettlement planning and implementation.

82. A Provincial Project Director who shall be responsible for implementing all components of the subprojects or project activities including the RP will head PPO within PONRE. PONREs shall submit all RPs to NPMO, for forwarding to ADB for concurrence.

83. PONREs, with the assistance of the respective District Offices of Natural Resources and Environment (DONREs), will be responsible for overall planning, preparation and approval of RPs, implementation and coordination of the proposed Project including RP. The NPMO will: (i) review and approve all RPs submitted by the provinces; (ii) approve RPs after obtaining concurrence from ADB; (iii) allocate necessary RP budget; (iv) periodically supervise RP implementation progress; (v) coordinate with other relevant central government agencies, and (vi) report these directly to ADB. PONREs will designate one full-time Resettlement Officer from

within PONRE, and one from DONRE to ensure that resettlement-related activities are properly planned, implemented and monitored. The Resettlement Officer designated will be responsible for organizing the affected districts and villages to carry out the activities designated in this RF.

84. PONREs will be responsible for preparing RPs, and DONREs at district level will be responsible for implementing and monitoring day-to-day activities including coordination with civil works schedule and financial management. Activities of PONREs are, but not limited to the following: (i) consultation with APs; (ii) carry out census, inventories of assets, socio-economic surveys; (iii) coordination with implementers, including contractors where they are used, on civil works schedule; (iv) coordination with various departments at the district and village levels (iv) assist APs in finding new replacement land; (v) prepare rehabilitation assistance to APs at village levels; and (vi) schedule resettlement activities and reporting regularly to the NPC on progress and outstanding issues. To ensure that the preparation of RPs is transparent and conducted in a participatory manner, PONREs and DONREs will work closely with the APs, concerned local administrative authorities and local-based organizations (women, ethnic minority groups etc.).

85. Resettlement committees at provincial and district levels will be established to review and approve the RPs submitted by the PONRE for forwarding to the NPC. The resettlement committees will also act as an advisor and will assess and monitor the RP activities. They will also act as grievance officers.

86. The provincial resettlement committees (PRCs) will be established and will be headed by the Governor or Vice Governor of the participating province. Members of the PRC are, but not limited to the following: concerned district governors, Department of Finance (Land Property Office), PONRE, the Department of Planning and Investment (DPI), Provincial Water Resources and Environmental Office, LWU and LFNC of the province, and concerned DAFO heads.

87. The DRC will be headed by the district governor and will be composed of representatives from DONRE, APs, LWU and LFNC of the district, heads of affected villages.

88. There is a need for capacity building in resettlement planning for the above mentioned implementing stakeholders expected to be involved and responsible for the final preparation and implementation of resettlement plans. Costs for the capacity building in respect of resettlement have been incorporated into Component 3 with other safeguard topics. It is recommended to organize resettlement related training sessions prior to the start of resettlement activities, where the following topics have to be introduced:

- Latest policies, decrees and technical guidelines;
- Basic principles of resettlement planning and the conceptual approach on entitlements for losses;
- Restoration and rehabilitation of livelihoods;
- Institutional requirements;
- Staff and training requirements; and
- Others.

89. Decision? for the successful implementation of the resettlement plan will be the coordination and cooperation of the resettlement committees at national, provincial, district and village level. The most practical requirements these committees will have to jointly work on are among others:

- Information campaign and consultation with project affected people;
- Compensation payments;
- Grievance resolution;

- Progress completion reporting;
- Loss of land and other assets due to project implementation;
- Resettlement costs;
- Income restoration and rehabilitation measures;
- Negotiation and compensation activities;
- Local-based organizations to assist resettlement activities;
- Community mobilization;
- Social construction supervision.

VII. BUDGET

90. An itemized budget in the RP is required for all resettlement activities, including compensation for land acquisition. An annual resettlement budget is prepared, showing the budget-scheduled expenditure for key items. Land acquisition and resettlement costs are reflected in the project costs.

91. Resettlement costs, including the income restoration and livelihood development, shall be from the counterpart fund. The provinces are responsible for arranging the resettlement budget sufficiently and timely allocated for resettlement activities.

VIII. MONITORING AND REPORTING

92. Monitoring is the continuous process of assessment of project implementation, in relation to agreed schedules, the use of inputs, infrastructure and services by the Project. Monitoring provides all stakeholders with continuous feedback on implementation. It identifies actual or potential successes and problems as early as possible to facilitate timely correction during project operation. It provides systematic and continuous collection and analysis of information on the progress of the project. It is a tool to identify strengths and weaknesses and to enable timely decisions for corrections.

93. The implementation agencies particularly the PPO-assigned staff are responsible for internal monitoring of Project PR at provincial level, as well as regularly external monitoring by the monitoring organization.

A. Internal Monitoring

94. All resettlement – related activities are monitored by internal monitoring experts who will follow-up the implementation of RP. The internal monitoring of RPs and main components is the responsibility of PPO staff and implementation consultants. All specialists working for internal monitoring will cooperate closely with the DRC to implement and update resettlement data.

95. Monitoring Indicators that are included:

- (i) An initial key indicator will be, as per assurances to the ADB, the payment of compensation, relocation to new sites, and rehabilitation assistance being in place before award of civil contracts and these will be monitored under each of the Civil Contracts.
- (ii) The other main indicators that will be monitored regularly are:
 - Payment of compensation to all APs in various categories, according to the compensation policy described in the RP.
 - Delivery of technical assistance, relocation, payment of subsistence and moving allowances.
 - Delivery of income restoration and social support entitlements.
 - Public information dissemination and consultation procedures.

- Adherence to grievance procedures and outstanding issues requiring management's attention.
- Priority of APs regarding the options offered.
- Coordination and completion of resettlement activities and award of civil works contract.
- The benefits provided from the BCC Project

96. The implementing agencies will collect information every month from the different resettlement committees. A database of resettlement monitoring information regarding the Project is being maintained and updated every month.

97. The implementing agencies will submit to the PPO and assisted by the project consultants will submit to the ADB as part of BCC Project's regular progress report to ADB, a monitoring report on the progress of implementation of the RP every 6 months, from the ADB's approving this updated RP. The internal monitoring reports shall include the following topics:

- The number of APs by category of impact per component, and the status of compensation payment and relocation and income restoration for each category.
- The amount of funds allocated for operations or for compensation and the amount of funds disbursed for each.
- The eventual outcome of complaints and grievances and any outstanding issues requiring action from management.
- Implementation problems.
- Revised actual resettlement implementation schedule.

B. External Monitoring

98. PPO BCC will retain the services of an external entity or institute as the qualified experienced external monitoring organization to undertake objective monitoring and evaluation of RP implementation of BCC Project.

99. Monitoring and Evaluation Indicators: The following indicators will be monitored, upon approval of this RP, and evaluated by the monitoring organization:

- (i) Payment of compensation will be as follows: (a) full payment to be made to all affected persons sufficiently before land acquisition; adequacy of payment to replace affected assets; and (b) compensation for affected structures should be equivalent to the replacement cost of materials and labor based on standards and special features of construction with no deductions made for depreciation or the value of salvageable materials.
- (ii) Coordination of resettlement activities with construction schedule: the completion of land acquisition and resettlement activities for any component should be completed prior to award of the civil works contract for that component.
- (iii) Provision of technical assistance for house construction to APs who are rebuilding their structures on their remaining land, or building their own structures in new places as arranged by the project, or on newly assigned plots.
- (iv) Provision of income restoration assistance under the Project.
- (v) Entitlements of BCC project benefits
- (vi) Public consultation and awareness of compensation policy: (a) all APs should be fully informed and consulted about land acquisition, leasing and relocation activities; (b) the monitoring team should attend at least one public consultation meeting each month to monitor public consultation procedures, problems and issues that arise during the meetings, and solutions that are proposed; (c) public awareness of the compensation policy and entitlements will be assessed among all APs; (d)

assessment of awareness of various options available to APs as provided for in the RP.

- (vii) Affected persons should be monitored regarding restoration of productive activities.
- (viii) The level of satisfaction of APs with various aspects of the RP will be monitored and recorded. The operation of the mechanisms for grievance redress, and the speed of grievance redress will be monitored.
- (ix) Throughout the implementation process, the trends of living standards will be observed and surveyed. Any potential problems in the restoration of living standards will be reported.

100. **Monitoring Methods.** The methodology for conducting monitoring and evaluation of the RP implementation includes the following activities, which will commence upon approval of this updated RP:

- (i) A socioeconomic survey is required before, during, and after resettlement implementation to provide a clear comparison of success/failure of the resettlement plan. The sample size should be 100% of relocating households and severely affected farmers, and at least 20% of all other households. The sample survey should be conducted twice a year, using the same or similar questionnaire as that used for the DMS baseline, and sampling the same 20% of marginally affected APs and 100% of severely affected APs.
- (ii) The survey should not omit women, elderly persons, and other vulnerable target groups. It should have equal representation of male and female respondents. Certain set questions in the interview should be specifically categorized to be answered by female members of the family only.
- (iii) A post-resettlement evaluation will be carried out 6 to 12 months after completion of all resettlement activities.
- (iv) Periodic participatory evaluations and appraisals allow the monitoring organization to consult with the various stakeholders (local government; the Compensation, Support and Resettlement Committees; PPOs, implanting agencies; nongovernmental organizations; community leaders; and APs). Participatory rapid appraisals will involve obtaining information, identifying problems and finding solutions through participatory means which will include the following:
 - Key informant interviews with selected local leaders, resettlement committee members.
 - Focus group discussions on specific topics such as compensation payment, income restoration, and relocation.
 - Community public meetings to discuss community losses and impacts, construction work employment.
 - Structured direct field observations on the status of resettlement implementation, plus individual and group interviews for cross-checking purposes.
 - Informal surveys and interviews of APs, host communities, special interest or vulnerable groups and women.
 - In-depth case studies of problems that have arisen during internal or external monitoring requiring special efforts for resolution.

101. The monitoring organization will maintain a database of resettlement monitoring information that will be updated every 6 months. It will contain certain files on each affected household and will be updated based on information collected in successive rounds of data collection. All databases compiled will be fully accessible by implementing agencies and NPMO.

102. The monitoring organization is required to submit the findings of the periodical monitoring every 6 months. These monitoring reports shall be submitted at the end of each

quarter of monitoring activity to the NPMO, which in turn will submit these reports to ADB as an annex of its progress report

103. The report will contain (i) a report on the progress of RP implementation, (ii) deviations, if any, from the provisions and principles of the RP, (iii) identification of problem issues and recommended solutions so that implementing agencies are informed about the ongoing situation and can resolve problems in a timely manner, and (iv) a report on progress of the follow-up of problems and issues identified in the previous report.

104. The monitoring reports will be discussed in a meeting between the MO, NPMO, PPOs and implementing agencies held immediately after submission of the report. Necessary follow-up action will be taken based on the problems and issues identified in the reports and follow-up discussions.

105. Evaluation is an assessment at a given point of time of the impact of resettlement and whether stated objectives have been achieved. The external monitor will conduct an evaluation of the resettlement process and impact 6 to 12 months after completion of all resettlement activities, using the same survey questionnaire and sample as used during the monitoring activities.

Appendix 1: FIP Additional Financing Contributions to the Project Outputs

A. Project Outputs & Activities

1. Given the diversity of agents and drivers of deforestation and degradation, there is also a wide range of possible activities that AF can adopt to address them. Their common feature is that they are designed to reduce deforestation and leakage permanently, while avoiding adverse social and environmental impacts and fostering positive impacts.

2. These activities are aimed at increasing the value of a standing forest (whether it is intact or not) through increasing productivity and income generation potential, strengthening the compliance and law enforcement activities and the enhancing the value of existing deforested areas to relieve pressure on intact forests. The aim is to generate additional incomes for the deforestation agents and thus make deforestation 'less necessary'. However, these activities must also be consistent with, and complementary to the BCC activities, and hence integrated into the BCC project design.

1. Output 1: Institutions and Community Strengthened for Biodiversity Conservation Management and Ready to Implement REDD+

3. Under output 1 the BCC investments are geared towards strengthening the capacity of the national, provincial, district and cluster levels in corridor planning, corridor management, and providing protection and sustainable use policies, guidelines, and local regulations for enforcing the biodiversity corridor management plan.

4. The AF will focus on: (i) strengthening land use planning in accordance with legal requirements; (ii) integrated forest restoration and village investment planning; (iii) institutional capacity building and training especially for carbon stock monitoring; and (iv) community engagement & participation.

2. Output 2: Biodiversity Corridor Restored, Ecosystem Services Protected, Maintained and REDD+ Ready

5. The second output deals with village and Kum Ban-based forest protection and forest restoration. The bulk of the BCC investments under output 2 are going to forest restoration, which will cover about 3,900 ha in the form of enrichment planting, NTFP planting and agroforestry. The Project intends to restore at least 9,000 ha forest, in 5 districts. It plans to establish inventory sample plots, conduct biodiversity survey/reports, and draft Kum Ban forest management plans to move towards sustainable forest management, in order to enhance the ability of the BCC Project to attract REDD funding.

6. The FIP additional financing program will focus on strengthening the enforcement capacity of Kum Ban and village-based forest protection. The FIP investments will target forest restoration in around 1,450 ha through assisted natural forest restoration and enrichment planting, agroforestry and NTFP production for livelihood enhancement and a similar area of former forest land with insufficient tree cover to regenerate naturally restored with indigenous species through planting and protection against free-range grazing.

7. The AF will specifically focus on: (i) forest protection and law enforcement; (ii) forest restoration & reforestation; (iii) Validation, Verification, Registration and carbon credits; and (iv) benefit sharing through payment for ecosystem services (PES) arrangements together with the private sector.

3. Output 3: Livelihoods Improved and Small-scale Infrastructure Support Provided in Target Villages

8. Under BCC Output 3, 'Sustainable livelihoods improved and small-scale, low emission infrastructure support provided in target Kum Bans and villages' focuses on demand-driven livelihood and small-scale infrastructure subprojects prioritized in participatory consultations at the start of project will be identified and undergo a rigorous screening process based on village condition and development plan. Each selected Kum Ban has a block allocation for community development infrastructure and livelihood improvements comprising NTFP production and processing, home gardens, livestock farming, improved farming systems for annual and perennial crops and other interventions selected by beneficiaries. This output also promotes a establishment of Village Development Funds (VDF) as a decentralized financial instrument, managed by the Kum Ban of village committees mechanism as a decentralized local level instrument to receive REDD funding for carbon sequestration.

9. The AF will focus on: (i) improving traditional subsistence agricultural practices; (ii) the development of alternative agro-forestry and forestry-pasture-based livelihood systems; and (iii) promotion and cultivation of special cash crops.

4. Output 4: Project Management and Support Services Provided

10. BCC Output 4, focuses on the provision of project resources, capacity and management structures for the successful execution of the Project at the national and provincial levels (i.e. provincially based provincial project management offices (PPMOs) and provincial project offices (PPOs)), as well as at Project Implementation Offices at the District level.

11. 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 (FIP National Coordinator and FIP Accountant); strengthening of provincial project management offices (PPMOs) in Sekong and Attapeu provinces and district level project implementation offices (PIOs) in Phouvong and Dakcheung districts respectively comprising project administration staff, together with REDD+, agro-forestry and small enterprise development specialists; the establishment of Kum Ban level 'working groups' for Forestry/REDD+, livelihood support and village enterprise development; monitoring social and environmental safeguards; and specific initiatives to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

Appendix 2: Potential FIP Additional Financing Villages

Province	District	Cluster	Village
Sekong	Dak Cheung	Dakpar	Bronggnai Brongnoi + Brongyai Dakpaneu DakMoung Dakpar km 20 Dakpar + Daklan
		Tateau	DakTrang DakMi Dak Bu Dak Le Dak Tring DakMongYai + Noi
		Xekaman	Dak Ta OukNoy DakMuan Dak Dome DakMun Dak Ta OukYai DakYrung Dak Dian Mangha
Attapeu	Phouvong	Vongvillai	Vongsomphou Vangyang Phouhome Phouxay Lamong
		Namkong	Namkong Vonglakohone Viangxai

Appendix 3. Entitlement Matrix

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
<p><u>Marginal Loss of Productive Land</u> (Agriculture/Aquaculture/Forest/Garden- loss under or equal 10% of the total productive land; and the remaining area is still economically viable for use or meets the expected personal yield)</p>	<p>Legal owner or occupant identified during DMS.</p>	<p>Cash compensation at replacement cost which is equivalent to the current market value of land within the village, of similar type, category and productive capacity, free from transaction costs (taxes, administration fees).</p>	<p>Legal users are those with recognized land use rights such as registered title, land certificate, survey certificate, tax receipts and including unregistered users as per Land Law.</p>
	<p>Regardless of tenure status</p>	<ul style="list-style-type: none"> ▪ Subsistence allowance in cash or in kind (e.g. rice) will be provided to ensure subsistence during transition or relocation. ▪ Moving allowance in cash or in-kind (dump trucks) to move salvageable structures and personal belongings ▪ Appropriate livelihood restoration measures to be determined during DMS 	<ul style="list-style-type: none"> ▪ The type and amount of allowance will be determined during DMS. ▪ For example, 3 months supply of rice per person (16 kg per person x 3 months) as transition) for relocating APs. ▪ The rate will be verified through interviews with informal shop owners to get an estimate of daily net profit.
<p><u>Severe Loss of Productive Land</u> (Agriculture/Aquaculture/Forest/Garden) Loss by or more than 10% of the total productive land; and the remaining area is no longer economically viable for use or does not meet the expected personal yield)</p>	<p>Legal owner or occupant identified during DMS.</p>	<p>For major losses equal to or more than 10% of the total land holding, as a priority, legal APs will be allocated replacement land of similar type, category and productive capacity, located in the same village and with land title or secure tenure; or, if land is not available or the APs chooses, cash compensation at replacement cost at current market prices plus assistance to purchase and register land.</p> <p>If the area of the remaining agricultural land is no longer viable, legal APs may request that the Project acquires the entire land holding.</p> <p>All transaction fees, taxes and other costs associated with allocation of replacement land with title or secure tenure will be paid by the Project. If the head of household is married, the title or land certificate will be issued in the names</p>	<p>Users with temporary or lease rights APs that hold a lease for use of agricultural land (e.g., for a concession) will receive compensation equal to the remaining value of the lease.</p>

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
		<p>of both spouses.</p> <p>Relocating APs with main income source affected OR APs losing 10% or more of productive land: a cash allowance and/or in-kind assistance will be provided as provision of life stabilization for APs:</p> <p>(i) Losing between 10% to 30%.</p> <ul style="list-style-type: none"> • 20 kg of husked rice per person per month for 6 months if not relocating • 20 kg of husked rice per person per month for 12 months if relocating • 20 kg of husked rice per person per month for 18 months if relocating to a difficult socio-economic condition area <p>(ii) Losing between 30% to 50%</p> <ul style="list-style-type: none"> • 20 kg of husked rice per person per month for 9 months if not relocating • 20 kg of husked rice per person per month for 12 months if relocating • 20 kg of husked rice per person per month for 18 months if relocating to a difficult socio-economic condition area. • iii) Losing more than 50% • 20 kg of husked rice per person per month for 12 months if not relocating, also the same amount if relocating • 20 kg of husked rice per person per month for 18 months if relocating to a difficult socio-economic condition area • AND • Entitled to BCC benefit schemes and automatically included in Component 3 (livelihood improvement) of the Project. 	

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
<p>Partial Loss of Residential Land</p> <p>*Will not Require Relocation</p>	<p>Legal owner or occupant identified during DMS.</p>	<p>(i) Cash compensation at replacement cost which is equivalent to the current market value of land of similar type and category, and free from transaction costs (taxes, administration fees), and (ii) Project contractor to improve remaining residential land at no cost to APs (e.g. filling and leveling) so APs can move back on remaining plot.</p>	<p>Voluntary contribution of residential land will be allowed only under the following conditions: (i) the affected portion is less than 5% of the total area; and, (ii) there are no structures or fixed assets on the affected portion.</p>
<p>Total Loss of Residential Land</p> <p>Land no longer viable for continued use, i.e., can no longer build a house, therefore the entire property has to be acquired</p>	<p>Legal owner or occupant identified during DMS.</p>	<p>(i) replacement land equal in area, type and category at a location satisfactory to APs and with registered title or secure tenure; OR</p> <p>(ii) cash compensation at replacement cost equal to current market prices for land of similar type, category and location, plus assistance to purchase and register land.</p> <p>All transaction fees, taxes and other costs associated with the allocation of replacement land and/or issuance of title or secure tenure will be paid by the Project. If the head of household is married, the title will be issued in the names of both spouses.</p>	
	<p>Regardless of tenure status</p>	<ul style="list-style-type: none"> ▪ Moving allowance in cash or in-kind (dump trucks) to move salvageable structures and personal belongings ▪ For informal businesses (shops) cash compensation equivalent to the daily wage rate in the area multiplied by the number of days of business disruption ▪ Appropriate livelihood restoration measures to be determined during DMS 	
	<p>Users with temporary or</p>	<p>APs that hold a lease for use of construction or other non-agricultural land will receive</p>	

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
	lease rights	compensation equal to the remaining value of the lease.	
	Non-legal users	<p>Non-legal APs will not receive compensation for affected land, but full replacement cost for non-land assets and investment on land to land user.</p> <p>However, if they have no other residential land holdings, they will be allocated replacement land with leasehold tenure to rebuild their house.</p>	
Loss of Garden/Pond Land that cannot be Certified/Recognized as Residential Land	Owner of affected fishpond	<ul style="list-style-type: none"> ▪ Cash compensation of affected portion at replacement cost which is equivalent to the current market value of fishpond, labor and rent of equipment to excavate fishpond, free from transaction costs (taxes, administration fees). ▪ If the currently held fish stocks will not be harvested before the project takes possession of the fishpond, then cash compensation for the projected mature value of fish stock held at the time of compensation. ▪ Construction contractor to restore/repair remaining fishpond to return to pre-project condition. If support cannot be provided by the contractor, the AP will be entitled to cash assistance to cover for payment of labor and rent of equipment to restore/repair fishpond. ▪ Income restoration and livelihood development assistance shall be provided. The level of assistance will be finalized during consultations with the APs and during the RP preparation. ▪ APs shall be entitled to the benefit schemes of the BCC Project and automatically included in Component 3 (livelihood improvement) of the Project 	<ul style="list-style-type: none"> ▪ Adequate time provided for AP to harvest fish stocks. ▪ Voluntary donation of fishpond land, will not be allowed by the Project.

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
<p>Partial Impact on Houses/Shops</p> <p>Shop is partially affected but the remaining portion of the house will no longer be viable for continued use, therefore, the entire shop should be destroyed.</p>	<p>Owners of affected houses whether or not land is owned.</p>	<ul style="list-style-type: none"> ▪ Cash compensation at replacement cost for the affected portion equivalent to current market prices of: (i) materials, with no deduction for depreciation of the structure or salvageable materials; (ii) materials transport; and (iii) labor cost to cover cost for dismantling, transfer and rebuild; and 	<ul style="list-style-type: none"> ▪ Adequate time provided for APs to rebuild/repair their structures. ▪ Affected houses and shops that are no longer viable are those whose remaining affected portion are no longer usable/habitable.
<p>Total Impacts on Houses/Shops</p>	<p>Owners of affected houses whether or not land is owned.</p>	<ul style="list-style-type: none"> ▪ Cash compensation at replacement cost for the entire structure equivalent to current market prices of: (i) materials, with no deduction for depreciation of the structure or salvageable materials; (ii) materials transport; and (iii) labor cost to cover cost for dismantling, transfer and rebuild; and ▪ Excluding those who will move back to their residual land, timely provision of dump trucks for hauling personal belongings at no cost to the APs. ▪ For relocating APs with no impact on business or main source of income: a cash allowance and/or in-kind assistance equal to 16 kg of rice per household member for three (3) months. ▪ If tenants must or choose to relocate, they will receive a cash allowance equal to the current rental amount for a transition period of three (3) months, a moving allowance and assistance to find alternative accommodation or premises. 	
<p>Loss of Income from Business</p>	<p>Business owner</p>	<p>APs with businesses that are disrupted temporarily and not displaced: Cash allowance equal to the provincial daily wage or average daily revenues whichever is higher, for the number of</p>	

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
		days that business activity is disrupted.	
Loss of Income due to Restrictions to Access to Sources of Livelihoods, i.e., forests	All APs	<ul style="list-style-type: none"> ▪ Provision of access to areas that can provide comparable resources and income sources 	
Higher Risks of Impoverishment/Hardship Due to Loss of or Restriction to Resource Base	Vulnerable APs	<ul style="list-style-type: none"> ▪ An additional allowance of 1 month supply of rice per person in the household. ▪ Provision of labor and additional materials at no cost to APs to assist during rebuilding of houses. ▪ Appropriate livelihood restoration measures to be determined during DMS ▪ Entitled to the benefit schemes and automatically included in Component 3 (livelihood provision) of the Project 	Vulnerable APs include affected ethnic groups, designated poor households or those below the national poverty line, and households headed by women, the elderly or the disabled.
Loss of Secondary Structures	Owners of affected houses/structures whether or not land is owned.	Cash compensation at replacement cost for the affected portion of structure equivalent to current market prices of: (i) materials and labor, with no deduction for depreciation of the structure or for salvageable materials; (ii) materials transport; and (iii) cost of repair of the unaffected portion.	
Impacts on Crops, Trees and Aquaculture Products	Owner of crops, trees and aquaculture products whether or not land is owned.	<ul style="list-style-type: none"> ▪ If standing annual crops are ripening and cannot be harvested, cash compensation at replacement cost equivalent to the highest production of crop over the last three years. ▪ For perennial crops and trees and aquaculture products, cash compensation at replacement cost equivalent to current market value based on type, age, and productive value (future) at the time of compensation. 	

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
		<ul style="list-style-type: none"> ▪ For timber trees, cash compensation at replacement cost equivalent to current market value based on type, age and diameter at breast height (DBH) of trees. 	
Impacts on Public Facilities, Communal Owned Assets and Collective Assets	Villages, village authorities, mass organizations	<p>For common property resources, the affected land will be replaced in areas identified in consultation with affected communities and relevant organizations.</p> <p>Affected buildings and structures will be restored to original or better condition</p>	
Impacts on Graves/Tombs	Household who owns the graves	<p>APs are entitled to cash compensation for all costs of excavation, movement and reburial. Graves to be exhumed and relocated in culturally sensitive and appropriate ways.</p>	
Temporary Impacts During Construction	Legal owner or occupant	<p>For agricultural and residential land to be used by the civil works contractor as by-pass routes or for contractor's working space: (i) rent to be agreed between the landowner and the civil works contractor but should not be less than the unrealized net income and revenue that could be generated by the property during the period of temporary use of the land; (ii) cash compensation at replacement cost for affected fixed assets (e.g. structures, trees, crops); and (iii) restoration of the temporarily used land (to pre-project condition) within 1 month after closure of the by-pass route or removal of equipment and materials from contractor's working space subject to the conditions agreed between the landowner and the civil works contractor.</p>	<p>The construction supervision consultant will ensure that the: (i) location and alignment of the by-pass route to be proposed by the civil works will have the least adverse social impacts; (ii) landowner is adequately informed of his/her rights and entitlements as per the Project resettlement policy; and (iii) agreement reached between the landowner and the civil works contractor are carried out.</p>
	APs with no land use rights	<p>Cash compensation will be paid at replacement cost to all APs for damage to or loss of trees, crops, fences or other structures and/or for loss of net income from business or other activities.</p>	

Impact/ Loss and Application (*)	Eligible Persons	Entitlements	Implementation Issues
		In the case of sharecropping or concession arrangements, the compensation will be paid to each of the parties in accordance with previous agreements.	

Appendix 4: Sample Voluntary Contribution Consent Form

LAO PDR

[INSERT NAME] Province

[INSERT NAME] District

[INSERT NAME] Village

CERTIFICATE OF LAND TRANSFER

I, [INSERT NAME, AGE, NATIONALITY, OCCUPATION], with residence located in [INSERT NAME] village, [INSERT NAME] district, [INSERT NAME] province,

Certify that I have been previously informed by local authority of my right to entitle compensation for any loss of property (house, land and trees) that might be caused by BCC[INSERT IMPROVEMENT, I.E., WATER SUPPLY SYSTEM, ACCESS INFRASTRUCTURE, ETC...] in village [INSERT NAME], district ([INSERT NAME]). I confirm that I voluntarily accept [INSERT TERMS FOR REPLACEMENT]. I also confirm that I do not request any compensation of loss of [INSERT OTHER LOSSES SUCH AS TREES STRUCTURES] and would request the local authority to consider this as my contribution to the Project.

Type of Loss	Area (sqm)	Number of Trees	Unit Rates	Total	Comment
Land					
Total					

Therefore, I prepare and sign this certificate for the proof of my decision.

[INSERT NAME] district

[INSERT DATE]

The owner of the land

[INSERT NAME AND SIGN]

Witnesses:

1. [INSERT NAME]

2. [INSERT NAME]

3. [INSERT NAME]

Certified by the Chief of the Village [INSERT NAME AND SIGN]

The Chief of [INSERT NAME] district [INSERT NAME AND SIGN]

Appendix 5: Involuntary Resettlement Screening Form

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
Involuntary Acquisition of Land				
1. Will there be permanent/temporary, full/partial land acquisition?				
2. Is the site for land acquisition known?				
3. Is the ownership status and current usage of land to be acquired known?				
4. Will easement be utilized within an existing Right of Way (ROW)?				
5. Will there be temporary/permanent, full/partial loss of shelter and residential land due to land acquisition?				
6. Will there be temporary/permanent, full/partial loss of agricultural and other productive assets due to land acquisition?				
7. Will there be temporary/permanent, full/partial losses of crops, trees, and fixed assets due to land acquisition?				
8. Will there be temporary/permanent, full/partial loss of businesses or enterprises due to land acquisition?				
9. Will there be temporary/permanent, full/partial loss of income sources and means of livelihoods due to land acquisition?				
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
10. Will people temporarily/permanently, fully/partially lose access to natural resources, communal facilities and services?				
11. If land use is changed, will it have an adverse impact on social and economic activities?				
12. Will access to land and resources owned communally or by the state be restricted temporarily/permanently, fully/partially?				
Information on Displaced Persons:				
Any estimate of the likely number of persons that will be displaced by the Project? [] No [] Yes				
If yes, approximately how many? _____				
Are any of them poor, female-heads of households, or vulnerable to poverty risks? [] No [] Yes				
Are any displaced persons from indigenous or ethnic minority groups? [] No [] Yes				

Appendix 6: Guidelines for Census, Socioeconomic Survey and Replacement Cost Survey

A. Census of APs and Inventory of Affected Assets

1. A census of APs and their households and the inventory of assets to be acquired serve two vital functions. The primary function is to identify APs eligible for resettlement entitlements, which is especially important if disclosure of subproject plans is likely to encourage land invasion and fraudulent claims for compensation. The census and inventory also supply an important part of the resettlement database to be used for project monitoring and supervision. The census and the inventory of assets can be done separately. As each requires visits to all affected households, however, doing them together is generally more efficient. Where establishing ownership or length of residency is difficult, the census should be conducted as soon as possible, to determine a cut-off date for eligibility for entitlements. In such situations an immediate partial inventory, sufficient to establish the number and general size of structures and other assets to be taken, may be advisable to supplement the census. The precise attributes of structures and an inventory of remaining fixed assets (such as boreholes) acquired or affected can be determined later. The census needs to be undertaken as soon as possible to ensure accurate determination of eligibility for entitlement. The formats for the census and the asset inventory must be adapted to the specific context and informational requirements of the subproject. In any case, the format needs to be field-tested, to ensure that the questions and the phrasing of them elicit the required information. The usual practice is for enumerators to code information while the teams are in the field. This way, incomplete or obviously incorrect information can be corrected on repeat visits. The information is then sent to the project office for data entry and filing.

2. Once the final technical design of the subproject is available, the Detailed Measurement Survey (DMS) needs to be carried-out, and the DMS results are used for the RP updating.

B. Socioeconomic Survey (SES)

3. The census and inventory are supplemented with data from socioeconomic surveys. The SES data and information are used to establish baseline information on household income, livelihood patterns, standards of living, and productive capacity. This baseline information constitutes a reference point against which income restoration and the results of other rehabilitation efforts can be measured lists other areas of socioeconomic analysis: land tenure and transfer systems; the patterns of social interaction in the affected communities; public infrastructure and social services that will be affected; and social and cultural characteristics of displaced communities. Interviews are conducted with a systematic sample and using uniform questionnaires. For some subproject under the BCC Project that affects a limited number of people, everyone affected may be interviewed. For the significant involuntary resettlement subprojects, AP population can be sampled for the socioeconomic surveys. The sample should provide a sufficient number of cases for statistical analysis.

C. Replacement Costs Survey (RCS)

4. Compensation is based on the principle of replacement cost. Replacement cost is the amount calculated before displacement which is needed to replace an affected asset without deduction for taxes and/or costs of transaction as follows:

- Productive Land (agricultural, aquaculture, garden and forest) based on market prices that reflect recent land sales, and in the absence of such recent sales, based on productive value;

- Residential land based on market prices that reflect recent land sales, and in the absence of such recent land sales, based on similar location attributes;
- Houses and other related structures based on current market prices of materials and labor without depreciation nor deductions for salvaged building materials;
- Annual crops equivalent to current market value of crops at the time of compensation;
- For perennial crops and trees, cash compensation at replacement cost is equivalent to current market value given the type, age and productive value (future production) at the time of compensation. Timber trees based on diameter at breast height at current market value.

5. The evaluation of replacement costs will be carried out based on information collected from both research and field work including surveys and data collection from people in the affected and adjacent areas, both those affected and those not affected.

6. Desk research will focus on relevant publications, decisions of Government authorities at national, provincial, city and district levels. However, these materials will play the supporting role only. As the work is aimed at obtaining reasonable replacement costs for different types of affected assets, market evidences are the factors which most strongly base the formulation of these costs. Surveys with people in the affected area, both those, whose assets are affected by the project, and those whose assets are not, will produce reliable data for evaluation.

7. For land, the objective of evaluation is to determine the prices or rates that will enable APs to purchase the same type and quantity of land. The evaluation of compensation for the loss of land is based on its market value. Direct interviews with land-owners in the subproject area, including those whose land is affected and those whose land is not; and consultation with the land and real-estate agency service staff, the District Site Clearance and Resettlement committee officer, etc. are required. The information to collect include the recent land use rights transfers (buying/selling transactions) in the area; the price, at which owners are willing to sell their land; or/and price of the recent transaction; type of land (Non – Agriculture land, Agriculture land with different categories); and the government established rates for land.

8. For annual crops, the survey team needs to calculate the value of crops that are lost, the market price of the crops during last 3 years. For the data and information, focus grouped discussions with farmers to discuss the investment cost, production, yield and benefit for each crop type, interviews with people (affected and not affected) who owned the same crops in the locality, and interviews with agricultural experts, etc. are advisable.

9. For perennial trees, the information about production and benefit of their fruit tree during last 3 years and the market price of the trees are needed.

10. For structures, the survey is to determine whether the government regulated prices enable APs to rebuild their affected structures. The evaluation of compensation for affected structures is based on the principle of replacement cost. The information to base the evaluation will mainly be collected from direct interviews with parties involved, including owners of structures in the subproject site and the owner of similar structures in the region whose are not affected, local construction contractors specialized in residential building; owner of newly built houses.

Appendix 7: Outline of a Resettlement Plan

1. This outline is part of the Safeguard Requirements 2. A resettlement plan is required for all projects with involuntary resettlement impacts. Its level of detail and comprehensiveness is commensurate with the significance of potential involuntary resettlement impacts and risks. The substantive aspects of the outline will guide the preparation of the resettlement plans, although not necessarily in the order shown.

A. Executive Summary

2. This section provides a concise statement of project scope, key survey findings, entitlements and recommended actions.

B. Project Description

3. This section provides a general description of the project, discusses project components that result in land acquisition, involuntary resettlement, or both and identify the project area. It also describes the alternatives considered to avoid or minimize resettlement. Include a table with quantified data and provide a rationale for the final decision.

C. Scope of Land Acquisition and Resettlement

4. This section: (i) discusses the project's potential impacts, and includes maps of the areas or zone of impact of project components or activities; (ii) describes the scope of land acquisition (provide maps) and explains why it is necessary for the main investment project; (iii) summarizes the key effects in terms of assets acquired and displaced persons; and (iv) provides details of any common property resources that will be acquired.

D. Socioeconomic Information and Profile

5. This section outlines the results of the social impact assessment, the census survey, and other studies, with information and/or data disaggregated by gender, vulnerability, and other social groupings, including: (i) define, identify, and enumerate the people and communities to be affected; (ii) describe the likely impacts of land and asset acquisition on the people and communities affected taking social, cultural, and economic parameters into account; (iii) discuss the project's impacts on the poor, indigenous and/or ethnic minorities, and other vulnerable groups; and (iv) identify gender and resettlement impacts, and the socioeconomic situation, impacts, needs, and priorities of women.

E. Information Disclosure, Consultation, and Participation

6. This section: (i) identifies project stakeholders, especially primary stakeholders; (ii) describes the consultation and participation mechanisms to be used during the different stages of the project cycle; (iii) describes the activities undertaken to disseminate project and resettlement information during project design and preparation for engaging stakeholders; (iv) summarizes the results of consultations with affected persons (including host communities), and discusses how concerns raised and recommendations made were addressed in the resettlement plan; (v) confirms disclosure of the draft resettlement plan to affected persons and includes arrangements to disclose any subsequent plans; and (vi) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for consultation with affected persons during project implementation.

F. Grievance Redress Mechanisms

7. This section describes mechanisms to receive and facilitate the resolution of affected persons' concerns and grievances. It explains how the procedures are accessible to affected

persons and gender sensitive.

G. Legal Framework

8. This section: (i) describes national and local laws and regulations that apply to the project and identify gaps between local laws and ADB's policy requirements; and discuss how any gaps will be addressed. (ii) describes the legal and policy commitments from the executing agency for all types of displaced persons; (iii) outlines the principles and methodologies used for determining valuations and compensation rates at replacement cost for assets, incomes, and livelihoods; and set out the compensation and assistance eligibility criteria and how and when compensation and assistance will be provided. (iv) describes the land acquisition process and prepare a schedule for meeting key procedural requirements.

H. Entitlements, Assistance and Benefits

9. This section: (i) Defines displaced persons' entitlements and eligibility, and describes all resettlement assistance measures (includes an entitlement matrix); (ii) Specifies all assistance to vulnerable groups, including women, and other special groups; and, (iii) Outlines opportunities for affected persons to derive appropriate development benefits from the project.

I. Relocation of Housing and Settlements

10. This section: (i) describes options for relocating housing and other structures, including replacement housing, replacement cash compensation, and/or self-selection (ensure that gender concerns and support to vulnerable groups are identified); (ii) describes alternative relocation sites considered; community consultations conducted; and justification for selected sites, including details about location, environmental assessment of sites, and development needs; (iii) provides timetables for site preparation and transfer; (iv) describes the legal arrangements to regularize tenure and transfer titles to resettled persons; (v) outlines measures to assist displaced persons with their transfer and establishment at new sites; (vi) describes plans to provide civic infrastructure; and (vii) explains how integration with host populations will be carried out.

J. Income Restoration and Rehabilitation

11. This section: (i) identifies livelihood risks and prepare disaggregated tables based on demographic data and livelihood sources; (ii) describes income restoration programs, including multiple options for restoring all types of livelihoods (examples include project benefit sharing, revenue sharing arrangements, joint stock for equity contributions such as land, discuss sustainability and safety nets); (iii) outlines measures to provide social safety net through social insurance and/or project special funds; (iv) describes special measures to support vulnerable groups; (v) explains gender considerations; and (vi) describes training programs.

K. Resettlement Budget and Financing Plan

12. This section: (i) provides an itemized budget for all resettlement activities, including for the resettlement unit, staff training, monitoring and evaluation, and preparation of resettlement plans during loan implementation. (ii) describes the flow of funds (the annual resettlement budget should show the budget-scheduled expenditure for key items). (iii) includes a justification for all assumptions made in calculating compensation rates and other cost estimates (taking into account both physical and cost contingencies), plus replacement costs. (iv) includes information about the source of funding for the resettlement plan budget.

L. Institutional Arrangements

13. This section: (i) describes institutional arrangement responsibilities and mechanisms for carrying out the measures of the resettlement plan; (ii) includes institutional capacity building

program, including technical assistance, if required; (iii) describes role of NGOs, if involved, and organizations of affected persons in resettlement planning and management; and (iv) describes how women's groups will be involved in resettlement planning and management,

M. Implementation Schedule

14. This section includes a detailed, time bound, implementation schedule for all key resettlement and rehabilitation activities. The implementation schedule should cover all aspects of resettlement activities synchronized with the project schedule of civil works construction, and provide land acquisition process and timeline.

N. Monitoring and Reporting

15. This section describes the mechanisms and benchmarks appropriate to the project for monitoring and evaluating the implementation of the resettlement plan. It specifies arrangements for participation of affected persons in the monitoring process. This section will also describe reporting procedures.

Ethnic Groups Development Framework

Draft for Submission to FIP Committee

Ethnic Groups Development Framework: Lao PDR
Document Stage: Updated for Additional Financing
Project Number: 40253-036

Lao PDR: Greater Mekong Subregion Biodiversity Conservation Corridors Project – Additional Financing (Protecting Forests for Sustainable Ecosystem Services Project, Forest Investment Program Component)

Prepared by the Ministry of Natural Resources and Environment, Lao PDR, for the Asian Development Bank. This is an updated version of the draft originally posted in November 2010 available on <http://www.adb.org/projects/40253-023/documents>.

CURRENCY EQUIVALENTS

(as of 11 January 2016)

Currency unit	–	kip(KN)
KN1.00	=	\$0.0001227
\$1.00	=	KN8,148

ABBREVIATIONS

ADB	Asian Development Bank
BCI	Biodiversity Conservation Corridors Initiative
DONRE	District Office of Natural Resources and Environment
EG	Ethnic group
EGDF	Ethnic Group Development Framework
EGDP	Ethnic Group Development Plan
EM	Ethnic minority
GMS	Greater Mekong Subregion
HH	Household
MDG	Millennium development goal
MONRE	Ministry of Natural Resources and Environment
NPA	National protected area
NPMO	National project management office
NTFP	Non timber forest product
PONRE	Provincial Office of Natural Resources and Environment
PPO	Provincial project office
R-PPTA	Regional project preparatory technical assistance
SPS	Safeguards policy statement
SR	Safeguards requirement
VDF	Village development fund

NOTE

- (i) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. This Ethnic Groups Development Framework (EGDF) is an updated version of the EGDF prepared for the Greater Mekong Subregion (GMS) Biodiversity Conservation Corridors Initiative Project (BCC) in 2010 to guide in (i) identifying ethnic groups, the project's impacts on them, appropriate ways of engaging them, and beneficial and mitigating measures, and (ii) preparing Ethnic Groups Development Plans. The update is necessary to accommodate the Forest Investment Program additional financing (AF) proposed in 2013, and its impacts on ethnic groups.

A. Project Description

2. Lao PDR is part of the Greater Mekong Subregion along with Cambodia, Myanmar, People's Republic of China, Socialist Republic of Viet Nam and Thailand. In 1992, the countries collaborated to form the GMS Economic Cooperation Program with assistance from the Asian Development Bank (ADB) to facilitate "sustainable economic growth and reduce poverty by strengthening economic linkages among member countries. Further, it aimed to realize and enhance development opportunities, encourage trade and investment, streamline cross border arrangements, and meet common resource and policy needs. The cooperative initiative adopts the following strategies: (i) increasing connectivity through sustainable development of infrastructure and transnational economic corridors; (ii) enhancing competitiveness through efficient cross-border movements of goods and people, and integrated markets and production processes; (iii) building a greater sense of community that mutually recognizes and jointly addresses shared environmental and social concerns.

3. BCC represents an upscaling of the GMS Biodiversity Conservation Corridors Initiative (BCI) pilot phase endorsed by the GMS Summit of Leaders in 2005 in Kunming and implemented between 2006-2009 in 11 villages of Champasak Province of Lao PDR. The biodiversity corridor¹ will maintain and consolidate forest ecosystem connectivity between XeXap National Protected Area (NPA) in Xekong with Dong Ampham NPA in Attapeu and Xepian and Dong Hua Sao NPAs in Champasak in southern Lao PDR (See Figure 1).

4. The overall aim of BCC is to secure forest areas for the local communities against further outside pressure/economic concessions by delineating and demarcating community forest areas and protected forest areas and giving tenure² instruments to communities and not resettle them or restrict access. Any restrictions on use of community forests will be made by them (local people). Capacity building leading to community empowerment is built in to address such and eventually, any activity will be the choice of participating communities. Connectivity between forest-blocks will be restored as a result of broad community support generated through appropriate consultation and participation modalities. Preference for BCC is a linear design of the biodiversity corridor, but may resort to the stepping stone model anchored on decisions of target villages within the landscape.

5. The project has four components, (i) institutional and community strengthening for biodiversity conservation management; (ii) biodiversity corridors restoration, ecosystem services protection, and sustainable management by local resource managers; (iii) livelihood

¹ *Biodiversity Corridors* are geographic areas within or cutting across the GMS Economic Corridors that need to be placed under sustainable management regimes to secure local livelihoods and investments and maintain ecosystem services for future generations.

² As forest areas are communally owned, arrangements for securing tenure will also be communally-based, i.e., provision of village land use certificates.

improvement and small-scale infrastructure support in target villages; and (iv) project management and support services.

6. The BCC Project covers 69 villages in the provinces of Attapeu, Champasak, and Xekong as presented in Table 1.

Figure 1. Corridor Design and Coverage

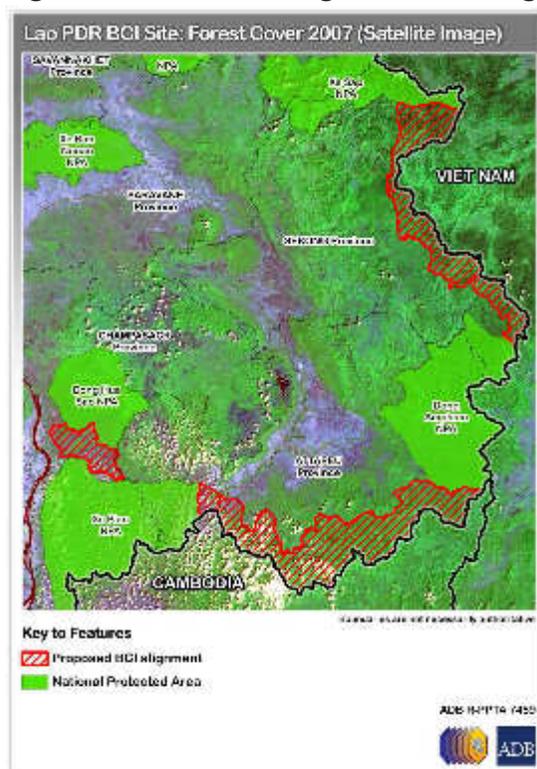


Table 1: Biodiversity Conservation Corridors Project Sites in Lao PDR

Province	District	Village	Total Population	# of Households
Champasak	1 District Pathoumphone	21 Villages	13,241	2,309
		21	13,241	2,309
		1. Sanot	701	130
		2. Thongpha	619	108
		3. Thahou	519	83
		4. Somsouk	494	74
		5. Thopsok	557	85
		6. Houayko	178	31
		7. Nabon	489	84
		8. Nakok	649	114
		9. Laonga	687	99
		10. KiatNgong	983	168
		11. Namom	802	153
		12. KeleGnai	971	168
		13. Ta Ong	267	53
		14. Tavang	215	36
		15. Phalay	1,424	258
		16. Saming	988	164
		17. Khonthout	674	135
18. Keng Na Arn	710	134		

Province	District	Village	Total Population	# of Households
		19. Thongxai	453	87
		20. Kala	645	115
		21. Houayton	216	30
Attapeu			23	9,073
	Phouvuong		4	1,117
		1. B. Lamong	300	61
		2. B. Phoungang	313	30
		3. B. Phoukeua	212	42
		4. B. Namxouan	292	60
	Sanamxai		19	7,956
		1. B. Senkeo	145	29
		2. B. Hat- Oudomxai	381	70
		3. B. Sompoy	1,185	248
		4. B. Sivilai	358	65
		5. B. Tangao	238	50
		6. B. Boungkeo	413	72
		7. B. Khanmaknao	334	54
		8. B. Pakbo	513	71
		9. B. Hatxay- Soung	473	70
		10. B. Namkong	437	73
		11. B. Don	349	58
		12. B. Nongmouang	438	83
		13. B. Pin-Dong	253	44
		14. B. Bengvilai	319	46
		15. B. Kaxe	568	98
		16. B. Phonmani	259	45
		17. B. Chanto	321	51
		18. B. Matka	442	69
		19. B. Phonsa-At	530	102
Xekong			25	5054
	Dakcheung		15	3,219
		1. B. Ayoun	232	14
		2. B. Dakman	157	29
		3. B. Dakta-Ok- Gnai	248	35
		4. B. Dakta-Ok- Noy	175	25
		5. B. Dakdom	243	44
		6. B. Daksiang	187	16
		7. B. Daklu	147	26
		8. B. Daklan-Deuy	219	38
		9. B. Daksiang Bi	244	41
		10. B. Kongnong	215	26
		11. B. Tangpuang	71	17
		12. B. Tangmi	190	41
		13. B. Tangyeuy	305	44
		14. B. Tangno	190	36
		15. B. Tangtalang	396	55
	Kaleum		10	1,835
		1. B. Songkhon	450	78
		2. B. Panon- Kaliang	108	15

Province	District	Village	Total Population	# of Households
		3. B. Tavang-Bon	107	18
		4. B. "Agnuang	170	41
		5. B. Aching-Akeo	186	39
		6. B. Chateau- Oung-Pale	104	17
		7. B. Ka-Ouang- Ateng	185	27
		8. B. Alot	166	19
		9. B. Klo	225	33
		10. B. Aloung- Laba	134	15
3 Provinces	5 Districts	69	27368	4689

LEGEND **Sample Villages**

Note: The number of villages was reduced from 69 to 67 during the midterm review because of Government's policy to combine small villages.

7. In 2013, the Forest Investment Program additional financing (AF) was proposed to support a number of new activities that contribute to, and enhance the existing BCC outputs. Whereas the existing BCC project focuses on biodiversity considerations, particularly maintaining and improving forest cover connectivity within the corridor, the AF will focus more on conservation of areas with high carbon stocks (since loss of such areas results in high levels of emissions) and restoration of forest cover where co-benefits from carbon sequestration, soil, water and biodiversity conservation, can be maximized. The new activities will therefore include the augmentation of ecosystem services and benefits through strengthening the participation of local communities in permanent forest boundary delineation, demarcation and maintenance, forest management, enforcement of forest protection and monitoring changes in forest carbon stocks resulting from reduced losses and increased sequestration from forest restoration.

8. The AF supports the four BCC outputs but slightly broadens them to integrate measures to reduce emissions from deforestation and degradation (REDD+) into the existing project results (see Appendix 1). It also adopts the BCI approach and technical guidelines for forest protection and restoration, and livelihood activities. It will be implemented in 21 villages in Attapeu and Sekong (see Appendix 2).

B. Rationale for the EGDF

9. The 2009 ADB Safeguards Policy Statement (SPS) that cover affected ethnic groups (EG) is triggered if a project directly or indirectly affects the dignity, human rights, livelihood systems, or culture of EGs or affects the territories or natural or cultural resources that EGs own, use, occupy, or claim. Based on the socio-demographic and anthropological characteristics of Project site beneficiaries in the three provinces, an Ethnic Groups Development Framework (EGDF) is prepared and hereby presented. This EGDF is envisaged to provide guidance in the preparation and implementation of Ethnic Groups Development Plans (EGDP) based on the results of social impact assessment (SIA) conducted per village.

10. Technically and ideally, BCC and the AF (the Project) promote a sequential and sector-like approach at implementation. The necessary land use and capability assessment, and participatory management planning have to be in place prior to subproject³ implementation.

³ Subproject refers to all sub-components of the Project including but not limited to physical infrastructure.

However, it is recognized that planning is an ongoing facet of natural resource management and as such, some subprojects may be ready for implementation within the whole planning phase for the landscape. Specifically under Component 1 (Institutional and community strengthening), the Project aims to secure forest areas for the local communities against further outside pressure/economic concessions by delineating and demarcating community forest areas and protected forest areas. It will provide tenure instruments to communities that are found peripheral to protected areas, which by law have defined uses. Communities will craft restrictions appropriate to their concerns and needs in order to protect their rights to the land and the natural resources therein and in so doing, protect the biodiversity. Capacity building leading to community empowerment is built in to address the need for balancing resource use and protection and eventually, within this context, any activity will be the choice of participating communities.

11. This EGDF is deemed sufficient to take into account the possibility of preparing and implementing EGDP for later selected subprojects. EGDF takes into account the uniqueness of prevailing conditions in Lao PDR. Due considerations are made in the preparation of this framework document as follows: (i) a significant number of the population in the biodiversity corridor areas are ethnic groups, who generally have higher poverty rates compared to the nationally dominant groups, and (ii) impacts are expected to be positive as EG concerns have been incorporated in the overall project design.

II. OBJECTIVES OF THE EGDF

A. Principles and Objectives

12. **Objective.** The main objective of the EGDF is to help ensure that subprojects are designed and implemented in a way that fosters full respect for EGs' identity, dignity, human rights, livelihood systems, and cultural uniqueness as defined by the EGs themselves to enable them to (i) receive culturally appropriate social and economic benefits, (ii) do not suffer adverse impacts as a result of the project, and (iii) can participate actively in the project. This EGDF safeguards the rights of EGs to participate and equitably receive culturally appropriate benefits from the project. For this purpose, an EGDP will be prepared in participating villages subject to results of subproject screening that identifies (i) the presence of ethnic groups, and (ii) project impacts on ethnic groups whether positive or negative, direct or indirect, temporary or permanent. The EGDP will be translated into Lao language to ensure the awareness on this documentation.

13. **Principles.** In pursuit of the abovementioned objective, the Project will be governed by the following principles:

- (i) Early screening to determine the presence of EG and the potential impacts of the Project on EGs.
- (ii) Culturally appropriate and gender-sensitive social impact assessments are conducted with due consideration to EGs.
- (iii) The above measure should be built into Ethnic Group Development Plans (EGDPs) which include: (a) processes for continued consultation and culturally appropriate disclosure modalities during project implementation; (b) measures to ensure EGs receive appropriate benefits; (c) measures to avoid, minimize, mitigate, or compensate for any adverse project impacts; (d) culturally acceptable grievance procedures, monitoring and evaluation arrangements; and (e) a budget and time-bound action for implementing the planned measures.

- (iv) When avoidance of negative impacts is not possible, measures to minimize, mitigate, or compensate for such effects by establishing culturally appropriate and gender inclusive capacity development modalities and grievance mechanisms.
- (v) Ensure consent of affected EG to project activities that may introduce commercial development of cultural resources and indigenous knowledge, physical displacement from traditional or customary land, and commercial development of natural resources within customary lands that impact on livelihoods or cultural uses that define the identity and community of EGs. Consent refers to a collective expression by affected EGs, through individuals and/or their recognized representatives, of broad community support for project/project activities even if some individuals or groups object.
- (vi) Avoid restricted access to and physical displacement from protected areas and natural resources but when not possible, ensure that affected EG communities participate in all aspects of the project cycle and that the Project's benefits are equitably shared.

B. Legal and Policy Framework

1. National Policies and Programs for Ethnic Groups

14. **Lao Constitution of 1991.** The Government of Lao PDR (GOL) officially acknowledged 47 main ethnic groups or categories, and 149 subgroups in 1995 as part of conducting the national census. This list was revised by the Lao Front for National Construction (LFNC) and now contains 49 categories, and over 160 subgroups. The official terminology for describing the diverse population of Lao PDR is 'ethnic groups'.

15. This terminology was introduced with the 1991 Constitution, where reference is often made to "citizens of all ethnic origin". Articles 8 and 22, guarantee that there will be no discrimination on the basis of ethnicity or gender. Inter alia, the Constitution makes specific mention of ethnic minorities:

- (i) Laos is a unified nation with indivisible ethnic groups.
- (ii) All power is of the people, by the people and for the use of the multi-ethnic population.
- (iii) The right to be owners of the nation is exercised by multi-ethnic people and is guaranteed by the political system.
- (iv) The mass organizations are the gathering point for solidarity and mobilization for citizens of all backgrounds and all ethnicities.
- (v) The state will provide a policy of unity and equality between different ethnic groups. All ethnic groups have the right to maintain their traditions and improve their culture and that of the nation. The state will use all means in order to improve the economic and social levels of all groups.
- (vi) The economic system is for the purpose of improving the living standard and spirituality of the multi-ethnic peoples.
- (vii) All of Lao citizens, regardless of their sex, social position, education, beliefs or ethnicity are equal before the law.

16. **Ethnic Minority Policy of 1992.** The term 'ethnic groups' is used by some to classify the non-Lao ethnic groups while the term 'indigenous peoples' is not used in Lao PDR. Most ethnic groups are upland and highland dwellers and most engaged in rainfed subsistence

agriculture. In general they are more likely to live in poverty than the majority lowland Lao. This is reflected in higher levels of illiteracy, child and maternal mortality and other key indicators such as agricultural productivity.

17. In 1992 the Government announced a formal Ethnic Minority policy, the “Resolution of the Party Central Organization Concerning Ethnic Minority Affairs in the New Era”. The policy contains three main objectives:

- (i) Strengthening political foundations at the community level to ensure Ethnic Minority loyalty and commitment to the national development,
- (ii) Increasing agricultural production and facilitating a shift away from subsistence agriculture to more market driven agriculture,
- (iii) Expand access and provision of social services such as health, education, etc.

18. It is the cornerstone of current Lao PDR policy towards ethnic minorities. It identifies as a major task in the Lao PDR “to push strongly for increased production and open channels for distribution in order to change the ‘natural’ or ‘semi-natural’ economic system towards one of production of goods, promote and expand the strengths of uplands area, and improve the quality of life of the citizens”. This policy resolution contains the basis for the policy of the ‘stabilization of shifting cultivation’, implementation of agriculture and forestry policies and allocations. Policies for taxation, credit, and a working plan for the Lao Front for National Construction (LFNC).

19. The *Resolution* mandates that all government agencies create a targeted plan for the development of rural, mountainous areas. It focuses on gradually improving the economic development opportunities and living conditions of ethnic groups, while promoting their distinct identities and cultural heritages.

20. The overarching goal of Government policies is to reduce poverty and to “free” Lao PDR from the status of least-developed country by 2020. The Government has used the approach to mainstream ethnicity into the Constitution and key policies.

21. **Lao Front for National Construction (1996).** The agency that manages affairs related to ethnic groups is the LFNC. It was established in 1996. The LFNC is designated as an advisor to the central committee of the Party and the State and at the local level, including the district level, the Party assists the LFNC in carrying out its duties. The LFNC is responsible for the following:

- (i) To promote the human development of all ethnic officials;
- (ii) To ensure that educational opportunities are made available to all ethnic groups;
- (iii) To promote and preserve cultural traditions;
- (iv) To improve and expand healthcare, knowledge of reproductive health, traditional medicine and detoxification of opium addicted persons;
- (v) To enhance the administrative mechanism for all ethnic groups including their promotion in rural development activities by ensuring that other agencies are aware of the requirements for the participation of all ethnic groups. LFNC is represented at the provincial and district levels. It is also found at the village level in many villages.

22. **Other Laws.** Recent laws and decisions reflect the Government’s increasing awareness of the need to incorporate ethnic issues in the development process in all sectors:

- (i) *The 6th National Socio-Economic Development Plan 2006–2010* confirms the commitment of the Government to poverty eradication within a framework of rapid and sustainable economic growth. Gender equality and equity for all ethnic groups are underlying principles of this Plan;
- (ii) The *Lao PDR Constitution 2001* (amended 2003) highlights the right of ethnic groups to protect, preserve, and promote their customs and heritage; and prohibits acts of division and discrimination (Article 8). *Decree No. 192/PM*.
- (iii) *Decree No. 192/PM and Regulation No.2432/STEA on Compensation and Resettlement(2005)* also recognizes the rights of ethnic groups with regard to social impact assessment and involuntary resettlement (Article 10).
- (iv) *Regulation No. 699/PMO.WREA on the Endorsement and Promulgation of Technical Guidelines on Compensation and Resettlement on People Affected Projects. Chapter 6 provides guidelines on Ethnic Minorities Development Plan.*

23. Ethnic groups are acknowledged in government poverty reduction strategies such as the National Growth and Poverty Eradication Strategy (NGPES) as well as in agriculture development. Agencies such as Health and Education make special arrangements to reach ethnic groups in remote areas although these efforts are too often constrained by lack of funds.

2. ADB's Policy on Ethnic Groups

24. ADB recognizes the rights of EGs to direct the course of their own development. Ethnic Groups do not automatically benefit from development, which is often planned and implemented by those in the mainstream or dominant population in the countries in which they live. Special efforts are needed to engage EGs in the planning of development programs that affect them, in particular, development programs that are supposedly designed to meet their specific needs and aspirations. Ethnic Groups are increasingly threatened as development programs infringe into areas that they traditionally own, occupy, use, or view as ancestral domain.

25. ADB's SPS 2009 aims to: (i) avoid adverse impacts of projects on the environment and affected people, where possible; (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and (iii) assist in strengthening country safeguards systems and develop the capacity to manage environmental and social risks.

26. The SPS uses the term ethnic minorities/Ethnic Groups in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees: (i) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; (ii) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; (iii) customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and (iv) a distinct language, often different from the official language of the country or region.

27. The ADB Policy on involuntary resettlement has been integrated with Ethnic Groups under the ADB SPS and shall likewise govern this EGDF. The social safeguards on involuntary resettlement are triggered by proposed subprojects as some may necessitate the acquisition of private land for road widening or improvements as well as any physical or economic displacement arising from the proposed subproject.

28. The ADB Policy on Gender and Development adopts gender mainstreaming as a key strategy for promoting gender equity, and for ensuring participation of women and that their needs are explicitly addressed in the decision-making process for development activities. For projects that have the potential to have substantial gender impacts, a gender plan is prepared to identify strategies to address gender concerns and the involvement of women in the design, implementation and monitoring of the project. The findings of a gender analysis are to be included in the EGDP, and at all stages: EG identification, planning, and management will ensure that gender concerns are incorporated, including gender-specific consultation and information disclosure. This includes special attention to guarantee women's assets, property, and land-use rights; and to ensure the restoration of their income and living standards.

29. The ADB Public Communications Policy seeks to encourage the participation and understanding of people and other stakeholders affected by ADB-assisted activities. Information on ADB-funded projects should start early in the preparation phase and continue throughout all stages of project development, in order to facilitate dialogue with affected people and other stakeholders. The Executing/Implementing Agency should, as necessary, develop a project communications plan and designate a focal point to maintain contact with affected people.

3. Equivalence and Gaps of the GOL and ADB Policy on Ethnic Groups

30. Table 2 summarizes policy equivalence and gaps between the Lao PDR and ADB. The 3rd column is observed as a means of harmonizing policies and regulations in the course of implementing the Project in Lao PDR.

Table 2: Matrix on Equivalence and Gaps

ADB SPS 2009	Government Requirements	Implementation of the Project
1. Screen early on to determine (i) whether EGs are present in, or have collective attachment to, the project area; and (ii) whether project impacts on EGs are likely.	<i>2432/STEA on Compensation and Resettlement(2005 and 2010 update)</i> recognizes such procedures as screening,	Equivalence noted. Screening will be done.
2. Undertake a culturally appropriate and gender-sensitive social impact assessment or use similar methods to assess potential project impacts, both positive and adverse, on EGs. Give full consideration to options the affected EGs prefer in relation to the provision of project benefits and the design of mitigation measures. Identify social and economic benefits for affected EGs that are culturally appropriate and gender and intergenerationally inclusive and develop measures to avoid, minimize, and/or mitigate adverse impacts on EGs.	social impact assessment, consultations and involuntary resettlement. Cultural sensitivity and appropriateness of approaches and strategies upheld.	Equivalence noted. Social impacts assessment will be prepared and updated for all subprojects in areas with EGs under Project. The assessment will cover both positive and adverse impacts on the local EGs as well as to develop the measures to minimize the potential adverse impacts with fully participation of local EGs.
3. Undertake meaningful consultations with affected ethnic communities and concerned organizations to solicit their participation (i) in designing, implementing, and monitoring measures to avoid adverse impacts or, when avoidance is not possible, to minimize, mitigate, or compensate for such effects; and (ii) in tailoring project benefits for affected ethnic communities in a culturally appropriate manner. To enhance EGs' active		Equivalence noted. <i>Under the Component 1, capacity building programs for EGs in the project area will be provided, including participation opportunities in the project activities.</i> <i>Meaningful consultations with local EGs will be carried in all</i>

ADB SPS 2009	Government Requirements	Implementation of the Project
<p>participation, projects affecting them will provide for culturally appropriate and gender inclusive capacity development. Establish a culturally appropriate and gender inclusive grievance mechanism to receive and facilitate resolution of EGs' concerns.</p>		<p><i>stages of the project. The grievance redress mechanism has been developed and will be discussed and disclosed publicly in the communities.</i></p>
<p>4. Ascertain the consent of affected ethnic communities to the following project activities: (i) commercial development of the cultural resources and knowledge of EGs; (ii) physical displacement from traditional or customary lands; and (iii) commercial development of natural resources within customary lands under use that would impact the livelihoods or the cultural, ceremonial, or spiritual uses that define the identity and community of EGs. For the purposes of policy application, the consent of affected ethnic communities refers to a collective expression by the affected ethnic communities, through individuals and/or their recognized representatives, of broad community support for such project activities. Broad community support may exist even if some individuals or groups object to the project activities.</p>	<p><i>2432/STEA on Compensation and Resettlement(2005 and 2010 update):</i> Quiet on consent but procedural in consultation to ensure broad community support.</p>	<p>Components 2 and Component 3 will ensure the rights of local EM to benefit from the use of their cultural resource and knowledge.</p> <p>Consent through broad community support will be observed.</p> <p>Component 2 particularly will protect local ethnic communities from commercial development of natural resources.</p>
<p>5. Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources. Where avoidance is not possible, ensure that the affected ethnic communities participate in the design, implementation, and monitoring and evaluation of management arrangements for such areas and natural resources and that their benefits are equitably shared.</p>	<p><i>2432/STEA on Compensation and Resettlement(2005 and 2010 update)</i> also promotes EMDP preparation through consultations, implementation, and modes of disclosure.</p>	<p>Equivalence noted. The issues of access restriction and physical displacement from protected areas and natural resources will be avoided as much as possible by zoning and mapping exercises. Local EGs will participate in the zoning and mapping activities. Local EGs will be benefited by all three components of the projects.</p>
<p>6. Prepare an EG plan (EGP) that is based on the social impact assessment with the assistance of qualified and experienced experts and that draw on indigenous knowledge and participation by the affected EGs. The EGP includes a framework for continued consultation with the affected ethnic communities during project implementation; specifies measures to ensure that EGs receive culturally appropriate benefits; identifies measures to avoid, minimize, mitigate, or compensate for any adverse project impacts; and includes culturally appropriate grievance procedures, monitoring and evaluation arrangements, and a budget and time-bound actions for</p>		<p>Equivalence noted. The EGDP shall be prepared and updated for each subproject. Consultants will be recruited to assist the EGDP preparation, implementation and monitoring.</p>

ADB SPS 2009	Government Requirements	Implementation of the Project
implementing the planned measures.		
7. Disclose a draft EGP, including documentation of the consultation process and the results of the social impact assessment in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected ethnic communities and other stakeholders. The final EGP and its updates will also be disclosed to the affected ethnic communities and other stakeholders.		Equivalence noted. The EGDP and other project documents will be disclosed before project appraisal and in the languages of the local EGs.
8. Prepare an action plan for legal recognition of customary rights to lands and territories or ancestral domains when the project involves (i) activities that are contingent on establishing legally recognized rights to lands and territories that EGs have traditionally owned or customarily used or occupied, or (ii) involuntary acquisition of such lands.	<i>2432/STEA on Compensation and Resettlement(2005 and 2010 update)</i> also recognizes action plan preparation for EMs towards acquisition and resettlement but not dwell on recognition of ancestral territories or domains.	In full consultations with local ethnic communities, the zoning and mapping exercises will define the areas with customary rights of the local EG and reflect the issues in the updated EGDP with particular actions to protect or compensate the areas.
9. Monitor implementation of the EGP using qualified and experienced experts; adopt a participatory monitoring approach, wherever possible; and assess whether the EGP's objective and desired outcome have been achieved, taking into account the baseline conditions and the results of EGP monitoring. Disclose monitoring reports.	<i>2432/STEA on Compensation and Resettlement(2005 and 2010 update)</i> also recognizes EMDP monitoring.	Equivalence noted. Internal and external monitors of EGDP implementation will be carried out. Consultants shall be recruited for independent monitoring of EGDP implementation.

C. Subproject Selection Criteria

31. Screening for subproject selection shall ascertain the following:

- (i) The Project will benefit or target EGs;
- (ii) The Project will not impinge on EGs' traditional socio-cultural and belief practices (e.g. child-rearing, health, education, arts, and governance);
- (iii) The Project will not affect the livelihood systems of EGs (e.g., food production system, natural resource management, crafts and trade, employment status) without the necessary mitigating measures;
- (iv) The Project will not promote any of the following activities without broad community support:
 - Commercial development of the cultural resources and knowledge of EGs
 - Physical displacement from traditional or customary lands;
 - Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of EGs.
- (v) The Project will not promote any of the following activities without an action plan prepared in accordance with the SPS special requirements for such:

- Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied or claimed by EGs; and,
- Acquisition of lands that are traditionally owned or customarily used, occupied, or claimed by EGs.

32. Subprojects will undergo screening for impacts on Indigenous Peoples using the screening form in Appendix 3. Should results of screening identify potential impacts on ethnic groups, an EGDG will be prepared. Any triggers corresponding to item (v) above shall necessitate compliance to the SPS-EG special requirements.

III. ETHNIC GROUPS IN THE PROJECT AREAS

33. BCC covers 67 villages in three provinces of Lao PDR, with a total population of approximately 27,500 or 4,700 households of which about 35% are poor households and 53% affected ethnic groups. The AF covers 21 villages in Xekong and Attapeu provinces, majority of which are composed of the ethnic groups Brao and Yae. The Ta-Lieng can also be found in some AF villages.

A. Screening for Ethnic Groups

34. Villages with ethnic groups will be consulted by the executing/implementing agency adhering to existing protocols of the LFNC and EG leaders at different levels. The grant implementation consultants (GIC) will undertake a screening for the presence of EGs with the guidance of EG leaders and local authorities. The screening process will use the following guide questions in ascertaining the presence of EGs within each target commune:

- (i) Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, scheduled tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?
- (ii) Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "EGs", scheduled tribes, tribal peoples, national minorities, or cultural communities?
- (iii) Do such groups self-identify as being part of a distinct social and cultural group?
- (iv) Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?
- (v) Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?
- (vi) Do such groups speak a distinct language or dialect?
- (vii) Has such groups been historically, socially and economically marginalized, disempowered, excluded, and/or discriminated against?
- (viii) Are such groups represented as EGs in any formal decision-making bodies at the national or local levels?

35. Should results show that there indeed are EGs within the proposed subproject area, a social impact assessment for EGs will be planned and scheduled.

B. Description of Ethnic Groups

1. Status of Ethnic Groups in Lao PDR

36. Lao PDR has a total population of about 6.2 million people. About 69% of the country's people are ethnic Lao, the principal lowland inhabitants and the politically and culturally dominant group. The Lao belong to the Tai linguistic group who began migrating southward from China in the first millennium AD. Approximately 8% belong to other "lowland" groups, which together with the Lao people make up the Lao Loum.⁴

37. In 1975, a tripartite division (Table 3) reflected the intention of the government to place all ethnic groups in the national Lao context, even though most of the peoples had nothing in common with Lao history, language, religion, customs and traditions. Also from the geographic point of view, the tripartite division was not perfect at all, as it placed peoples at regional altitudes who had left those altitudes a long time ago, establishing villages at lower altitudes, and vice versa.

Table 3: Official Classification of Ethnic Groups in Lao PDR After 1975

Lao Loum (Lao below)	Lao Theung (Lao above)	Lao Soung (Lao high)
<p>Other Tai-speaking groups. Includes all the ethnic Lao, who were described as Lao proper, politically dominant Lao people or Lao-speaking group of the Tai-speaking peoples, inhabiting primarily lowland areas along the Mekong River and its tributaries, who can be found at elevations up to 400 masl, practicing wet rice cultivation in inundated fields and following predominately the Theravada Buddhist religion. Also included were other Tai-speaking groups who have a more tribal character, resisting absorption into the mainstream of Lao culture, such as the Tai Dam (Black Tai) and Tai Khao (White Tai), inhabiting upland localities in the northeast of the country, practicing dry rice cultivation with the slash-and-burn method and remaining animists.</p>	<p>Other Austro-Asiatic and Austronesian-speaking groups. Comprise mainly peoples of the Austro-Asiatic language stock, settling at altitudes between 800 and 1,400 masl, They accounted for 23% of the total population in 1995. But most of the Lao Theung groups are inhabitants of central and southern Laos, especially in the areas along the Laos-Vietnam border.</p>	<p>Tibeto-Burman-speaking groups. Occupy higher mountain elevations in northern Laos, more than 1,400 masl. They comprise linguistically two groups of languages: Hmong-Mien speakers and Tibeto-Burman-speakers. The Lao Soung account for little less than 10% of the total population. Most of this category only migrated from China and Burma over the past 150 to 200 years. Traditionally, many of the Lao Soung settled in remote areas at high altitudes, where they live undisturbed from the lowland Lao and especially from the authorities. Agricultural conditions in the mountains are not as good as in the lowlands and the hills. Rugged terrain and the lack of permanent water supply allow only the cultivation of mountain rice, maize, beans and opium. The hill tribes live there in self-sufficient villages, practice swidden agriculture and only have contacts with the lowlanders when they visit the Lao markets in the towns. The largest ethnic group of the Lao Soung category is the Hmong who numbered in 1995 more than 315 individuals.</p>

38. This oversimplified ethnic classification lost popularity within the central government slowly but is still alive and widely used, especially among the ordinary people. The simplicity of the tripartite classification was locally preferred compared to having to know 49 different ethnic groups.⁵

39. A total of 49 ethnic groups are officially recognized comprising more than 200 ethnic subgroups. Ethnic groups can be grouped (Table 4) into four broad ethno-linguistic categories—Lao-Tai, Mon Khmer, Hmong-lu Mien and Chine-Tibet. Most of the smaller ethnic groups live mainly in the northern uplands of Lao PDR near the borders with Thailand, Myanmar, People's

⁴ IFAD. 2008. Rural Poverty Portal.

⁵ Joachim Schliesinger (2003). Ethnic Groups of Laos. Vol. 1. Introduction and Overview. ISBN 974-4800-32-1 pbk White Lotus Co., Ltd., Bangkok, Thailand.

Republic of China, and Viet Nam.

40. Although the smaller ethnic groups make up only one-third of the population, they constitute more than half of the country's poor due to (i) geographical remoteness; (ii) lack of farming knowledge and skills; (iii) traditional cultivation practices (i.e., shifting cultivation); (iv) limited access to cash and credit; (iv) environmental problems; and (iv) poor physical and social infrastructure. The Hmong and Yao people tend to be the poorest of all ethnic groups, followed by the Khmu and the Tai people.⁶

Table 4: Current Official Classification of Ethnic Groups in Lao PDR

Language Branch	No. of Ethnic Groups
1. Lao-Tai languages	8 ethnic groups
2. Mon-Khmer languages	32 ethnic groups
3. Chinese-Tibetan languages	7 ethnic groups
4. Hmong-Mien languages	2 ethnic groups
TOTAL	49 ethnic groups

2. Ethnic Groups within Project Sites

41. **Overview of Project Ethnic Groups.** Table 5 presents the summary characteristics of BCC Project sites in Lao PDR. It can be seen that of the total beneficiaries, 53% belong to affected ethnic groups. Population density is 4 persons per km², much lower than the national figure of 26 persons/km². Of the total 4,689 households, 35% are considered poor. Female constitute 52% of the total Project area population.

Table 5: Summary Characteristics of Project Sites

PARAMETER	ENTRY
Project Area (km ²)	6980
Population	27,368
Population Density	4
Covered Provinces	3
Covered Villages	69
Covered HHs	4,689
Covered Poor HHs	1,639
% Estimated Poor from BCC Population	35%
Covered Ethnic Groups	14,505
% Ethnic Group from BCI Population	53%
Female Population	14,341
% Female Population	52%

42. An estimated 1,000 households will benefit from Project of which about 53% are affected ethnic groups within the Project villages, concentrated mostly in Xekong (85%), followed by Attapeu (68%) and Champasak with 7.2%. Different ethnic groups (Table 6) found within sample sites of seven villages during the social assessment are the Lavae (38.4%) of Champasak and Attapeu, followed by the Ngea (29.6%) and Ta Lieng (16.3%) of Xekong, and the Sedang (13.4%) of Attapeu. Mixed compositions (2.3%) of Lavae, Laveng, Ta-Auoy, Kaseng, Jeng, Oy, Tai-Dam, Sou, Auy, and Kha-mu are found in Champasak and Attapeu sample villages. AF villages are mostly composed of the Brao and Yae, with the occasional presence of the Ta-Lieng. All groups belong to the Mon-Khmer Language Group except for the Tai Dam belonging

⁶ Lao National Tourism Administration. 2008.

to the Austronesian group.

43. Ethnic groups of Xekong are more homogeneous compared to those from Champasak and Attapeu, where villages are composed of mixed ethnic groups. Most affected ethnic groups belong to the Mon Khmer language, except for the Ti-Dam group affiliated with the Austronesian language group.

Table 6: Distribution of Ethnic Groups within Lao PDR BCI Sites

Attapeu	Champasak	Xekong
Lavae	Lavae	Ngea
Sedang		Ta Lieng
Mixed: Lavae, Laveng, Ta-Auoy, Kaseng, Jeng, Oy, Tai-Dam, Sou, Auy, and Kha-mu		

44. The Mon Khmers are characterized as belonging to the very diverse group of indigenous inhabitants who lacked both writing system and formalized political organizations beyond the village. No sense of political, and little of ethnic unity. Their economy is based on dry hill rice in swiddens with the slash-and-burn method. The Tai-Damon the other hand are said to have not received much influence from Indian culture hence most are animists, resisting absorption into mainstream Lao culture. Their economy is based on irrigated rice.

45. During consultations with select villages in the three provinces, farmers raised the following constraints: (i) lack of farm implements/inputs and technical assistance; (ii) issues on food security, health, and sanitation, (iii) poor rural infrastructure like roads that link to markets, and water supply, (iv) unemployment; (v) need for schools and electrification, (vi) land issues that limit shifting cultivation.

46. **Farm Households, Land Holdings, and Farming Systems in Project Sites.** There are three types of farming systems: (i) paddy rice, (ii) upland shifting cultivation and (iii) combination of both paddy and upland rice production.

47. The Lavaes (belonging to the Mon Khmer) of Champasak generally engage in paddy rice production. Each household on the average farms a hectare of land planted to maize, chili, sweet-potato and other vegetables for their household consumption. Home gardens are located close to their paddy rice fields or places of residence. Rice and vegetable trading is in Pakse and takes about 40 to 50 minutes by truck. About 30% of the total population of BCC villages in Champasak reported rice shortage. However, they are able to purchase rice from the more progressive farmers in the village.

48. The Mon Khmer ethnic groups of Attapeu and Xekong within BCC sites trace their productive activities to swidden agriculture. They however practice the dual system of paddy rice and upland rice production. Household monthly income (cash) from farming and non-timber forest products range from \$30.5 – \$426.8 per household or an average of \$212.0. Paddy land is limited thus there is concentration on upland swidden rice cultivation. Villagers freely occupy degraded forestlands for upland shifting cultivation with agreement from village headmen.

49. While modes of production revolve around subsistence farming, cash income is mostly derived through collection of NTFPs. Level of schooling ranges from Grades 1-4. Work hours among ethnic women exceed those of males at average of 3 hours.

50. Ethnic groups of Champasak and Attapeu are mainly paddy rice farmers as a result of

GoL efforts to limit swidden farming for the past four years. Furthermore, areas available for paddy rice production are extremely limited hence these groups are relegated to marginal lands. Households found in Project areas are dependent on the GOL scheme of issuing Land Certificates, as they are found peripheral and in some cases within protected areas. Certificate issuances have been slow paced as averred by District Officials of the Land Management Office.

51. **Gender Concerns at the Site Level.** Consultations and interviews conducted with Women's Union at the village, district and national levels of Lao PDR as well as the Lao Front reveal the primary need of women to be provided access to social services. Issues and concerns are stipulated as follows:

- (i) Absence or lack of rural and social infrastructure. Inter-village roads are far and difficult to access. There is no means of transportation. Women walk, taking up much of their time, to undertake household reproductive activities.
- (ii) Literacy and living conditions, though improved in recent times, still show marked illiteracy among women, especially from ethnic groups.
- (iii) Poor household credit performance.
- (iv) Low incomes, resulting in increased labor migration, especially by the men, leaving women behind to care for children and agriculture production.

52. Local stakeholders mirrored their priority investments to enable them to address their plight. Responses are clustered by province and were strong on rural inter-village roads, water supply, and electrification. In Sompoy, Attapeu and Ta Ong, Champasak, the concern was the need for toilets. Such choices reflect the need to save on time and access markets and social services, most especially in relation to health, sanitation and education.

C. Project Benefits and Potential Impacts

1. Potential Positive Benefits

53. Potential benefits to Ethnic Groups in the project area are:

- (i) Capacitation of local institutions that enable/ensure community participation in resource planning and management.
- (ii) Improved quality of life and food security among EGs through (a) provision of nondestructive livelihood opportunities, (b) improved availability of resources: water, timber, and other forest products, (c) improved soil fertility, decreased soil movement and reduced vulnerability to risks of climate change, and (d) enhanced biodiversity.
- (iii) Empowering EGs to legitimately utilize their natural resources, the framework for which will be spelled out by commune land use/development plans that the affected EGs themselves will design and agree on.
- (iv) Improved access to market and social and community services. Rehabilitation of farm-to-market roads will improve the local people's access to social services, like education and health.
- (v) The rehabilitation of farm-to-market roads and communal irrigation systems as well as technical assistance extended for appropriate nondestructive livelihood will improve farm productivity.
- (vi) Downloading of village development funds to further allow for ethnic community empowerment in project activities as they address organizational, community and

household needs. This will be most significant if the women's union at the village level is further capacitated in fund and associated technology management.

2. Potential Negative Impacts

54. Notwithstanding the aforementioned benefits, the Project could also bring about or reinforce a number of adverse social impacts that can be mitigated, such as the ones outlined below.

- (i) Encroachment due to improved access. With the rehabilitation of rural infrastructure, there is potential for increasing access to conservation sites especially by outsiders or those not belonging to the same Ethnic Groups within a project-assisted area aggravating current resource use competition. Zoning and land use certification provide the necessary tools to regulate such threats.
- (ii) Social exclusion/elite capture. Protocols in a number of these communities require that project entry seek prior approval from commune/district heads, District Offices and other local governance structures. This includes how benefits are distributed, which have to be coursed through these entities. While protocols are imperative for project acceptability these can pose a challenge to ensuring that there is broad community support for the project and that members of the Ethnic Groups benefit from it, regardless of social status. Participatory, multi-stakeholder consultations and priority identification as well as project social and participatory monitoring tools will be used to mitigate this.
- (iii) Increase in value of land in project sites. Investments introduced through the project increase the likelihood of land speculation, which may increase selling of Ethnic Groups land rights to the likes of tree plantation investors. Benefits derived from such transactions will be transitory but their effects could be further marginalization of Ethnic Groups. The project therefore provides measures in mitigating such deals through collective land use certification.
- (iv) Increase developmental dependency. Commune development grant arrangements may further encourage dependency to donors and government institutions. Such livelihood grants if not handled sensitively may result in corruption; thus the project provides the necessary capacity building in funds management and financial auditing of CDFs. The CDFs are to generate self-sustaining projects and encourage villages to start their own enterprises and account for their own finances.

IV. SOCIAL IMPACT ASSESSMENT AND ETHNIC MINORITY PLANNING

55. This section describes the essential steps in preparing an EGD and provides suggested actions for inclusion in an EGD. Through the SIA each subproject will identify key project stakeholders, beneficiaries and ethnic groups and undertake a culturally appropriate and gender-sensitive process for meaningful consultation. The Project will retain qualified and experienced experts to carry out a SIA for each subproject, to determine the impacts on EGs and prepare an EGD in conjunction with the feasibility study. The subproject's potential social impacts and risks will be assessed against the findings and requirements presented in the SIA and EGD.

A. Social Impact Assessment

56. Qualified and experienced experts will be contracted to conduct a full social impact

assessment (SIA) in a gender-sensitive manner in consultation with EGs. The SIA will (i) establish the baseline socioeconomic profile of EGs in the project area and the project impact zone; (ii) assess access and opportunities to avail of basic social and economic services, (iii) determine the short- and long-term, direct and indirect, and positive and negative impacts of the project on each group's social, cultural, and economic status, (iv) assess and validate which Ethnic Groups will trigger the SPS principles, and (v) assess subsequent approaches and resource requirements for addressing the various concerns and issues of projects that affect them. An EGDP in conjunction with the subproject feasibility study will be prepared if impacts on EGs are established.

57. The social impact assessment concepts and methods are enclosed in Appendix 4. These provide guidance on the methods and the data need to be collected and analyzed.

58. **Data Collection and Analysis.** The SIA will be a field based exercise in which primary socio-economic data as well as the opinions and needs of the affected communities are collected through surveys, interviews, focus groups and participatory meetings conducted for each subproject feasibility study. The SIA will identify the project-affected Ethnic Groups and the potential impacts of the proposed subproject on them. Whether potential effects on Ethnic Groups are positive or negative, each subproject will prepare a SIA that will:

- (i) Provide a baseline socioeconomic profile of the ethnic groups in the subproject area. Baseline information will include ethnicity and sex disaggregated data on demographic, social, cultural, and wealth status (poverty levels) characteristics of the affected EG communities.
- (ii) Identify the land and territories that EGs have traditionally owned or customarily used or occupied; and the natural resources on which they depend.
- (iii) Assess their access to and opportunities to avail themselves of basic social and economic services.
- (iv) Include a gender-sensitive assessment of the affected EG perceptions about the project and its impact on their social, economic, and cultural status. A gender-sensitive analysis is critical to the determination of potential adverse impacts, relative vulnerability and risks to the affected ethnic communities given their particular circumstances and lack of access to opportunities relative to those available to other social groups.
- (v) Assess the potential adverse and positive effects of the subproject. These should be assessed for the short- and long-term, direct and indirect, and positive and negative impacts of the project on each group's social, cultural, and economic status.
- (vi) Assess and validate which ethnic groups will trigger the EG safeguards requirements.
- (vii) Identify and recommend measures necessary to avoid adverse effects or, if such measures are not possible, identifies measures to minimize, mitigate, and/or compensate for such effects. Such measures must ensure that EGs receive culturally appropriate benefits under the project.

59. Below are suggested modalities for engaging EGs during the SIA. Before utilizing a modality on ethnic groups, the Project will ensure that the modality is culturally appropriate.

- (i) Key informant interviews (KII): A series of one-on-one interviews used to collect information from a wide range of people who have in-depth knowledge of selected development issues related to the project/subproject.

- (ii) Focus group discussions (FGD): A group interview, usually conducted with a relatively homogenous group of 8–12 participants to understand their attitudes, feelings, beliefs, and perceptions about the project/subproject.
- (iii) Participatory Learning and Action: A broad array of participatory methods—such as community meetings and mapping activities—to identify development priorities and to catalyze learning and action, especially for the illiterate and semi-literate sectors in the commune.
- (iv) Consultative-workshop: Conduct of facilitated workshop used to reach consensus on priority problems, project/subproject design elements, and monitoring plans, create a common vision and commitment to address development challenges, and build group understanding of opportunities, challenges, and strategic options to focus and address project/subproject priorities.
- (v) Write shop: Conduct of facilitated workshop to review, create, and shape new development policies, strategies, or procedures. Ethnic Groups may choose legitimate representatives as resource persons to attend or if as participants, those who are capable of reading and writing among them.

B. Ethnic Groups Planning

60. By initial screening, if an EGDP is required for a subproject, it will respond to the issues identified in the SIA and through consultations and will set out the measures whereby the Provincial Project Office(PPO) will ensure that:

- (i) Affected EGs receive culturally appropriate social and economic benefits;
- (ii) When potential adverse impacts on EGs are identified, these will be avoided to the maximum extent possible; and
- (iii) Where this avoidance is proven to be impossible, based on meaningful consultation with ethnic communities, the EGDP will outline measures to minimize, mitigate, and compensate for the adverse impacts.

61. Qualified and experienced experts will prepare the planning documents through meaningful consultation with affected groups to ensure that affected EGs will receive culturally appropriate social and economic benefits and that when potential adverse impacts on them are identified, these will be avoided to the maximum extent possible. When avoidance is deemed impossible, the EGDP will identify measures to minimize, mitigate, and compensate for adverse impacts. If EGs will be the majority of direct project beneficiaries, and when only positive impacts are identified, elements of the planning document may be included in the overall project design in lieu of preparing a separate EGDP. The planning document will establish requirements for meaningful consultation and how benefit sharing are fulfilled and integrated into the project design.

62. The level of detail and comprehensiveness of EGDPs will vary depending on the specific subproject and the nature of impacts to be addressed. If EGs are the sole or the overwhelming majority of direct project beneficiaries, and when only positive impacts are identified, the elements of an EGDP could be included in the overall project design rather than preparing a separate EGDP. In such cases, the project document will include a summary of about how the project complies with the EG safeguards. In particular, it will explain how the requirements for meaningful consultation are fulfilled and how the accrual of benefits has been integrated into the subproject design. If a subproject only poses involuntary resettlement impacts on Indigenous Peoples, combined resettlement and IP plans will be prepared.

63. Appendix 5 of this report provides an outline for an EGDP report, based on the subproject outputs and potential positive and negative impacts on local EGs arising from SIA.

64. Following the completion of detailed engineering design and detailed measurement surveys, the EGDP will be updated. Mitigating measures to avoid adverse impacts on EGs and measures to enhance culturally appropriate development benefits will be adjusted, but the agreed outcomes as specified in the draft EGDP will not be lowered or minimized. If new groups of EGs are identified prior to submission of the final EGDP, meaningful consultation will be undertaken with them also.

65. The PPO should ensure that the resources, including financial and human resources, are sufficient before implementing the EGDP. The PPO should also ensure that the LFNC, local authorities and EG leaders are fully informed of the plan of EGDP implementation.

66. The PPO, in coordination with the LFNC, local authorities and EG leaders, implements the EG development activities and the potential negative impact mitigation measures that specified in the approved EGDP, following the plan that was already agreed with local people and EGs in the subproject area during the EGDP preparation. The activities and the outcomes of the EGDP implementation should be recorded in a manner or language understood by ethnic groups and placed in places accessible to them as well as communal, district levels, and provincial project management units

67. An updated EGDF may be necessary to reflect mitigating measures to avoid adverse impacts on EGs as well as measures to enhance culturally appropriate development benefits following the completion of detailed engineering design and detailed measurement surveys. These may be adjusted, but agreed outcomes as specified in the developed framework documents will not be lowered or minimized. If new groups of EGs are identified prior to submission of the final planning document to ADB, meaningful consultation will likewise be undertaken with them.

V. INFORMATION DISCLOSURE, PARTICIPATION, CONSULTATION

A. Information Disclosure

68. **Information disclosure.** Disclosure modalities will be in accordance with prevailing customs and traditions, communication mechanisms to be developed relevant to context of the ethnic groups in the subproject areas in consultation with community elders/ leaders, delivered and posted in conspicuous places or if lengthy, copies provided to community elders/leaders and the LFNC. Popular forms of printed materials include: fact sheets, flyers, newsletters, brochures, issues papers, reports, surveys etc. Popularized materials aim to provide easily read information. These materials should be in the local language enhanced with drawings, to inform a wide range of ethnic groups about the planning and assessment processes and activities.

69. **Documents disclosure.** For ADB, the following are required: (i) draft EGDF as endorsed by the Government before appraisal; (i) final EGDF and/or EGDP; (iii) new or updated EGDF and/or EGDP; and (iv) monitoring reports.

70. For affected ethnic communities, pertinent information for disclosure are: (i) project concept and implementation arrangements, and (ii) results/ minutes/agreements made during meetings/consultations, grievance redress mechanisms, results of assessment studies, EGDF and/or EGDP, and M&E results.

71. The ADB SPS requirements (SR 2 & 3) as well as the ADB Public Communication Policy will serve as guide. The documents listed above will be uploaded in the BCI-II website as well as the ADB website.

B. Consultation and Participation

1. Consultation Across Project Cycle

72. Meaningful consultation with EGs will be ensured through harnessing of culturally appropriate communication strategies and use of local language. Table 7 (Consultation and Participation Plan (C&P) presents the definitive points for stakeholder participation across within the project cycle under the project, specific to subproject preparation and implementation. The Plan will be undertaken to ensure informed participation in all facets of the project cycle such that project benefits that accrue to them shall be in a culturally appropriate manner. Timely disclosure of relevant and adequate information will be made that is understandable and readily accessible to affected people/gender, in an atmosphere free of intimidation or coercion.

Table 7: Consultation and Participation Plan: Summary Chart

ITEM	Stakeholder Group					
	Executing/ Implementing Agency	Lao Front for National Construction	Ministries: Planning & Investments	Vulnerables: EGs, Farmers & Women (Village Level)	Civil Society (i.e., Academe, &NGOs)	
A. Project Cycle: Task/Objective of Stakeholder Participation						
1. Project identification	Prepare sectoral development framework plans and guidelines/strategies for programming & prioritization of subprojects requiring assistance			Prepare and prioritize community needs/ plans/ programs/ projects	Participate in consultations within mandated areas	
	Subproject screening			Participation to free & prior informed consultations		
2. Project Preparation	Identify subproject proposals for possible foreign and local assistance in close coordination with implementing units and other appropriate government agencies	Coordinate and oversee all consultations to project preparation in areas with EGs.	Provide technical staff support to subproject coordination & review	Participation to free & prior informed consultations (resulting in EGDP & RP)	Consultation and participation	
	Recommends criteria and system for evaluating projects; and	Coordinate preparation of appropriate social safeguards			Preparation of Social Assessment	
	Information disclosure					Preparation of EGDP (if applicable)
						Preparation of

ITEM	Stakeholder Group				
	Executing/ Implementing Agency	Lao Front for National Construction	Ministries: Planning & Investments	Vulnerables: EGs, Farmers & Women (Village Level)	Civil Society (i.e., Academe, &NGOs)
					Resettlement Plan (if applicable)
3. Appraisal	Coordinate the conduct of subproject appraisal;	Ensure preparation of appropriate social safeguards;	Monitor status of proposed subprojects for possible funding assistance;	Participation to free & prior informed consultations (resulting in issuance of consent document, if needed)	Participate in validation of safeguards documents
		Verify adequacy of the policy and legal framework; adequacy of allocated technical, financial, & human resources.			
		Examines whether EGs have participated in EGDP formulation			
4. Project Implementation (including inception, detailed engineering, monitoring, & review)	Provide basic policies, systems and procedures for the effective & efficient implementation of subproject;			Spearhead preparation of detailed engineering design of subprojects	Conduct external M&E and performance/impact assessment
	Provides technical assistance in detailed design, project monitoring and assessment;			Implement & manage subproject	Develop & implement IEC plan (to include disclosure measures), materials and/or training
	Monitor performance and impact of project in coordination with donor and oversight government agencies;			Involvement in participatory monitoring	
	Coordinate with funding/donor/ oversight agencies in project programming and monitoring;			Attend to capacity building activities	
	Oversee & coordinate subproject, EGDP & RP implementation;		Ensure project compliance to loan agreements/ commitments;		
	Prepare, conduct and attend (depending on nature of capacity building)subproject capacity building initiatives				
5. Completion & post evaluation	Evaluate project performance and impact in coordination with donors and oversight government agencies;			Participate in project & subproject impact assessment/post project completion	Conduct impact assessment/post project completion
	Document, disseminate lessons learned, & when applicable			Ensure	

ITEM	Stakeholder Group				
	Executing/ Implementing Agency	Lao Front for National Construction	Ministries: Planning & Investments	Vulnerables: EGs, Farmers & Women (Village Level)	Civil Society (i.e., Academe, &NGOs)
	mainstream experiences gained and technologies generated from the subproject, and provide policy recommendations with reference to development initiatives and implications to future projects;			operation and maintenance/ sustainability of subproject	
	Coordinate with funding/donor/ oversight agencies in project evaluation;				
	Conducts post project evaluation and impact analyses.				
		Coordinate project evaluation in EG project areas.			

73. The approach is anchored on improving development outcomes for EGs through their informed participation and decision-making. Culturally sensitive social participation modalities are central to project operations. The approach involves building on peoples' knowledge and capacities. Safeguarding the rights and interests of EGs are basic elements to the main activities of the project development process.

74. Every aspect of the subproject idea is subject to systematic and comprehensive evaluation hence a project C&P plan is prepared. Inasmuch as the ADB-SPS is operational under the project, the consultation processes must address the following: (i) EG customary rights pertaining to lands and resources, and access issues in regard to sustainability of their cultures and livelihood systems; (ii) protection of lands, and resources against illegal intrusion or encroachment; (iii) cultural and spiritual values that EGs attribute to such lands and resources; (iv) indigenous knowledge systems and practices viz long-term sustainability of such practices; and (v) rehabilitation of EG livelihood systems especially among those who may be restricted from their lands.

75. Since the project involves activities that are contingent (Components 2 and 3) on establishing legally recognized rights to lands and territories that EGs have traditionally owned or customarily used or occupied, an action plan for the legal recognition of customary rights to such lands and territories shall be integrated in the EGDP, prior to actual implementation.

76. Project implementers will conduct consultation during the project planning process and preparations phases to initially commence with a social assessment where stakeholder identification and analysis is made. Records of consultation will be kept in particular those identities of recognized community representatives, respected key informants, and legitimate representatives of subgroups (i.e., women, farmers, and youth).

77. Individuals or groups identified to be vulnerable to adverse project impacts and risks will be consulted as regards mitigative measures to the satisfaction of these groups. It is imperative that ethnic groups are consulted in (i) identifying potential impacts and risks; (ii) assessing the consequences of these impacts and risks for their lives and (iii) providing input into the proposed mitigation measures, the sharing of development benefits and opportunities and implementation issues. If new impacts and risks are foreseen or shall crop up during the planning and assessment process, then appropriate consultative measures are made and taken into account in the overall project and subproject designs.

78. **Free, Prior and Informed Consultations.** Executing/Implementing agencies will

conduct consultations with recognized community representatives, respected key informants, and legitimate representatives of sectoral groups. Consultations are characterized as follows:

- (i) Consultation mechanisms must not have manifestations of coercion or intimidation;
- (ii) Lead time is made for the following: (a) project information to be interpreted/translated in the prevailing language common to the commune/village; (b) consideration for local inputs to subproject siting, location, routing, sequencing, and scheduling); and (c) attempts at consensus building for the choice and design of mitigation measures and sharing of development benefits and opportunities; and
- (iii) Consultation with EGs will be scheduled and conducted based on adequate and relevant disclosure of project information.

79. For AF additional financing, reduced emissions from deforestation and degradation (REDD) may require free, prior and informed consent. The UN-REDD Programme's Guidelines for Free, Prior, and Informed Consent will be referred to when necessary.

80. The executing/implementing agency will be assisted by qualified consultants who will disseminate information about the project, in a manner appropriate for the EGs in the project area. Special efforts will be made to ensure that all sectors of the communities will have equal opportunities to express their respective issues and concerns. Consultations will be iterative to ensure affected groups understand the project thus they are able to form and express an opinion about the project.

2. Stakeholder Participation

81. Participation under the Project will involve the transferring of power to EGs at the commune level enabling them to negotiate with development delivery systems, and deciding and acting on what is essential to their development. There are several types or forms of stakeholder participation that could range from shallow, or simply being informed, to deep, or actively participating to be responsible for their own actions and development pathways. Of these, the project shall adopt combinations of these participation types for EGs, summarized as follows:

- (i) **Collaboration/Decision-Making.** While EGs or their legitimate representatives are invited about a pre-determined objective, problems or issues are identified and discussed, and solutions are collaboratively made. Ethnic Groups or their legitimate representatives may not have initiated the collaboration, but they significantly influence the results. Their ideas may change the project design or implementation plan, or contribute to a new policy or strategy. A development professional or organization engaged to solicit stakeholder involvement takes the EGs' perspectives seriously and acts on them.
- (ii) **Joint Empowerment/Shared Control.** Shared control involves deeper participation than collaboration. Ethnic Groups or their legitimate representatives are empowered by accepting increasing responsibility for developing and implementing action plans. They become accountable for either creating or strengthening local institutions. Development professionals are mere facilitators of the locally driven process. Ethnic Groups assume control and ownership of their subproject component, and make decisions accordingly. Participatory monitoring is enabled where EGs assess their own actions using procedures and

performance indicators they selected when finalizing their plans thereby reinforcing empowerment and sustainability.

3. Documentation of the Consultation Process and Broad Community Support

82. Process documentation⁷ is a process-oriented data-gathering tool that aims to enhance understanding of the relationship between process and structure. It is used to capture group dynamics, issues and concerns affecting decisions in support or against the project/subproject. It identifies the facilitating and constraining factors and eventually the consensus building process.

83. Process documentation therefore will serve as documentation for broad community support. It will focus on dimensions that are most likely to affect or influence the decision making and consensus building among EGs and their perceptions, roles and relationships, decisions and trade-offs, strategies, priorities, activities and events, investments and accomplishments, factors that shape the context in which any focus of the project/subproject is operating including factors that help explain outcomes, implications, and lessons.

84. Documentation for broad community support will observe the following:

- (i) Context of the gathering (consultation or any activity initiated by or for the project - reason for the activity, where, when, who are present.
- (ii) Involved stakeholders - note how actors or key players relate to one another (protagonist, antagonist, supporting roles, pro, anti, etc.) within the context of the activity.
- (iii) Identify what is being said; how it is said and may include for non-verbal actions.
- (iv) Note if politics or the ability to influence others come into play. Determine and document the tactics employed.
- (v) Identify the major forces reckoned with, if any, and consider the possible entry points to deal with such force.

85. Results of process documentation should provide information sufficient enough to support decisions about the project/subproject C&P process. Reports should therefore be easy to read/use, and attached to all technical reports to capture broad community support. The process documentation per village/ethnic group will be validated and endorsed by the LFNC observing inherent institutional protocols across levels (village to district and province).

VI. GRIEVANCE REDRESS MECHANISMS

86. The mechanism to receive and facilitate resolution of the affected ethnic groups' concerns, complaints, and grievances is provided and ethnic communities will be appropriately informed about such mechanism. A culturally appropriate, gender responsive, and accessible mechanism is formulated but shall not impede access to the country's judicial or administrative remedies.

87. The Lao PDR judicial system at the local level is based on Village Mediation Committees normally used for grievances against local government agencies, civil actions and minor criminal matters. Should issues not be resolved at the village level, an appeals process at

⁷ Botengan, MP and DM Cacha. 2005. *Multi-Stakeholder Participation Handbook*. Strengthening the Environmental Performance Monitoring and Evaluation System of the Philippine Environmental Impact Statement System (SEPMES-PEISS). EMB-DENR and The World Bank. Institutional Development Facility (IDF) Grant No. TF050534.

district and provincial levels are made available. The districts are often grouped into a sub-Provincial region. In the participating provinces land issues are the dominant issue that Committees deal with both in terms of individuals vs. individuals and individuals vs. government agencies. As this structure and mechanism exists the proposed project will utilize the Committees for grievance redress.

88. In each subproject area, an awareness campaign will be conducted to ensure that all community members (women and men of all ethnic groups) are made to understand the roles, responsibilities and processes of the Village Mediation Committee.

89. Affected EGs shall be exempted from all administrative and legal fees incurred pursuant to the grievance redress procedures. All complaints received in writing from affected EG beneficiaries will be documented and shall be acted upon immediately according to the procedures detailed above.

VII. INSTITUTIONAL ARRANGEMENTS

A. National Level

90. The executing agency will be the Ministry of Natural Resources and Environment (MONRE) who will delegate responsibility for overall project management and coordination to the Department of Forest Resources Management (DFRM). Under the DFRM, a National Project Management Office (NPMO) is responsible for project coordination and management, including financial management of project accounts, procurement of goods and works, recruitment of consultants, and monitoring and reporting.

B. Provincial Level

91. At the provincial level, the Provincial Office of Natural Resources and Environment (PONREs) will be the implementing unit and will in turn establish Provincial Project Management Offices (PPMOs) in each province to responsible for financial management at provincial level, and coordination and management of implementation of subprojects. The PPMO will also coordinate and supervise the work of the District Coordinating Offices (DCOs).

92. The responsibility for preparing and implementing the EGDPs will be the PPMO of the participating province. The EGDP will have an implementation schedule that is coordinated with project/subproject implementation. A capacity building on EGDP preparation and monitoring for EA/IA at national, provincial, and district levels will be considered. Specifically, the PPMO shall:

- (i) Undertake preliminary screening to determine the categorization of EG impacts arising from the Project;
- (ii) Implement the SIA and undertake the participatory consultation with EGs;
- (iii) Use feasibility study socio-economic surveys, including ethnicity and sex disaggregated data, to understand local EG development issues;
- (iv) Undertake and document consultation with communities and local ethnic groups to determine the appropriate interventions;
- (v) Design interventions to address identified issues relevant to the overall subproject;
- (vi) Recruit experienced local consultants as required to assist with social assessments, and prepare the relevant documentation; and

- (vii) Supervise the implementation and monitoring of the EGDPs, or the enhancement measures.

C. District and Village Level

93. District Coordinating Offices consisting of technical staff of the District Offices on Natural Resources and Environment (DONREs) will be responsible for coordination and supervision of subproject activities at district level. Their responsibilities include assisting the PPMO with data collection, undertaking the SIA and organizing public consultations with EGs. The district team will involve technical personnel from the district line agencies, including the Provincial Committee for the Advancement of Women, Lao Women's Union and the LFNC.

VIII. MONITORING AND REPORTING ARRANGEMENTS

94. There will be two monitoring mechanisms: internal monitoring and external monitoring that will determine if the EGDP is being carried out in accordance with this EGDF. The MONRE shall conduct the supervision and in-house monitoring of implementation of the EGDP. The procedure for monitoring will be guided by the monitoring, evaluation, and reporting arrangements set forth in the EGDP. An external monitoring organization (EMO) will verify internal monitoring reports. Prescribed indicators for internal and external monitoring are presented in Appendix 6.

95. External Monitoring will be commissioned by the MONRE to undertake external monitoring and evaluation. The EMO for the Project will be either a qualified individual or a consultancy firm with qualified and experienced staff.

96. The Terms of Reference for the EMO shall be prepared by the Executing agency and shall be acceptable to ADB prior to engagement. The executing agency is responsible for the engagement of the EMO and ensures that funds are available for monitoring activities, and submits monitoring reports to the ADB.

97. Specifically, the activities of the EMO are as follows:

- (i) Verify results of internal monitoring;
- (ii) Coordinate with the relevant EG Office regarding the monitoring and evaluation of the situation of affected EGs;
- (iii) Verify and assess the results of the Project IEC for EGs;
- (iv) Assess efficiency, effectiveness, impact and sustainability of EGDP implementation;
- (v) Suggest modification in the implementation procedures of the EGDP, if necessary, to achieve the principles and objectives of this EGDF;
- (vi) Review of the handling of compliance and grievances cases.

98. Schedule of Monitoring and Reporting. The MONRE shall establish a schedule for the implementation of the EGDP taking into account the project's implementation schedule. It is expected that one month prior to the start of subproject implementation, internal and external monitoring key actors shall have determined all EGDP activities.

99. Compliance Monitoring. This is the first activity that both internal and external monitoring people shall undertake to determine whether or not the EGDP is implemented out as planned and according to this policy. The EMO will submit an Inception Report and Compliance

Monitoring Report one month after receipt of Notice to Proceed for the engagement. The engagement of the EMO is scheduled to meet this Policy's requirement of concluding EGDP implementation activities at least one (1) month prior to the start of zoning and/or civil works.

100. Semi-annual Monitoring. The EMO will be required to conduct semi-annual monitoring of EGDP implementation activities.

101. Final Evaluation. Final evaluation of the implementation of the EGDP will be three months after its completion. The EMO shall coordinate with the Executing agency, LFNC as well as the affected EGs on the dates of the final evaluation of the EGDP.

102. Post-Evaluation. This activity will be undertaken one year after the completion of the project/subproject in order to determine whether the social and economic conditions of affected EGs have improved or have been restored to pre-project levels.

103. Internal and external monitoring reports will be made available to all implementing units, including the ethnic communities. The EMO is accountable to the Executing agency as they submit copies of internal and external monitoring reports to ADB. Costs of monitoring requirements will be reflected in project budgets.

IX. BUDGET AND FINANCING

104. The EGDF provides the line item costs that will be subject to detailed planning and budgeting during implementation at the project and subproject levels.

105. The NPMOs responsible in the provision of necessary financing of all EGDF and EGDP activities. The EGDP will specify funding requirements for each of the actions in the plan. Cost estimates provided in the plans must be as detailed as possible, linked to specific activities. The EGDP will focus on costs involved in mitigating adverse socio-cultural impacts.

106. As such, the project has allocated funds for planning and implementing EGDPs (budget has been included in implementing Components 1, 2 and 3). EGDP planning and budgeting shall observe and adhere to prevailing cultural practices. Table 8 provides the line item costs that will be subject to detailed planning and budgeting during implementation at the project and subproject levels.

Table 8: Budget Items for Activities in Support of Ethnic Groups

ACTIVITY	DESCRIPTION	DURATION
1. Social Assessment	All villages with EGs Conduct social impact assessment and benchmarking	3 months: before any subprojects are implemented
2. Processing of ancestral lands or land use certificates for EG HHS	Land delineation and certification/titling	Variable but before subprojects are implemented. May be during land use planning and delineation
3. Preparation of EGDP and RP		Cost and duration generally same for Social Assessment per study
4. Monitoring for EGDP as built into	<u>Quarterly Monitoring.</u> The EMO will be required to conduct quarterly monitoring of EGDP and RP	Contracted to independent body/entity. Built into

ACTIVITY	DESCRIPTION	DURATION
the project design.	<p>implementation activities.</p> <p><u>Final Evaluation.</u> Final evaluation of the implementation of the EGDP will be three months after its completion. The EMO shall coordinate with the Project Implementation Unit and the affected ethnic community on the dates of the final evaluation for the EGDP.</p> <p><u>Post-Evaluation.</u> This activity will be undertaken one year after the completion of a project/ subproject in order to determine whether the social and economic conditions of the affected EGs have improved or have been restored to pre-project levels.</p>	implementation arrangements for consulting/ contractual services
7. Preparation of IEC materials	Aside from those enumerated in this Table, refer to GAP and coordinate activities/costs	Print materials
8. Capacity building for Gender Mainstreaming	Annual. Targets are beneficiaries, implementers and local government officials; integrate with GAP and RF costs/activities.	Annual for project as a whole and specific to subprojects separate.
9. Sensitivity to EG Culture	Target is project implementers and local government officials/staff	Project onset, mid and post project
10. Capacity building for ethnic communities	Organizational/Financial development and management, Biodiversity Conservation, climate change etc.	
11. Hiring of National Consultant for Social Safeguards		72 person-months
12. Hiring of International Consultant for Social Safeguards		2 person-months

Appendix 1: Forest Investment Program Additional Financing Contributions to the Project Outputs

A. Project Outputs & Activities

1. Given the diversity of agents and drivers of deforestation and degradation, there is a wide range of possible activities that Forest Investment Program additional financing (AF) can adopt to address them. Their common feature is that they are designed to reduce deforestation and leakage permanently, while avoiding adverse social and environmental impacts and fostering positive impacts. These activities are aimed at increasing the value of a standing forest (whether it is intact or not) through increasing productivity and income generation potential, strengthening the compliance and law enforcement activities and the enhancing the value of existing deforested areas to relieve pressure on intact forests. The aim is to generate additional incomes for the deforestation agents and thus make deforestation 'less necessary'. However, these activities must also be consistent with, and complementary to the BCC activities, and hence integrated into the BCC project design.

1. Output 1: Institutions and Community Strengthened for Biodiversity Conservation Management and Ready to Implement REDD+

2. Under output 1 the BCC investments are geared towards strengthening the capacity of the national, provincial, district and cluster levels in corridor planning, corridor management, and providing protection and sustainable use policies, guidelines, and local regulations for enforcing the biodiversity corridor management plan.

3. The AF will focus on: (i) strengthening corridor & land use planning and revising designation of Protection Forest areas in accordance with legal requirements; (ii) integrated forest restoration and village investment planning; (iii) secure community access rights, land tenure and certification; (iv) institutional capacity building and training especially for carbon stock monitoring; and (v) community engagement & participation.

2. Output 2: Biodiversity Corridor Restored, Ecosystem Services Protected, Maintained and REDD+ Ready

4. The second output deals with village and Kum Ban-based forest protection and forest restoration. The bulk of the BCC investments under output 2 are going to forest restoration, which will cover about 3,900 ha in the form of enrichment planting, NTFP planting and agroforestry. The Project intends to aim restore at least 9,000 ha forest, in 5 districts. It plans to establish inventory sample plots, conduct biodiversity survey/reports, and draft Kum Ban forest management plans to move towards sustainable forest management, in order to enhance the ability of the BCC Project to attract REDD funding.

5. The AF additional financing program will focus on strengthening the enforcement capacity of Kum Ban and village-based forest protection through involvement of law enforcement officials from DoFI, the police and local military units. The AF investments will target forest restoration in around 2,000 ha through assisted natural forest restoration and enrichment planting, agroforestry and NTFP production for livelihood enhancement and a similar area of former forest land with insufficient tree cover to regenerate naturally restored with indigenous species through planting and protection against free-range grazing.

6. The AF will specifically focus on: (i) forest protection and law enforcement; (ii) forest restoration & reforestation; (iii) Validation, Verification, Registration and carbon credits; and (iv)

benefit sharing through payment for ecosystem services (PES) arrangements together with the private sector.

3. Output 3: Livelihoods Improved and Small-scale Infrastructure Support Provided in Target Villages

7. Under BCC Output 3, 'Sustainable livelihoods improved and small-scale, low emission infrastructure support provided in target Kum Bans and villages' focuses on demand-driven livelihood and small-scale infrastructure subprojects prioritized in participatory consultations at the start of project will be identified and undergo a rigorous screening process based on village condition and development plan. Each selected Kum Ban has a block allocation for community development infrastructure and livelihood improvements comprising NTFP production and processing, home gardens, livestock farming, improved farming systems for annual and perennial crops and other interventions selected by beneficiaries. This output also promotes a establishment of Village Development Funds (VDF) as a decentralized financial instrument, managed by the Kum Ban of village committees mechanism as a decentralized local level instrument to receive REDD funding for carbon sequestration.

8. The AF will focus on: (i) improving traditional subsistence agricultural practices; (ii) the development of alternative agro-forestry and forestry-pasture-based livelihood systems (iii) promotion and cultivation of special cash crops and market development; and (iv) diversification of forest products for charcoal production.

4. Output 4: Project Management and Support Services Provided

9. BCC Output 4, focuses on the provision of project resources, capacity and management structures for the successful execution of the Project at the national and provincial levels (i.e. provincially based provincial project management units (PPMUs) and provincial project offices (PPOs)), as well as at Project Implementation Units at the District level.

10. 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 (AF National Coordinator and AF Accountant); strengthening of provincial project management offices (PPMOs) in Sekong and Attapeu provinces and district level project implementation offices (PIOs) in Phouvong and Dakcheung districts respectively comprising project administration staff, together with REDD+, agro-forestry and small enterprise development specialists; the establishment of Kum Ban level 'working groups' for Forestry/REDD+, livelihood support and village enterprise development; monitoring social and environmental safeguards; and specific initiatives to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

Appendix 2: AF Additional Financing Villages

Province	District	Cluster	Village
Sekong	Dak Cheung	Dakpar	Bronggnai Brongnoi + Brongyai Dakpaneu DakMoung Dakpar km 20 Dakpar + Daklan
		Tateau	DakTrang DakMi Dak Bu Dak Le Dak Tring DakMongYai + Noi
		Xekaman	Dak Ta OukNoy DakMuan Dak Dome DakMun Dak Ta OukYai DakYrung Dak Dian Mangha
Attapeu	Phouvong	Vongvillai	Vongsomphou Vangyang Phouhome Phouxay Lamong
		Namkong	Namkong Vonglakohone Viangxai

Appendix 3: Screening Form for Impacts on Ethnic Groups

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
A. Indigenous Peoples Identification				
1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, scheduled tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?				
2. Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities?				
3. Do such groups self-identify as being part of a distinct social and cultural group?				
4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?				
5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?				
6. Do such groups speak a distinct language or dialect?				
7. Has such groups been historically, socially and economically marginalized, disempowered, excluded, and/or discriminated against?				
8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels?				
B. Identification of Potential Impacts				
9. Will the project directly or indirectly benefit or target Indigenous Peoples?				
10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g. child-rearing, health, education, arts, and governance)				
11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)				
12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?				
C. Identification of Special Requirements <i>Will the project activities include:</i>				
13. Commercial development of the cultural resources and knowledge of Indigenous Peoples?				
14. Physical displacement from traditional or customary lands?				

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples?				
16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied or claimed by indigenous peoples ?				
17. Acquisition of lands that are traditionally owned or customarily used, occupied or claimed by indigenous peoples?				

Anticipated project impacts on Indigenous Peoples

Subproject activity	Anticipated positive effect	Anticipated negative effect
1.		
2.		
3.		
4.		
5.		

Indigenous Peoples Category (Encircle 1)

Category	Description	Subproject Eligibility
A	Significant impacts on Indigenous Peoples	Not Eligible
B	Insignificant impacts on Indigenous Peoples	Eligible
C	No impact on Indigenous Peoples	Eligible

Appendix 4: Social Impact Assessment Concepts and Methods

I. SOCIAL DEVELOPMENT AND SOCIAL ANALYSIS

1. Inclusive social development” is considered essential to the reduction of poverty and achievement of development goals. In this Social Impact Assessment (SIA) outline, “social development” refers to equitable and sustainable improvements in the physical, social, and economic well-being of individuals and social groups, especially those that are socially or economically disadvantaged. Social development also has an institutional dimension, in that social variables such as gender, ethnicity, race, and age often shape the formal and informal rules and norms that influence people’s access to services, resources, opportunities, and decision making economic well-being of individuals and social groups, especially those that are socially or economically disadvantaged.

A. Social Development Goal and Outcomes

2. SIA assists in promoting inclusive social development by helping to achieve development outcomes that are equitable and sustainable, thereby contributing to poverty reduction and development goals. The social development outcomes sought through this approach to SIA are as follows:

- Greater inclusiveness and equity in access to services, resources, and opportunities;
- Greater empowerment of poor and marginalized groups to participate in social, economic, and political life; and
- Greater security to cope with chronic or sudden risks, especially for poor and marginalized groups.

3. Participatory processes in which poor and excluded people can find a voice are especially important. More inclusive processes create a more positive environment in which poor and marginalized groups can make choices and pursue their interests. Effective social safety net programs and other mechanisms are also needed to cushion poor and vulnerable households from economic or other shocks so that they can make more steady progress in improving their quality of life.

B. Key Social Dimensions

4. The scope and depth of the social analysis will vary depending on the sector, the focus and complexity of the project, and the social context in which it will be implemented. Nevertheless, the thematic areas that a social analysis will cover generally includes the following key social dimensions and strategies:

- Participation;
- Gender and development;
- Social safeguards; and
- Management of other social risks and vulnerabilities.

5. These social dimensions are interrelated and crosscutting and while they capture the main types of social issues that arise in development projects, they are not exclusive and can take on different attributes and significance depending on the local context.

C. Key Social Analysis Outputs

6. Social analysis is an integral part of project design process and should contribute to the technical and economic analyses, stakeholder consultations, consideration of alternative design options, and preparation of the final design, including monitoring and evaluation indicators. The overall results of the social assessment will provide the following key outputs:

- Socioeconomic profiles of relevant population groups;
- Social action or mitigation plans, or other measures incorporated in the project design; and
- Social development targets and indicators.

II. DATA COLLECTION

7. This section describes some main tools and data collection methods for social analysis that are useful in designing projects. Data collected for the social analysis should provide a basis for setting appropriate targets, a baseline for monitoring social impacts of the project during implementation and for any social action or mitigation plans. Although there are several data collection methods available for carrying out the social analysis, in all cases, the social analysis should be organized and sequenced so as to:

- Address the significant social issues identified;
- Provide relevant social development inputs to the technical, economic, and other analyses;
- Incorporate appropriate measures in the project design, including any social action or mitigation plans; and
- Provide relevant benchmark data for monitoring social impacts of the project during implementation.

A. Data Collection Methods

8. Various methods for data collection that can be used in the social analysis to investigate the poverty and/or social issues and to identify and clarify the expected impact of the project on different groups, including the poor and excluded. Based on the data collected, poverty, social, and/or risk analysis can be carried out and appropriate design measures, including action or mitigation plans, can be developed.

9. For most projects, the data collection process will include both primary and secondary data, and a combination of qualitative and quantitative methods. Qualitative approaches are particularly relevant to social analysis because they identify issues and capture variables not obtainable through quantitative surveys, particularly relating to social inclusion/exclusion, empowerment/disempowerment, and security/insecurity.

A.1. Qualitative Methods

10. Some main methods for collecting qualitative (i.e., non-numerical) data include:

- Direct Participant Observation. Under direct observation, the researcher observes individual, group, or community activities as unobtrusively as possible. Under participant observation, the researcher observes these activities while living and participating in the relevant community.
- Interviews. Depending on the circumstances, interviews can be structured (i.e., fairly formal and closely following a written interview guide), semi-structured (i.e., partially directed by a written interview guide, but open and conversational enough to allow interviewees to introduce and discuss other topics of interest), or unstructured (i.e., organized around a few general questions or topics, but generally informal and open-ended).
- Questionnaires. Similar to interviews, these can include formal, closed questions (e.g., multiple choice), semi-structured questions, open-ended questions, or a combination of these.

- Focus Group Meetings. These semi-structured consultations with a small group (generally 5–10 participants plus 1–2 facilitators) are used to explore people's attitudes, concerns, and preferences. Focus groups are particularly useful to elicit the views of members of a community who may be reluctant to speak in a more public setting (such as women, Ethnic Groups, or disadvantaged castes; the disabled, or poor individuals; and households).
- Workshops. These consultations, which can be highly structured or semi-structured, are generally conducted over 1–2 days and bring together a wide range of stakeholders to analyze a particular problem, identify alternative ways to address the problem, and endorse a particular solution or set of actions to be taken. Experienced facilitators are essential to the success of a workshop.
- Town/Village Meetings. Community-level meetings can be organized for a variety of purposes, including information sharing, consensus building, prioritizing of issues, planning of interventions, and collaborative monitoring and evaluation.
- Mapping. This exercise involves the creation of a pictorial description of a local area by the local inhabitants, usually in a focus group or larger group setting. Common types of maps created through this participatory process include resource maps, health maps, and institutional maps. The maps provide baseline data for further participatory analysis and planning.

A.2. Quantitative Methods

11. The quantitative data relevant to social analysis can include both primary and secondary data. Primary data can be collected through such instruments as a sample survey (discussed further in appendix 3.3), a project-specific census (covering all relevant individuals or households), or land/asset inventory (also covering all relevant individuals/households). It is important to structure these instruments so that the data collected are disaggregated by gender, ethnicity, age, income level, and other relevant factors. Sources of secondary data that may be relevant include the following:

- Population Census. A national census can usually provide basic data on employment, household size, housing, and access to basic services, including data disaggregated by region or state/province.
- Living Standard Measurement Surveys (LSMS) and Other Existing Household Surveys. LSMS and other multi-topic surveys can provide data on household income and expenditures, employment, health, education, ownership of land and other assets, and access to basic services and social programs.
- Demographic and Health Surveys. These surveys generally include data on (a) health, infant mortality, fertility, contraceptive practices and family planning, antenatal care, type of facility and care used by women for childbirth, feeding practices, vaccination, health center use by mothers and children, satisfaction with health services, and cost of treatment; (b) educational attainment; (c) occupations of men and women; (d) migration; (e) access to water, sanitation, and energy services; and (f) ownership of durable goods. These surveys can be used to calculate household wealth and are particularly relevant to gender analysis.
- Employment Surveys. These surveys provide data on (a) employment, unemployment, and underemployment patterns; (b) wages and other household income; (c) demographics; and (d) housing features. However, the surveys are unlikely to provide information on microenterprises and other informal business activities, or on the unpaid labor of household members involved in agriculture or household businesses.

B. Profile of Beneficiaries

12. Socioeconomic profiles are key inputs to the design of a project, and provide baseline data for monitoring the social impacts of the project on relevant groups. The purpose of these profiles is to:

- Identify the relevant client/beneficiary population and any other populations likely to be affected by the project;
- Identify subgroups with different needs and interests; and
- Assess the relevant needs, demands, constraints, and capacities of these groups and subgroups in relation to the proposed project.

13. These profiles provide a basis for further analysis of significant social issues (e.g., related to gender, Ethnic Groups, involuntary resettlement, labor, affordability, or health/trafficking risks related to large infrastructure projects). They also aid the project design team in framing project components, selecting technologies, and devising implementation arrangements that are appropriate, feasible, and responsive to local needs and capacities.

C. Content of Socioeconomic Profiles

14. Socioeconomic profiles are generally based on secondary data (such as existing census, household surveys, demographic and health surveys, country poverty analysis, and other sources), supplemented as needed by project-specific surveys and/or PRAs. A sample outlines of socioeconomic profile addressing social issues in agriculture and rural development is provided below.

C.1. Outline of Profile for Agriculture or Rural Development Project

- (i) Location and physical characteristics:
 - Map (showing roads, land use, rivers, bridges, major settlement areas); and
 - Description of location.
- (ii) Economic (including disaggregation of data by gender, ethnicity, and income level):
 - Ownership of assets;
 - Land (e.g., amount, type, distribution, security of tenure);
 - Other (e.g., livestock, equipment, buildings);
 - Type of livelihood (e.g., subsistence, commercial, or both);
 - Household income/expenditures;
 - Skills;
 - Employment and allocation of labor;
 - Use of and access to credit;
 - Use of and access to marketing service; and
 - Use of and access to commercial inputs.
- (iii) Social infrastructure (including disaggregation of data by gender, ethnicity, and income level):
 - Access to health services;
 - Education (primary, secondary, informal);
 - Water and sanitation;
 - Housing;
 - Roads and communications; and
 - Energy.

- (iv) Demographic (including disaggregation of data by gender, ethnicity, and income level):
 - Age/sex/family size;
 - Birth/death rates;
 - Health and nutrition (of adults and children);
 - Migration (in and out); and
 - Number of single-parent households.
- (v) Social organization (including evidence of differences based on gender, ethnicity, or income level):
 - Family structures;
 - Social structures in the community;
 - Information on how collective decisions are made;
 - Local institutional structures;
 - Nongovernment organizations (NGOs) or community-based organizations (CBOs) in the area; and
 - Level of social cohesion, social respect, and initiative.

C.2. Surveys

15. Surveys provide important data to project design teams, especially in constructing a socioeconomic profile of the intended clients/beneficiaries and other groups likely to be affected by the project, and in analyzing significant social issues, such as involuntary resettlement or affordability. Much of the relevant data may already be available from the latest population census, living standards measurement survey, or demographic and health surveys. However, project-specific surveys may also be needed to investigate particular social issues in depth, especially if the issues pertain to a specific region or social group. .

D. Designing a Sample Survey

16. In designing a sample survey to inform the design of a project, the project design team will need to specify:

- Objectives of the survey;
- Target population (including relevant subgroups based on gender, ethnicity, income level, location, or other factors);
- Data to be collected (keeping in mind that the survey should be as focused as possible);
- Type of measurement instrument and survey technique;
- Sample frame (keeping in mind that the definition of “project-affected person” will vary depending on the project and on the social issue being investigated, and that some survey questions may be more appropriately directed to individuals rather than households);
- Sample size (which will also vary depending on the type of project, its location, and the social issues involved—discussed further below); and
- Sampling method.

E. Participatory Rapid Assessments

17. Participatory rapid assessment (PRA) is an approach and range of techniques that enable stakeholders to analyze their problems and then plan, implement, and evaluate agreed-upon solutions. PRA allow timely analysis of sufficient accuracy and accepted validity to ensure

stakeholder commitment to outcomes. This is best achieved by an astute combination of inclusive group discussions, individual interviews, and analysis of background information.

F. PRA Techniques

18. PRA techniques emphasize visual and verbal analyses (e.g., observing, interviewing, mapping, sketching, ranking) to ensure that data collection and discussion processes can be public, transparent, and group oriented. Commonly applied PRA techniques include:

- Key informant interviews;
- Semi-structured interviews;
- Transect walks;
- Participatory mapping and modeling;
- Wealth ranking and matrix ranking;
- Oral histories;
- Trend analysis;
- Development of seasonal calendars;
- Storytelling;
- Critical incident analysis; and
- Problem census, among others.

III. CONSULTATION AND PARTICIPATION

A. Stakeholder Analysis

19. Stakeholders are people, groups, or institutions that may be affected by, can significantly influence, or are important to the achievement of the stated outcome of a project. They include government, civil society, and the private sector at national, intermediate, and local levels. Stakeholder analysis identifies key project stakeholders, their project-related interests, and the ways they affect project risk and viability. The stakeholder analysis seeks to answer questions like:

- Who depends on the project?
- Who is interested in the outcome of the project?
- Who will influence the project?
- Who will be affected by the project?
- Who may work against the project?
- Who can or should be included in the planning of the project?

B. Steps in Undertaking Stakeholder Analysis

20. Broadly speaking, stakeholder analysis consists of four steps:

- (i) Identifying major stakeholder groups:
 - The main population groups that may be affected—positively or negatively—by the project and their social characteristics;
 - Relevant subgroups that may be affected differently (such as women or girls; ethnic groups, or disadvantaged caste groups; youth or the elderly);
 - Key informants, such as community leaders or local government officials;
 - Executing or implementing agency staff likely to be involved in the project;
 - Civil society organizations (CSOs) in the project area; and
 - Private sector firms likely to be involved in or affected by the project.
- (ii) Determining stakeholders' importance and influence on project planning;
- (iii) Analyzing their interests, resources/capacities, and mandates; and

- (iv) Selecting representation among stakeholders to be included in the participatory processes of the project.

21. A variety of participatory techniques, including PRA, may be used to collect data relevant to stakeholder information. Care should be taken to ensure that stakeholders with less voice and influence, such as women, Ethnic Groups, and poor households and communities, are fully represented. For example, in most cases, the assessment should include separate consultations with women and men to ensure that those women's views are heard.

C. Communication and Participation Plan

22. Developing a Communication and Participation Plan (C&P Plan) is recommended for most projects. A C&P plan involves systematically deciding on whom to engage, in what manner, and when. Its purposes are to promote transparency, success, and sustainability, and to prevent delays and manage conflict. It builds on stakeholder analysis and aims to create a systematic plan of action for each phase of activity.

23. For projects in which beneficiary participation is important to the project's overall success, appropriate C&P mechanisms for project implementation should be identified and incorporated in the project design. These could include:

- Targets for the participation of particular groups in project activities;
- Engagement of community mobilizers;
- Provisions for special training or outreach activities (e.g., to facilitate women's participation);
- Inclusion of beneficiary representatives in project review missions and workshops;
- Engagement of NGOs or local research institutes to carry out independent monitoring of the project.

24. Every development situation is different, so each C&P plan is, to some extent, unique. It must balance short- and long-term objectives with both resource and time considerations and concerns over possible project delays or complaints if stakeholders feel they have been not sufficiently included in decision making. The relative importance of stakeholders varies in sector and project work.

D. Checklist for Preparing a Consultation and Participation Plan

25. The following points provide a checklist of questions for preparing a C&P plan.
- Which stakeholder groups will be engaged in consultation and participation (C&P) processes based on the initial stakeholder analysis?
 - What decisions need to be made through C&P? And how?
 - What is the anticipated breadth and depth of stakeholder engagement at each stage of the project cycle?
 - How will C&P be linked to summary poverty reduction and social strategy and safeguards requirements?
 - How will C&P be used during implementation?
 - What C&P methods will be used?
 - What is the time line for C&P activities?
 - How will C&P methods be sequenced?
 - How have roles and responsibilities for conducting C&P activities been distributed among the executing agency, consultants, nongovernment organizations, and others?
 - Are C&P facilitators required?
 - What will the C&P plan cost to implement and what budget will be used?

IV. ADDRESSING GENDER DISPARITIES

26. Important differences in roles between women and men, or other gender norms, may have a significant bearing on the project. Because gender disparities usually result in women and men having different needs, demands, and constraints, it is crucial to identify them early in the design process before key decisions are made. If these differences are ignored, the prospects for success of the project may be adversely affected, and women may not have the opportunity to benefit from the project on equal terms with men. Social norms related to gender roles frequently result in:

- Gender-based inequality in access to and control of key resources;
- Unequal opportunities for women and men in areas such as education, mobility, and public decision making; and
- Formal or informal discrimination against women in areas such as inheritance, ownership and registration of land, access to credit, and employment.

A. Gender Analysis

27. The purpose of conducting gender analysis is to determine if significant gender issues related to the proposed project are present. Significant gender issues will be present if:

- Women are substantially involved in the relevant sector;
- The proposed project has the potential to directly improve women's or girls' access to opportunities, services, assets, or resources; or
- The project could have a negative impact on women or girls. Based on this analysis, appropriate measures need to be identified and included in the project design to ensure that women and/or girls can participate in and benefit from the project.

28. Gender analysis identifies:

- Gender differences and disparities that may affect the feasibility and success of the program/project;
- Opportunities within the program/project to improve women's and/or girls' access to basic services, economic opportunities, assets, resources, or decision making; and
- Specific components, activities, or other mechanisms to ensure that both women and men (or girls and boys) participate in and benefit from the program/project.

B. Gender Checklist for Project Design

29. The project's gender analysis should be documented to allow a full assessment of the project design. The following checklist describes the details of questions that should be answered as part of the project design documentation.

- (i) Do project objectives explicitly refer to women and men (or girls and boys)?
 - Have the needs of both men and women (or boys and girls) in the project sector been defined?
 - Do the project objectives state the benefits for men and women (or boys and girls)?
 - Will women and/or girls be direct beneficiaries in all project components?
- (ii) Do project documents describe project consultation and participation (C&P) strategies?
 - Have local women been consulted during data collection and design?
 - Have local women's nongovernment organizations (NGOs) been consulted?

- Have any constraints to the participation of men and women (or boys and girls) in the project been identified (e.g., cultural, social, religious, economic, legal political, or physical constraints)?
 - Have strategies and activities been formulated to address these constraints during project implementation?
 - Has a C&P plan for men and women been developed?
- (iii) Has gender division of labor been considered?
- Have sex-disaggregated data been collected on the gender division of labor, including household and social responsibilities (i.e., who does what, where, when, and for how long)?
- (iv) As to who has access to and control over resources (including land, forests, waterways, markets, energy/fuel, equipment, technology, capital/credit, and training) been considered?
- Will project activities adversely affect access to and control over resources (e.g., through loss of land, reduced access to markets) of women or men?
 - Will new technologies introduced under the project benefit both women and men?
 - Are women and men equally involved in training opportunities offered?
 - Are project-supported organizations, such as farmer, user, or credit groups, equally accessible to women and men?
 - Are separate activities or components for women (or girls) required to ensure equal access to project resources?
- (v) Have gender concerns in the project design and scope been addressed?
- Does the project design include components, strategies, design features, or targets to promote and facilitate involvement of women (or girls) in the project?
 - Are these design features sufficient to ensure the equitable distribution of project benefits between men and women (or boys and girls)?
 - Does the project document describe these features and design mechanisms?
- (vi) Does the executing agency have the capacity to implement gender-sensitive projects?
- Does the executing or implementing agency have the capacity to deliver services to women and/or girls?
 - Does the executing or implementing agency have female field staff, e.g., female extension workers?
 - Have strategies been identified to strengthen counterpart gender analysis, gender planning, and implementation capacity; and have these strategies been cosseted?
- (vii) How will gender impacts on men and women (or boys and girls) and on the relationships between them be monitored?
- Are there indicators to measure progress in achieving benefits for men and women (or boys and girls)?
 - Will there be a collection of sex-disaggregated data to monitor gender impacts?

- (viii) Are project resources adequate to deliver services and opportunities to both men and women (or boys and girls)?
- Are strategies to promote the participation of men and women (or boys and girls) and equal access to benefits budgeted?
 - Does the budget include allocations for activities to facilitate the participation of women and/or girls?
 - Are strategies and any targets for the participation of and benefits for men and women (or boys and girls) included in the logframe?
 - How is gender expertise to be provided during project implementation?
 - Is responsibility for gender issues included in the terms of reference for the project implementation consultants?
 - Does a covenant/s in the financing documents for the project support the project gender strategies?

C. Gender Action Plans

30. For projects in which significant gender issues have been identified, a priority task of the social analyst or gender specialist is to prepare a Gender Action Plan (GAP) during the design phase. The GAP will follow from detailed gender and is developed to identify project design strategies, mechanisms, and components for addressing gender concerns. The project's gender plan is essentially a summary (no more than 5 pages, including a summary table of actions) that provides information on:

- The preparatory work undertaken to address gender issues,
- The features or mechanisms included in the project design to promote women's involvement,
- Mechanisms to ensure implementation of the gender design elements, and
- Gender monitoring and evaluation.

31. The gender plan should also note what budget provision has been made for these components or design features. Without the allocation of adequate resources, it is unlikely that any separate provisions for the involvement of women or girls will be implemented. Any provision for a gender specialist to help in project implementation should also be noted.

V. SOCIAL RISKS AND VULNERABILITIES

A. Social Safeguards

32. Social safeguard policies¹ on Ethnic Groups and involuntary resettlement are intended to identify, minimize or avoid, and if necessary mitigate potential adverse impacts that may be introduced by a project. Because of the nature of the potential adverse impacts, and the procedural requirements of the social safeguard policies themselves, it is important to identify and categorize these risks as early as possible in the project cycle

B. Other Social Risks and Vulnerabilities

33. It is important to identify other risks and vulnerabilities that could undermine the project's objectives or affect the project's benefits to clients/beneficiaries. In addition to the social safeguard issues discussed above, other risks may be directly linked to a project, such as

¹ ADB's social safeguard policy for Ethnic Groups and categorization of risk (A, B or C) are described in the main text of the EMPF and further information may be found in ADB's *Ethnic Groups' Policy Handbook*, 2007. Information related to social safeguards for Involuntary Resettlement may be found in ADB's "Safeguard Policy Statement 2009" and in ADB's *Handbook on Resettlement*, 1998.

- Poor labor conditions for workers involved in project activities;
- Policy reforms supported by the project that could lead to loss of jobs or benefits through restructuring;
- Policy reforms under the project that could reduce access to services (e.g., through increases in user fees or other charges), or increase prices of essential commodities through tariff increases;
- Risks of HIV/AIDS transmission or human trafficking associated with large infrastructure projects; or
- Risks or vulnerabilities related to caste, age, disability, or a combination of these factors.

34. Depending on the severity of the risks and vulnerabilities, further social analysis and the development of social protection measures or full mitigation plans may be required at the design stage. The project should identify whether any significant social risks or vulnerabilities may be introduced or exacerbated by the project. If so, the project team should determine the scope of social analysis to be undertaken and mitigation measures or plans to be developed during the project design phase.

Appendix 5: Outline of an EGD

This outline is part of the Safeguard Requirements 3. An EGD is required for all projects with impacts on Ethnic Groups. Its level of detail and comprehensiveness is commensurate with the significance of potential impacts on Ethnic Groups. The substantive aspects of this outline will guide the preparation of EGDs, although not necessarily in the order shown.

A. Executive Summary of the EGD

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

B. Description of the Project

This section provides a general description of the project; discusses project components and activities that may bring impacts on Ethnic Groups; and identify project area.

C. Social Impact Assessment

This section:

- (i) Reviews the legal and institutional framework applicable to Ethnic Groups in project context.
- (ii) Provides baseline information on the demographic, social, cultural, and political characteristics of the affected Ethnic Groups communities; the land and territories that they have traditionally owned or customarily used or occupied; and the natural resources on which they depend.
- (iii) Identifies key project stakeholders and elaborate a culturally appropriate and gender-sensitive process for meaningful consultation with Ethnic Groups at each stage of project preparation and implementation, taking the review and baseline information into account.
- (iv) Assesses, based on meaningful consultation with the affected Ethnic Groups, the potential adverse and positive effects of the project. Critical to the determination of potential adverse impacts is a gender-sensitive analysis of the relative vulnerability of, and risks to, the affected Ethnic Groups given their particular circumstances and close ties to land and natural resources, as well as their lack of access to opportunities relative to those available to other social groups in the communities, regions, or national societies in which they live.
- (v) Includes a gender-sensitive assessment of the affected Ethnic Groups' perceptions about the project and its impact on their social, economic, and cultural status.
- (vi) Identifies and recommends, based on meaningful consultation with the affected Ethnic Groups, the measures necessary to avoid adverse effects or, if such measures are not possible, identifies measures to minimize, mitigate, and/or compensate for such effects and to ensure that the Ethnic Groups receive culturally appropriate benefits under the project.

D. Information Disclosure, Consultation and Participation

This section: (i) describes the information disclosure, consultation and participation process with the affected Ethnic Groups that was carried out during project preparation; (ii) summarizes their comments on the results of the social impact assessment and identifies concerns raised during

consultation and how these have been addressed in project design; (iii) in the case of project activities requiring broad community support, documents the process and outcome of consultations with affected Ethnic Groups and any agreement resulting from such consultations for the project activities and safeguard measures addressing the impacts of such activities; (iv) describes consultation and participation mechanisms to be used during implementation to ensure ethnic group participation during implementation; and (v) confirms disclosure of the draft and final EGDP to the affected Ethnic Groups.

E. Beneficial Measures

This section specifies the measures to ensure that the Ethnic Groups receive social and economic benefits that are culturally appropriate, and gender responsive.

F. Mitigative Measures

This section specifies the measures to avoid adverse impacts on Ethnic Groups; and where the avoidance is impossible, specifies the measures to minimize, mitigate and compensate for identified unavoidable adverse impacts for each affected Ethnic Groups.

G. Capacity Building

This section provides measures to strengthen the social, legal, and technical capabilities of (a) government institutions to address Ethnic Groups issues in the project area; and (b) Ethnic Groups organizations in the project area to enable them to represent the affected Ethnic Groups more effectively.

H. Grievance Redress Mechanism

This section describes the procedures to redress grievances by affected Ethnic Groups. It also explains how the procedures are accessible to Ethnic Groups and culturally appropriate and gender sensitive.

I. Monitoring, Reporting and Evaluation

This section describes the mechanisms and benchmarks appropriate to the project for monitoring, and evaluating the implementation of the EGDP. It also specifies arrangements for participation of affected Ethnic Groups in the preparation and validation of monitoring, and evaluation reports.

J. Institutional Arrangement

This section describes institutional arrangement responsibilities and mechanisms for carrying out the various measures of the EGDP. It also describes the process of including relevant local organizations and NGOs in carrying out the measures of the EGDP.

K. Budget and Financing

This section provides an itemized budget for all activities described in the EGDP.

Appendix 6: Suggested Internal and External Monitoring Parameters

Table A6.1. Internal Monitoring Indicators

Monitoring Indicators	Basis for Indicators
1. Budget and timeframe	<p>Have capacity building and training activities been completed on schedule?</p> <p>Are EGDP activities being implemented and targets achieved against the agreed time frame?</p> <p>Are funds for the implementation of the EGDP allocated to the proper agencies on time?</p> <p>Have agencies responsible for the implementation of the EGDP received the scheduled funds?</p> <p>Have funds been disbursed according to the EGDP?</p> <p>Has social preparation phase taken place as scheduled?</p> <p>Have all clearance been obtained from the LFNC?</p> <p>Have the consent of the ethnic community in the affected area been obtained?</p>
2. Public Participation and Consultation	<p>Have consultations taken place as scheduled including meetings, groups, and community activities? Have appropriate leaflets been prepared and distributed?</p> <p>Have any APs used the grievance redress procedures? What were the outcomes?</p> <p>Have conflicts been resolved?</p> <p>Was the social preparation phase implemented?</p> <p>Were separate consultations done for EGs?</p> <p>Was the conduct of these consultations inter-generationally exclusive, gender fair, free from external coercion and manipulation, done in a manner appropriate to the language and customs of the affected EGs and with proper disclosure?</p> <p>How was the participation of ethnic women and children? Were they adequately represented?</p>
3. Benefit Monitoring	<p>What changes have occurred in patterns of occupation, production and resources use compared to the pre-project situation?</p> <p>What changes have occurred in income and expenditure patterns compared to pre-project situation? What have been the changes in cost of living compared to pre-project situation? Have APs' incomes kept pace with these changes?</p> <p>What changes have taken place in key social and cultural parameters relating to living standards?</p> <p>What changes have occurred for EGs?</p> <p>Has the situation of the EGs improved, or at least maintained, as a result of the project?</p> <p>Are ethnic women reaping the same benefits as ethnic men?</p> <p>Are negative impacts proportionally shared by EG men and women?</p>

Adapted from ADB's Handbook on Resettlement: A Guide to Good Practice. 1998.

Table A6.2. External Monitoring Indicators

Monitoring Indicators	Basis for Indicators
1. Basic information on AP households	Location Composition and structures, ages, education and skill levels Gender of household head Ethnic group Access to health, education, utilities and other social services Housing type Land use and other resource ownership and patterns Occupation and employment patterns Income sources and levels Agricultural production data (for rural households) Participation in neighborhood or community groups Access to cultural sites and events Value of all assets forming entitlements and resettlement entitlements
2. Levels of AP Satisfaction	How much do EGs know about grievance procedures and conflict resolution procedures? How satisfied are those who have used said mechanism? How much do the affected EGs know about the EGDP? Do they know their rights under the EGDP? How much do they know about the grievance procedures available to them? Do they know how to access to it? How do they assess the implementation of the EGDP?
3. Other Impacts	Were there unintended environmental impacts? Were there unintended impacts on employment or incomes?
4. Ethnic Group Indicators	Are special measures to protect EG culture, traditional resource rights, and resources in place? How are these being implemented? Are complaints and grievances of affected EGs being documented? Are these being addressed? Did the project proponent respect customary law in the conduct of public consultation, in EGDP implementation, in dispute resolution? Did the project proponent properly document the conduct of public consultations, the formulation and implementation of the EGDP? Were the public consultations inter-generationally inclusive? Were women and children proportionally represented? Were representatives of the LFNC present in the public consultations? During the monitoring of EGDP implementation?

Adapted from ADB's Handbook on Resettlement: A Guide to Good Practice. 1998.

TECHNICALFEASIBILITY STUDY

Expanding the scope of the 'Biodiversity Conservation Corridors (BCC) Project in Lao PDR' to accommodate additional financing from the Forest Investment Program (FIP)

For Grant 0242-LAO: Greater Mekong Sub-Region Biodiversity Conservation Corridors Project – Additional Financing Component

ABBREVIATIONS

ADB	–	Asian Development Bank
AFOLU	–	Agriculture, Forestry, and Land Use
BCCP	–	Biodiversity Corridor Conservation Project
CBD	–	Convention on Biological Diversity
CCBS	–	Climate, Community and Biodiversity Standards
CDM	–	clean development mechanism
CIF	–	Climate Investment Fund
ClIPAD	–	Climate Protection through Avoided Deforestation Project
CFA	–	Conservation Forest Area (also NPA)
DAFO	–	District Agricultural & Forestry Office
DFPO	–	District Forest Protection Office
DFRM	–	Department of Forest Resource Management
DGM	–	Dedicated Grant Mechanism
DoF	–	Department of Forestry (Lao PDR)
DoFI	–	Department of Forest Inspection (Lao PDR)
EGDPs	–	ethnic group development plans
ESMF	–	environmental and social management framework
FCPF	–	Forest Carbon Partnership Facility
FIP	–	Forest Investment Program
FIPD	–	Forest Inventory and Planning Division
FMA	–	forest management area
FMU	–	Forest Management Unit
FRDF	–	Forest Resource Development Fund
FS2020	–	Forestry Strategy to 2020
FSC	–	Forest Stewardship Council
FSCAP	–	Forestry Sector Capacity Development Project
FOMACOP	–	Forest Management and Conservation Project
FPP	–	Forest Preservation Project
GAP	–	gender action plan
GHG	–	greenhouse gases
GIS	–	Geographic Information System
GIZ	–	Deutsche Gesellschaft für Internationale Zusammenarbeit
GOL	–	Government of Lao PDR
Ha	–	hectare
HCVF	–	high conservation value forests
IPCC	–	Intergovernmental Panel on Climate Change
IPLCs	–	indigenous people and local communities
IUCN	–	International Union for Conservation of Nature
JICA	–	Japanese International Cooperation Agency
KBA	–	key biodiversity areas
KfW	–	Kreditanstalt für Wiederaufbau
Lao PDR	–	Lao People's Democratic Republic
LEAF	–	Lowering Emissions in Asia's Forests (USAID)
LUFC	–	land-use and forest change
LULUCF	–	land-use, land-use change, and forestry
MAF	–	Ministry of Agriculture and Forestry
MPI	–	Ministry of Planning and Investment
MRV	–	Monitoring, Reporting, and Verification

MDBs	–	Multilateral Development Banks
MONRE	–	Ministry of Natural Resources and Environment
NBSAP	–	National Biodiversity Strategy and Action Plan
NEC	–	National Environmental Committee
NFI	–	national forest inventory
NLMA	–	National Land Management Authority
NPA	–	National Protected Area (CSA and NBCA)
NTFP	–	non-timber forest product
PA	–	protected area
PAM	–	project administration manual
PAREDD	–	Participatory Land and Forest Management Project for Reducing Deforestation and Degradation
PES	–	payment for environmental services
PFA	–	production forest area
PFO	–	Provincial Forestry Office
PFPO	–	Provincial Forest Protection Office
PFSES	–	Protecting Forests for Sustainable Ecosystem Services
PLUP	–	participatory land-use planning
PM	–	Prime Minister
PSFM	–	participatory sustainable forest management
PTA	–	protection forest area
REDD+	–	reducing emissions from deforestation and forest degradation
REL	–	reference emission level
RRP	–	Report and Recommendation of the President to the Board of Director (ADB)
SES	–	social and environmental standards
SESA	–	strategic environmental and social assessment
SNV	–	Netherlands Development Organization
SFA	–	state forest area
SNRMPEP	–	Sustainable Natural Resources Management and Productivity Enhancement Project
SUFORD	–	Sustainable Forestry and Rural Development Project
UNFCCC	–	United Nations Framework Convention on Climate Change
UN-REDD	–	United Nations REDD Programme
URDP	–	Uplands Rural Development Project
VCS	–	verified carbon standard
VF	–	village forestry (or village forest)
VFMA	–	village forest management area
VFO	–	village forestry organization
WB	–	World Bank
WPFA	–	watershed protection forest area
WREA	–	Watershed Resources and Environment Authority
WWF	–	Worldwide Fund for Nature

KEY TERMS

- Afforestation – The act of converting bare or open land that had been without forest vegetation for at least 50 years into a forest.
- Deforestation – The complete destruction of existing forests and their replacement by other types of land use
- Forest degradation – Biological, chemical and physical processes (logging, shifting cultivation, pasture, etc.) that result in the loss of the productive potential of forests an ecosystem with a minimum of 10 percent crown cover of forest trees/or bamboos
- Forests – Generally associated with wild flora, fauna, natural regeneration and natural soil conditions that is not subject to agricultural practices
- Natural forest – Forest vegetation that has been established or would have been established in an area without any influence of human activities
- Reforestation – The act of planting trees on bare or open land which was covered with forest growth within the last 50 years
- Sustainable management – A management system which maintains all the functions and benefits of forests and minimizes the adverse impacts of harvesting so as to ensure the availability of forest goods and services for the use of present and future generations.

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I. INTRODUCTION

A. About the Study

1. Overview

1. In 2007, Lao PDR joined the Forest Carbon Partnership Facility (FCPF) and was given grant funding to prepare a Readiness Preparation Proposal (R-PP) to establish how the country would prepare for participating in the reducing emissions from deforestation and forest degradation (REDD+) initiative, under the United Nations Framework Convention on Climate Change (UNFCCC). The R-PP was submitted at the end of 2010 and approved by FCPF in early 2011, and included a REDD+ strategy to provide the framework for implementing a range of REDD+ activities in the following five years. In 2010, Lao PDR was selected as a pilot country to participate in the Forest Investment Program (FIP), a target sub-program within the framework of Strategic Climate Fund (SCF) under Climate Investment Funds. During 2011 a FIP Investment Plan was prepared¹ which proposed that the FIP funds should be provided as additional financing to ongoing projects in order to benefit from the established implementation arrangements and so minimize transaction costs. Three ongoing projects were selected, of which the ADB funded Biodiversity Conservation Corridor (BCC) (Grant No. 0242-LAO)² was one.

2. Purpose of the Study

2. This technical feasibility study (FS) proposes an investment project to be funded by the Forest Investment Program (FIP) for Lao PDR, as additional financing of BCC Project – hereinafter referred to as FIP Additional Financing (AF). It aims to assess whether carbon credits from REDD+ could be used as a mechanism to provide an incentive to slow deforestation and forest loss, improve biodiversity conservation and connectivity and protect valuable watershed protection forest. This includes measures for:

- **Reducing emissions:** from reducing deforestation and forest degradation (REDD);
- **Avoiding or displacing emissions:** by improving forestry conservation activities to help avoid emissions (such as fire management); and
- **Offsetting emissions:** by enhancing carbon sequestration through afforestation, reforestation and forest restoration; introducing sustainable forest management (SFM) techniques; and improving livelihoods and land use systems; and promoting agroforestry on degraded land to reduce pressure to convert more forest.

3. The findings from the study form the basis for designing the proposed AF of the BCC (which is referred to as “*Protecting Forests for Sustainable Ecosystem Services Project*” in the Lao PDR FIP Investment Plan). It will complement BCC Project’s efforts to improve biodiversity conservation within the corridor and connectivity between National Protected Areas and other protection and production forest areas in the surrounding area. The central focus of the study is to design an approach that pilots innovative methods to prevent land degradation, increase carbon sequestration and enhance biodiversity in the BCC corridor – and at the same time

¹ Government of Lao Peoples Democratic Republic. 2011. Forest Investment Program Lao Investment Plan. Vientiane.

² ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grants to the Kingdom of Cambodia, Lao People’s Democratic Republic, and Socialist Republic of Viet Nam for the Greater Mekong Subregion Biodiversity Conservation Corridors Project*. Manila.

incorporates provision for financially viable mechanisms to remunerate local people and communities for providing and safeguarding ecosystem services such as watershed protection, carbon sequestration and biodiversity protection. Piloted methods that prove successful are expected to be extended throughout the BCC and other Protection Forests nationally in the future.

3. Methods

4. To achieve the above described objective a preliminary analysis of the forest sector was conducted with the aim of:

- (i) identifying potential project sites within the BCC corridor and adjacent watershed protection forest that could be suitable for the implementation of project activities aimed at: reducing emissions (REDD); avoiding emissions through improving forestry conservation activities; or removing emissions by enhancing carbon sequestration through afforestation, reforestation and forest restoration;
- (ii) analyzing the institutional arrangements, in terms of institutional capacities, capacity building needs, and opportunities to leverage on the lessons learnt from the BCC project and other climate change programs in Lao PDR; and
- (iii) evaluating the potential to modify or improve livelihoods and land use systems through the promotion of agro-forestry on degraded or community forest lands.

5. Criteria for AF site selection are based on what was considered feasible with the available funds and local human resources in the FIP Investment Plan, and were used in the site selection process. These criteria provided indicative targets to achieve a reasonable level of CO₂ emission reductions in relation to the magnitude of the funds invested, these being:

- (i) about 400 farmers currently practicing shifting cultivation, provided with alternative stable and acceptable means of livelihood that results in a decrease of about 400 ha of forest being cleared and converted over the life of the project (about 10% of population living in corridors);
- (ii) 50,000 ha of threatened high conservation forest to be protected from clearance and degradation through illegal logging; and
- (iii) 1,450 ha of degraded forest to be rehabilitated and restored through the involvement of local communities through participatory land-use planning (PLUP) in selected villages.

6. In this context, the analysis focused on "hot spots" for deforestation and forest degradation which were identified in consultation with provincial and district authorities, and confirmed through the use of remote sensing images, site visits and expert interviews. Particular attention was also given to identifying 'future threats' from road construction, hydropower projects and inward migration.

7. During the analysis, consideration was also given to ensuring that monitoring, reporting, and verification (MRV) requirements, such as ensuring leakage from the displacement of activities, are adequately addressed and measured, e.g. by monitoring leakage belts and a larger reference area, in line with verified carbon standard (VCS) requirements. The requirements necessary for a reference area can be up to 20 times the size of the project area, and this effectively meant that the sites recommended predominantly involved a cluster of villages that were located within watershed forest – and this precluded a number of villages that were located outside the watershed protection forest area.

II. ANALYSIS

A. Forest Sector Analysis

1. Overview

8. The two provinces of Sekong and Attapeu, within which the study area lies, contain about 1.7million ha of forest, of which 1.2 million has been designated as state forest, made up of 634,600 ha of Protection Forest and 205,400 ha of National Conservation Forest and 403,200 ha of Production Forest (as summarized in Table 1). However, not all of this area is forest covered. The remainder is made up of provincial and community forest, and unallocated forest or forest under concession for some other purpose.

Table 1. Forest Categories in the Study Area

Land-use	Attapeu	Sekong	Total
Province Area	1,032,000	766,500	1,798,500
Forest Cover	965,343	733,793	1,699,136
Conservation Forest Area	203,600	1,800	205,400
Protection Forest Area	371,400	263,200	634,600
Production Forest Area	209,300	193,900	403,200
Other Areas	247,700	307,600	555,300

Note: It should be noted that the amount of protection forest is about to change, with the Lao government issuing new decrees establishing 41 new protection forests, including some in the three BCC provinces.

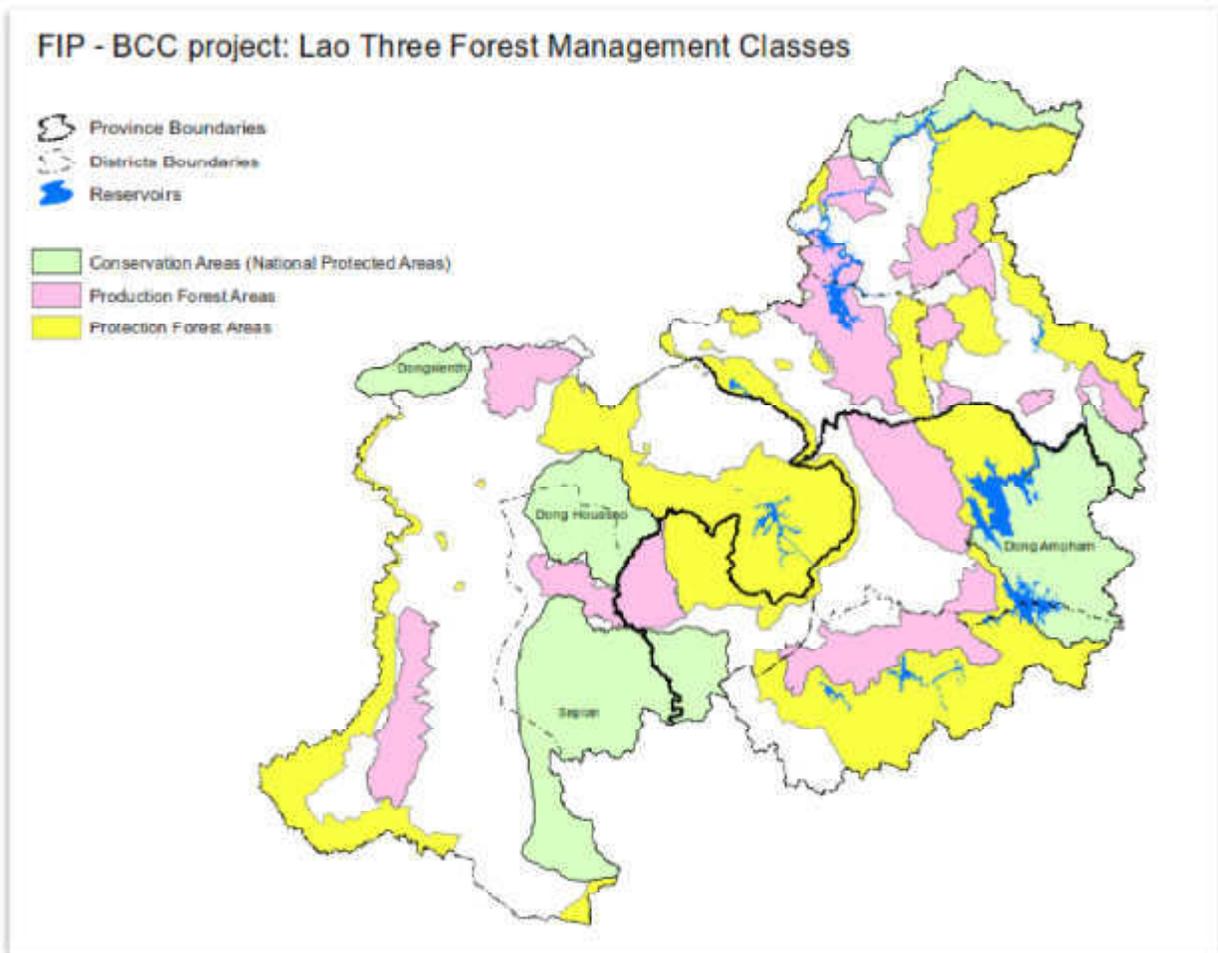
2. Policy Context

9. In Lao PDR, all three forest management classes contribute towards sustainable socio-economic development, biodiversity conservation and the maintenance of ecosystem services. Conservation Forest Areas (CFA) formerly known as National Biodiversity Conservation Areas (NBCAs), or National Protected Areas (NPAs) primarily protect biodiversity, together with the ecosystem services provided by the natural ecosystems and watersheds preserved. These areas are managed in a way that supports the sustainable socio-economic development of the people that have customary rights to these areas, to protect historical and cultural relics and landscapes; and to provide nature based tourism opportunities.

10. Protection Forests are established to directly protect the important ecosystem services, especially water sources, river banks and forest resources that directly underpin socio-economic development and the livelihoods of local people. The proposed AF sites predominantly cover Protection Forest, although the Kum ban territory has been used as the jurisdiction for planning and monitoring purposes and thus some of the area is outside the designated Protection Forest. For example, the villages of Vangkhene and Vongsomphou in Somboune Kum Ban where the villages are located outside the Protection Forest but whose village boundaries extend into watershed Protection Forest. Figure 1 highlights the distribution of the three forest management classes in the study area.

11. The territory of Kum Ban Tateau in Dakcheung District was found during the study to be located primarily on very steep sloping land within the catchment of the Xekeman River, and thus meets the criteria for designation as Protection Forest. Land management within the Kum Ban has a direct and major impact on the river, which has four major hydro-power dams under construction or planned. It is therefore proposed that this Kum Ban should be included within the AF component and that much of its territory should be considered for designation as Protection Forest. The Department of Forest Resource Management (DFRM) has included these areas in its submission of new protected areas for consideration by the National Assembly. This is discussed in more detail in Section B.2.4 (Analysis of Forest Change in Dakcheung District) below.

Figure 1. Distribution of Forest Management Classes in the Study Area



12. Once the forest land has been designated to one of the defined forest management classes, the government assigns the responsibility for forest management to the provincial or district authorities. District and village authorities then may be given the responsibility for managing forest area outside the designated forest. Forest areas put under village responsibility are then classified into three types of forests, these being:

- (i) **Protection forests:** including river water source forest areas, river bank forests, road forests

- (ii) **Conservation forest:** including areas of spiritual importance, e.g. for prayer or burial, and
- (iii) **Village production forest:** for agricultural and forest production purposes.

13. It is uncertain if these categories can be formally applied within village areas inside Protection Forest. However, the current approach to allocating land use within the village area is through the Land Use Planning process, and this can include the provision of 'community forest areas' and the allocation of lands to households for agricultural and forest based swidden production. However the Prime Minister's Instruction 564 for the National Land Management Authority provides the legal framework for actual titling of community-based or group-based joint ownership of land and forest land.

14. It is recognized that at present a new Land Policy has been drafted and is pending Cabinet approval. The former National Land Management Authority (NLMA) is now a department under the Ministry of Natural Resources and Environment (MONRE). Customary communal tenure such as among Brao communities in Phouvong district of Attapeu or newly institutionalized communal tenure in the Nakai Plateau under the Nam Theun 2 Hydroelectric Power (NT2) Project may provide guidance for the AF project in this respect. In Nakai Nam Theun 2 Watershed Protection Forest for example, land use planning for agricultural and forestry use occurs within an established area of 'controlled use', and also incorporates 'restoration forest', which is forest, which has been identified as a priority for watershed protection and enhancement purposes.

15. Restoration forest can be assigned within areas already designated as Production Forest, Protected Area or Protection Forest, to improve the quality of forest, protect watersheds, prevent soil erosion, prevent or mitigate the effects of climate change and natural disaster, or for climate mitigation purposes – and this is an important provision for the purposes of the FIP program.

16. Further to this, the stated aim of the Lao Climate Change Mitigation Strategy is "to secure a future where the Lao PDR is capable of mitigating and adapting to changing climatic conditions in a way that promotes sustainable economic development, reduces poverty, protects public health and safety, enhances the quality of natural environment, and advances the quality of life for all Lao people."

17. The key 'strategic priorities' identified in the Strategy include a range of mitigation measures centered around: agriculture and food security; water resources; and forestry and land use change measures (such as reducing "slash and burn" agriculture; reducing forest fires; integrating forest management with community forestry, effective land use planning and pursuing carbon market opportunities) with which the aims and objectives of this project are entirely consistent.

18. In addition to this, the Strategy supports improved public awareness and understanding of various stakeholders about climate change, vulnerabilities and impacts, GHG emission sources and their relative contributions, and of how climate change will impact the country's economy, in order to increase stakeholder willingness to take actions – and these aspects are discussed further in the Institutional Analysis.

3. Data and Methods

a. Land Cover Classification

19. The analysis of forest cover and forest change was performed for the Kaleum and Dakcheung districts in the Sekong province, and for the area including the Phouvong district and the portion of the BCC corridor in the Sanamxai district in the Attapeu province. The land cover of the study area was mapped for the reference year 2010 using Landsat satellite images and supporting data (e.g., Google Earth, aerial photos). The land cover classes were defined on the basis of their spectral separability in the remote sensing data and according to the field knowledge gained during the field survey. The land cover classes were also determined with the objective to increase their homogeneity regarding their carbon stock density. The land cover classes identified in the study area are defined as follows:

- (i) **Forest:** Closed evergreen forest with emergent, with canopy cover > 70%. This class identifies mature dense forests with presence of large trees and high biomass density;
- (ii) **Degraded Forest and Regrowth:** Closed to open evergreen forest, or mixture of grass/shrub vegetation and young trees in the process of forest regeneration after disturbance. This class includes forests with closed and homogeneous canopy cover with medium/small tree crowns, as well as open forests and forest regrowth areas with presence or dominance of non-tree vegetation (palms, shrubs, bamboo, herbaceous), with low biomass density;
- (iii) **Dry Dipterocarp:** Closed to open Dry Dipterocarp forest with homogeneous canopy structure with medium/small tree crowns, including mixture of trees and non-tree vegetation (palms, shrubs, bamboo), with medium-low biomass density;
- (iv) **Cropland:** land under cultivation mostly with annual crops, including paddy rice fields;
- (v) **Other Land:** bare soil and rock, with little or no vegetation; and
- (vi) **Water:** permanent water bodies (rivers and lakes).

20. In accordance with the Lao PDR national definition, in this study the term forest refers to vegetation with 20% minimum tree crown cover, while the sub-class regrowth includes areas that may (temporarily) have lower tree canopy cover. Compared to the forest classes used by the Lao PDR 2002 National Land Use map, the present classification has the advantage that forest types that can be detected by remote sensing images and that are directly related to the forest carbon stock density, and therefore is targeted to a better estimation of the carbon emissions due to forest-related changes.

21. As indicated in the legend above, the forest land was stratified in three forest classes: (evergreen dense) Forest, (evergreen) Degraded Forest and (forest) Regrowth, and Dry Dipterocarp forest. The two vegetation types (evergreen and Dry Dipterocarp forest) were distinguished in the satellite data on the basis of their different phenology (Dry Dipterocarp forest is deciduous) and leaf type (Dry Dipterocarp forest presents lower reflectance than evergreen forest in the green wavelength). The evergreen forest was differentiated between dense and degraded/regrowth forest on the basis of the differences in canopy cover (closed to open) or canopy structure (heterogeneous to homogeneous) existing between these two classes. Differences in canopy cover were identified in the satellite data because the presence of gaps in the forest canopy (in the case of open forests) causes the spectral signal of the vegetation to be mixed with the soil reflectance, increasing the brightness of the surface reflectance compared to that of closed forests. Similarly, differences in the canopy structure

were detected in the images because multi-layered forest canopies with large tree crowns (typical of dense mature forests) increase the amount of shadows in the canopy reflectance (i.e. darker signal) and result in a rougher texture of the satellite data compared to forests with uniform or smaller canopies, which present brighter signal and finer texture (typical of degraded or regrowth forests). However, the forest types Degraded Forest and Forest Regrowth were grouped in the same land cover class because they could not be reliably separated using Landsat images since the large intra-class spectral variability and the narrow inter-class spectral difference existing between these two classes at the resolution of the satellite images employed for the analysis (Landsat, 30 m) are confused by illumination and atmospheric effects.

22. The non-forest area was classified according to the Intergovernmental Panel on Climate Change (IPCC) classes for national greenhouse gas inventories as defined by the IPCC 2006 Agriculture, Forestry, and Land Use (AFOLU) Guidelines, namely Cropland, Other Land and Water (Wetlands).

b. Land Cover Change Categories

23. The changes occurred in the study area for the historical reference period 2000 – 2010 were detected using Landsat satellite images and supporting data (e.g., Google Earth, aerial photos). The focus of the analysis was on forest-related changes, and therefore the following three change categories were mapped:

- (i) Conversion of Forest to Cropland;
- (ii) Conversion of Degraded Forest/Regrowth to Cropland;
- (iii) Conversion of Cropland to Degraded Forest/Regrowth.

24. In terms of activities, the first change category corresponds to deforestation due to agriculture expansion on forest land while the second and third categories are often related to slash and burn cycles (i.e., shifting cultivation). Among all possible combinations that could be obtained by combining the six land cover classes, these three change categories were selected because they can be reliably identified in the remote sensing data, occur on substantial areas of the study region and are expected to represent the main sources of carbon emissions (or carbon removal). Forest degradation (conversion from dense forest to degraded forest), is a secondary source of emissions and was not included in the present analysis because it is characterized by small changes in the canopy properties that could not be reliably mapped with the existing data over the whole study area.

c. Remote Sensing Data

25. The land cover and forest change maps were obtained by classification of Landsat satellite images. The Landsat data for the dates circa-2000 and circa-2010 were freely obtained from the United States Geological Survey (USGS) website (<http://glovis.usgs.gov/>). Since Landsat ETM+ data acquired after May 2003 are affected by the Scan Line Corrector (SLC) failure, the gap-filled (i.e. corrected) data provided in the USGS Decadal collection were used because they were optimally corrected and were suitable for the type of analysis required in the present study.

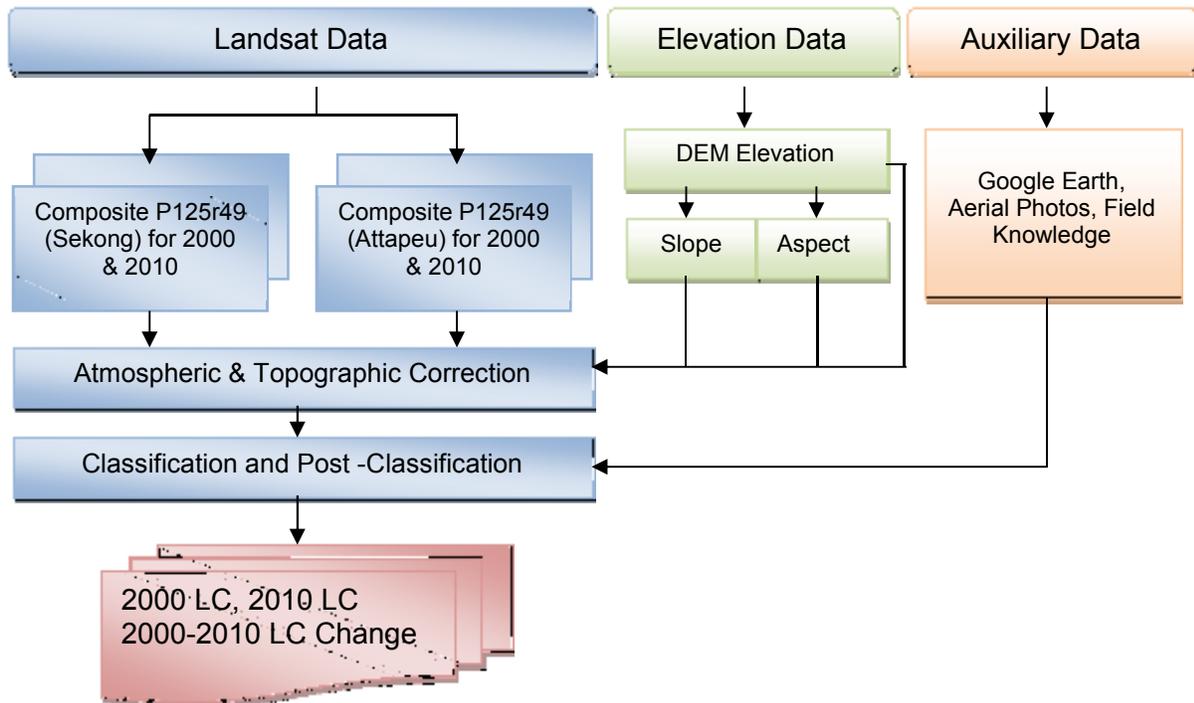
26. The Landsat data required further pre-processing before their analysis, which was performed according to the following steps. First, Landsat Band 6 and Band 8 (panchromatic) were dropped since thermal parameters and pan-sharpening were not necessary. Second, the data was corrected for atmospheric and terrain artifacts using Atmospheric/Topographic

Correction for Satellite Imagery version 3 for mountainous terrain (ATCOR3) (Richter 2009). This sophisticated software models the atmospheric conditions and employs a digital elevation model to eliminate atmospheric and illumination effects. The ASTER 30 m Digital Elevation Model (GDEM V2) provided with the Landsat data by USGS was used to derive the elevation, slope and aspect of the study area. Several parameters were tested in order to tune the model and retrieve the optimal surface reflectance values of the area of interest. Thirdly, the corrected images were clipped for the area of interest and converted to suitable format for the image processing phase.

27. The pre-processed Landsat images were then classified to obtain the land cover and forest change maps. The satellite data were classified using the Random Forest algorithm (Breiman 2001), a non-parametric statistical method largely used for analysis of remote sensing data because of its ability to handle large datasets and its independency from the statistical properties of the input data. The classification was performed in supervised mode, meaning that the classification algorithm was trained using training polygons visually identified and digitized on-the-screen. Such training areas were delineated on the basis of the Landsat images with the support of higher-resolution data, as Google Earth and aerial photos (where available) and field information acquired during the field survey. In order to assure a detailed and accurate classification of the remote sensing data, about 200 training areas were visually identified and digitized for each Landsat image, for a total of about 800 training polygons over the all study area (four images were employed for the present analysis). The 2010 land cover maps were obtained by classification of the circa-2010 Landsat images while the forest change maps were obtained by classification of both the 2000 and 2010 Landsat images “stacked” together. In this way, the change information was obtained by direct comparison of the change in surface reflectance of the satellite images (after their correction), which provides more accurate results than performing two separate classification and comparing the outputs since such procedure would multiply the errors present in each map.

28. Then, the maps were post-processed by applying a 3-by-3 majority filter in order to reduce the impact of the noise inherently present in the satellite images. The land cover map for the year 2000 was obtained by combining the 2010 map with the 2000-2010 change maps. Lastly, the maps were harmonized in order to depict land cover classes and forest changes consistently over the same areas. A flowchart of the processing of the remote sensing images and auxiliary data is represented Figure 2.

Figure 2. Flowchart of Land Cover and Change Map Processing



B. Forest Analysis

1. Project Locations

29. Tables 2 and 3 below provide a list of the villages within the selected Kum Bans, indicating the 7 that are currently BCC villages. The other 21 are new villages. The tables also summarize the observed change in forest cover during the decade 2000-2010.

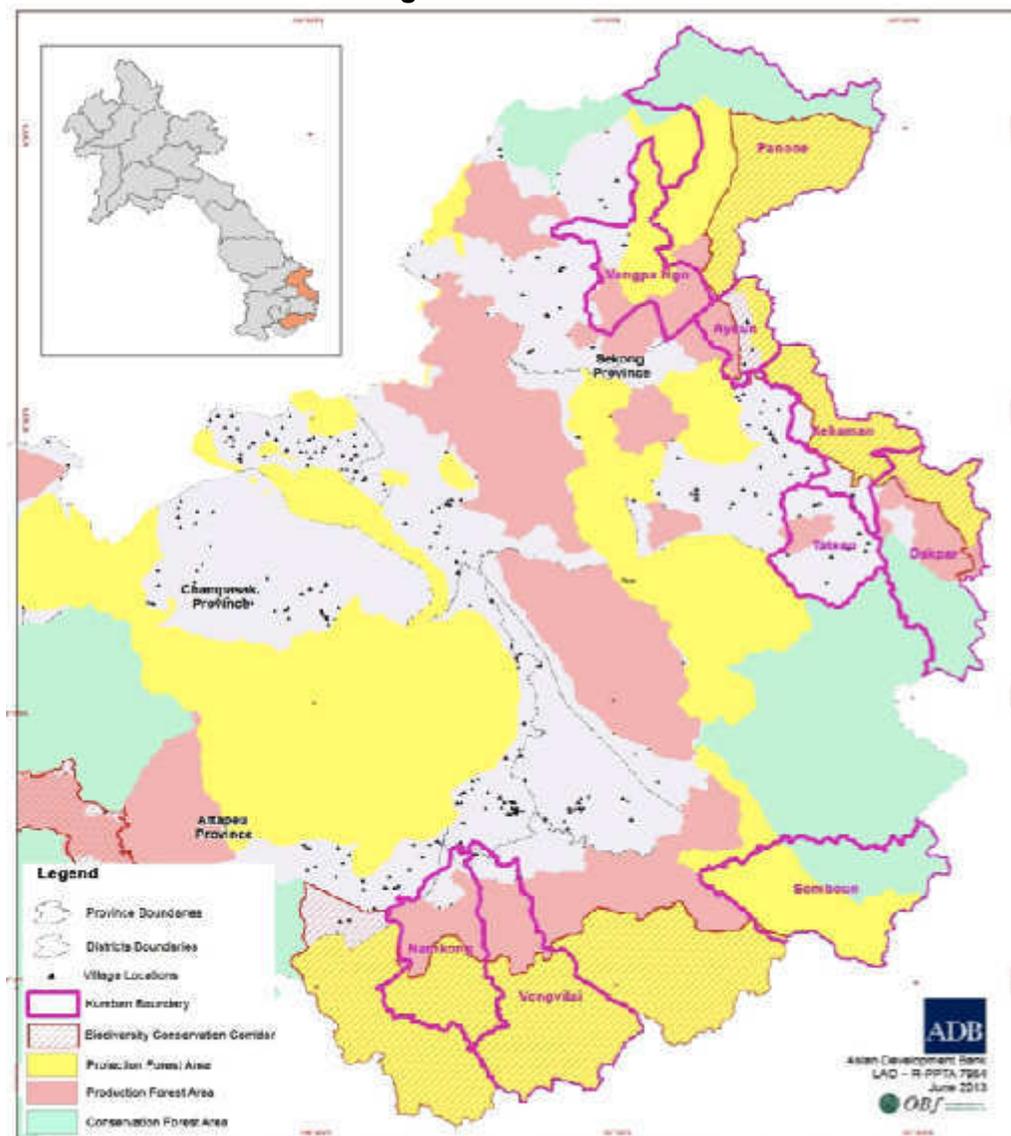
Table 2. Dakpar-Tateau-Xekeman Kum Ban Area (Sekong Province)

DISTRICT	CLUSTER (Kum Ban)	VILLAGE	Number of families	Total population	BCC Village	Forest to cropland	Degr. For. To cropland	Cropland to regrowth
DAKCHEUNG (Upper Xekeman Catchment)	DAKPAR	Bronggnai	27	238		697	846	47
		Brongnoi+ Bron	65	401				
		Dakpneu	25	219				
		Dak moung	31	191				
		Dakpar km 20	40	274				
		Dakpar+ Daklan	33	266	Yes			
	TATEAU	Dak Trang	25	152		149	503	277
		Dak Mi	33	169				
		Dak Bu	109	352				
		Dak Le	27	153	Yes			
		Dak Tring	18	113				
		Dak Mong Yai+N	28	147				
	XEKAMAN	Dak Ta Ouk Noy	41	200	Yes	547	874	
		Dak Muan	54	347				
		Dak Dome	30	263	Yes			
		Dak Mun	34	174	Yes			
		Dak Ta Ouk Yai	36	161	Yes			
		Dak Yrung	37	194				
		Dak Diang	23	217				
Mangha	75	389				62		
Total			791	4,620	6	1,393	2,223	386

Table 3. Vongvilai-Namkong Kum Bans (Attapeu Province)

DISTRICT	CLUSTER (Kum Ban)	VILLAGE	Number of families	Total population	BCC Village	Forest to cropland	Degr. For. To cropland	Cropland to regrowth	
PHOUVONG (Upper Namkong Catchment)	VONGVILAI	Vongsomphou	261	1,439		288	192	227	
		Vangyang	200	1,128					
		Phouhome	171	871					
		Phouxay	58	288					
		Lamong	89	370	Yes				
	NAMKONG	Namkong	139	139		203	381	384	
		Vonglakhone	86	435					
		Viangxai	200	1,132					
	Total			1,204	5,802	1	491	573	611

Figure 3. Map of Sekong, Attapeu and Champasak Provinces, Showing Location of Kum Bans Investigated as Potential Locations for FIP Investments



30. The map in Figure 3 above shows the distribution of designated forests within the three southern provinces, and the boundaries of the Kum Bans that were assessed for possible inclusion in the AF project.

2. Forest Cover Kaleum and Dakcheung Districts, Sekong Province

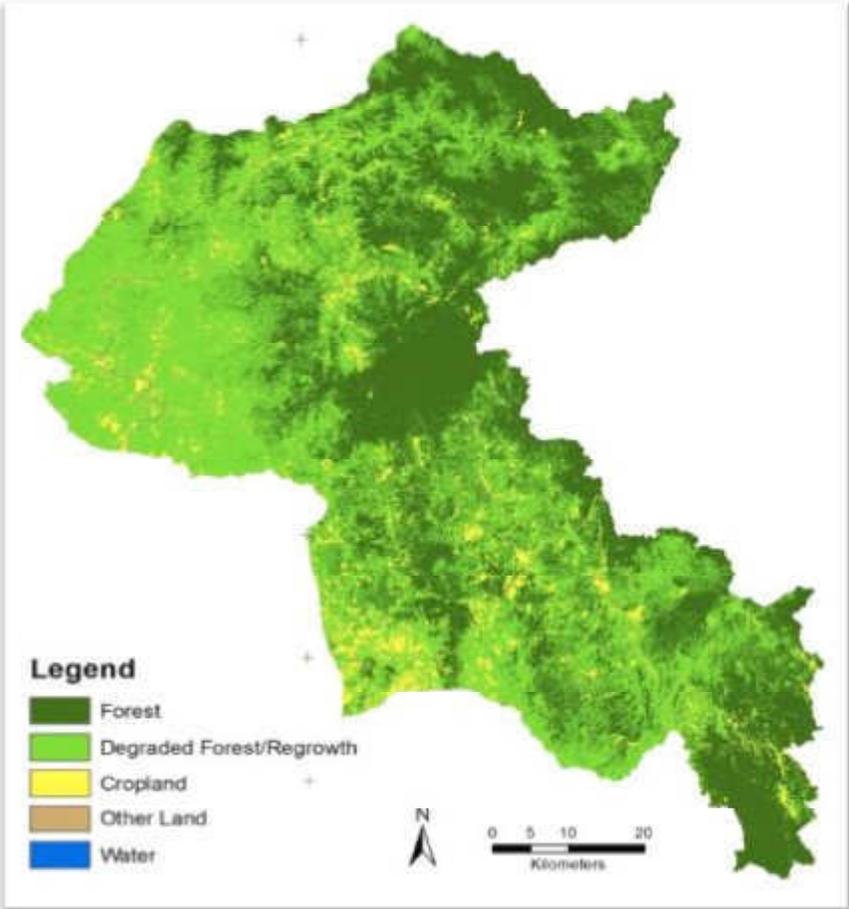
31. During the initial stages of the study both Kaleum and Dakcheung Districts were investigated, and in both Districts, the Kum Bans that lay in or adjacent to the Biodiversity Conservation Corridor were found to generally meet the criteria for selection for the FIP investments referred to above. However, the situation within Dakcheung District with regard to forest disturbance and loss of forest cover, is more serious and more advanced than in Kaleum. This is mainly due to the longer time period during which access from both the Lao PDR and the Viet Nam side of the international border has been possible more or less year round with motor vehicles. Thus, the process of deforestation and forest degradation has been going on longer

and is at a more advanced stage in Dakcheung, compared with Kaleum. It was considered therefore, that lessons learnt from investment in Dakcheung could be applied in Kaleum in due course. This was discussed and agreed at the Mid-term Workshop.

32. The Land Cover map for the reference year 2010 for Kaleum district shows that most of the dense forest is located along the eastern part of the district, and the analysis of the Digital Elevation Model indicates that the vast majority of these forests are located in areas with higher elevation. The large intact block of forest present in the south-eastern part of Kaleum district extends into the north-western part of Dakcheung district, in an area with elevation reaching 1,900 meters. Most of the degraded forests and the cropland areas are located in the lower and more populated western part of the district and in the valley.

33. The data presented below on the areas where forest cover has changed represent the difference in the area of the three forest cover categories between the start and the end of the ten year period 2000 to 2010. Thus areas that were regrowth at the start of the period and were cleared and then regrew during the period would not be detected as a forest cover change. Therefore the estimates of emissions discussed later are likely to be a significant underestimate.

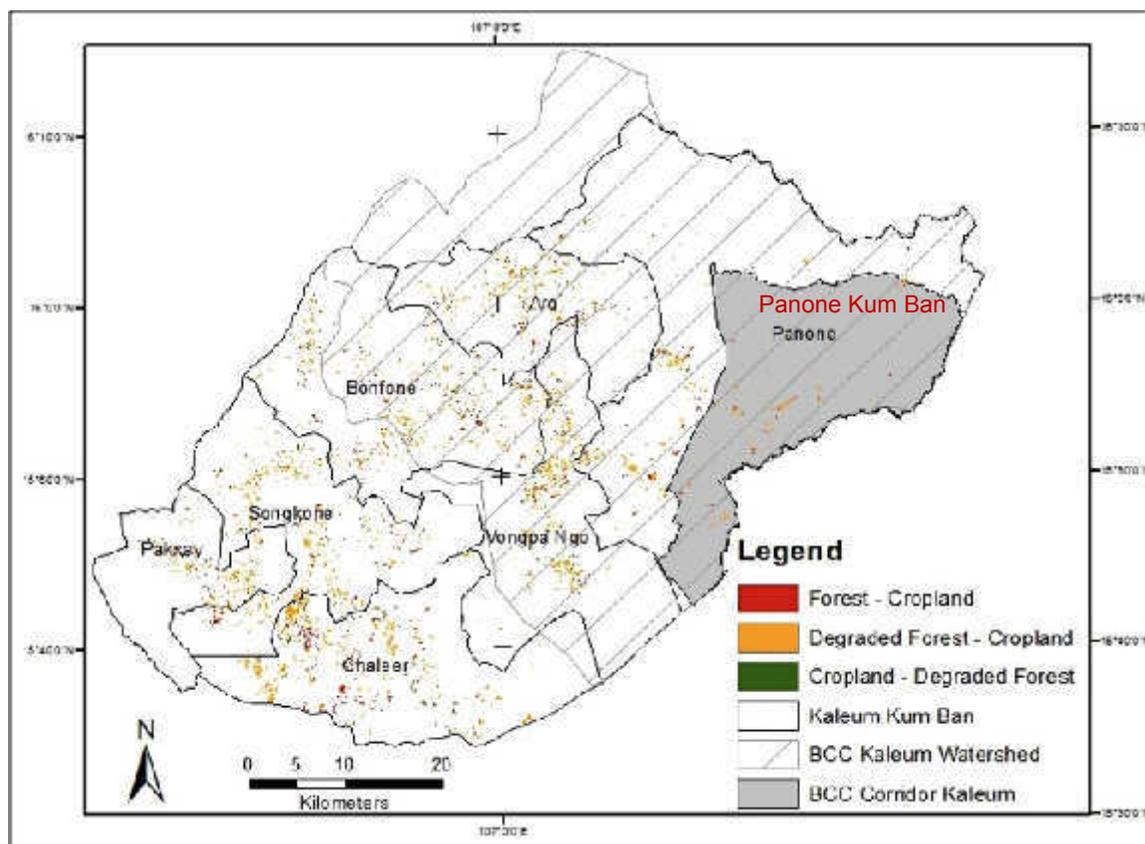
Figure 4. 2010 Land Cover Map for Kaleum and Dakcheung Districts



3. Analysis of Forest Change in Kaleum District (2000-2010)

34. Among clusters 3-6 mostly inside the Watershed, Clusters 3-4 have the highest area (ha) and rate (%) of forest disturbance. Cluster 4 (Panone Kum Ban) was proposed by local authorities for consideration for FIP investment.

Figure 5. Forest Cover Change and Location of Village Clusters or Kum Bans in Kaleum District



Change Categories

Deforestation: from Forest to Cropland

Slash&Burn: from Forest Regrowth to Cropland

Regrowth: from Cropland to Regrowth

Figure 6. Forest Change (Ha) in Kaleum District (2000-2010)

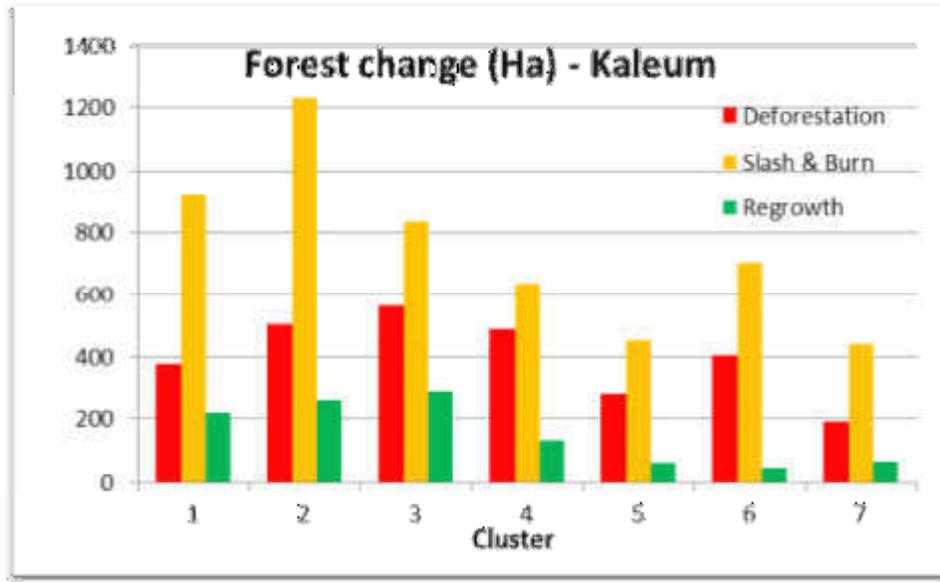
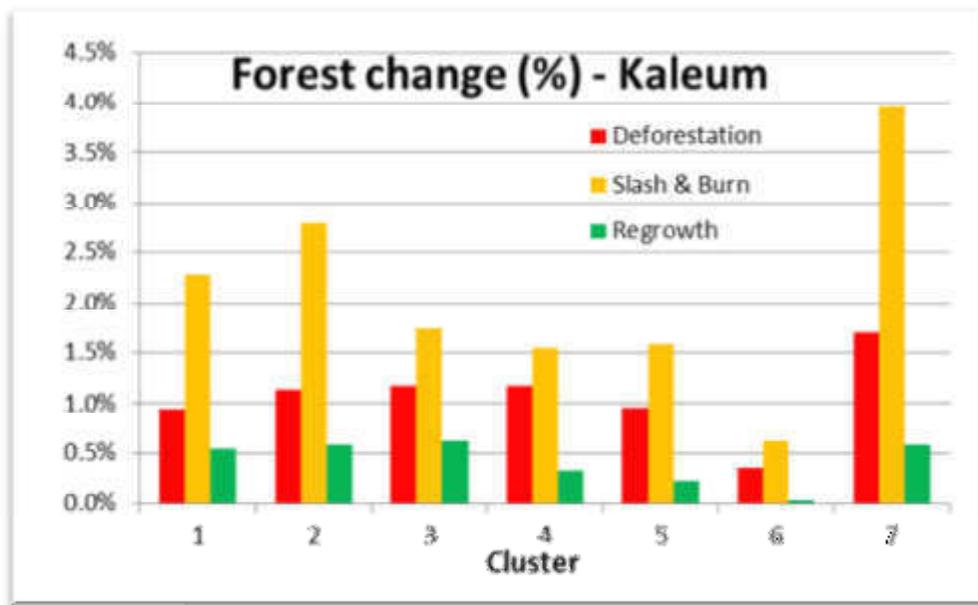


Figure 7. Percentage Forest Change in Kaleum District (2000-2010)



35. It should be noted that Kum Bans 1, 2 and 7 with the highest percentage forest change are in the lowland part of the District and are well outside the corridor and Kum Ban 4, which has been proposed by the District has the highest rate of change among the upland Kum Bans.

4. Analysis of Forest Change in Dakcheung District (2000-2010)

36. The Land Cover map for the reference year 2010 for Dakcheung District shows that most of the dense forest is located along the eastern and southern part of the district along the boundary with Vietnam and in correspondence of mountainous areas with higher elevation. Cropland occurs with large patches, mostly located in the western and central part of the district (Figure 8).

37. The forest changes occurred between the year 2000 and 2010 were quite scattered throughout the district but with much lower intensity in the eastern part, along the BCC corridor (Figure 9). Most changes were likely related to the expansion of agriculture on forest land and to cycles of shifting cultivations. The deforestation strip located in Xekeman Kum Ban within the BCC corridor was due to the construction of a new road leading to the Viet Nam border that, together with the new settlements developed along the road, caused the loss of a significant area of forest.

38. The results of the change analysis are presented by village cluster as total area (ha) and percentage area (%) for the 2000-2010 period (Figure 10 and Figure 11). The Kum Bans Namdare and Xieng Leuang present large change areas are outside the area covered by the BCC corridor. For the Kum Bans mostly inside the Watershed, Dakpar and Xekeman Kum Bans present highest forest disturbance areas (ha) and rates (%). The local authorities proposed Dakpar Kum Ban as most suitable in terms of accessibility and local support. In addition, as shown by the change analysis, forests in this Kum Ban are under pressure due to new road to Viet Nam.

Figure 8. 2010 Land Cover Map for Dakcheung

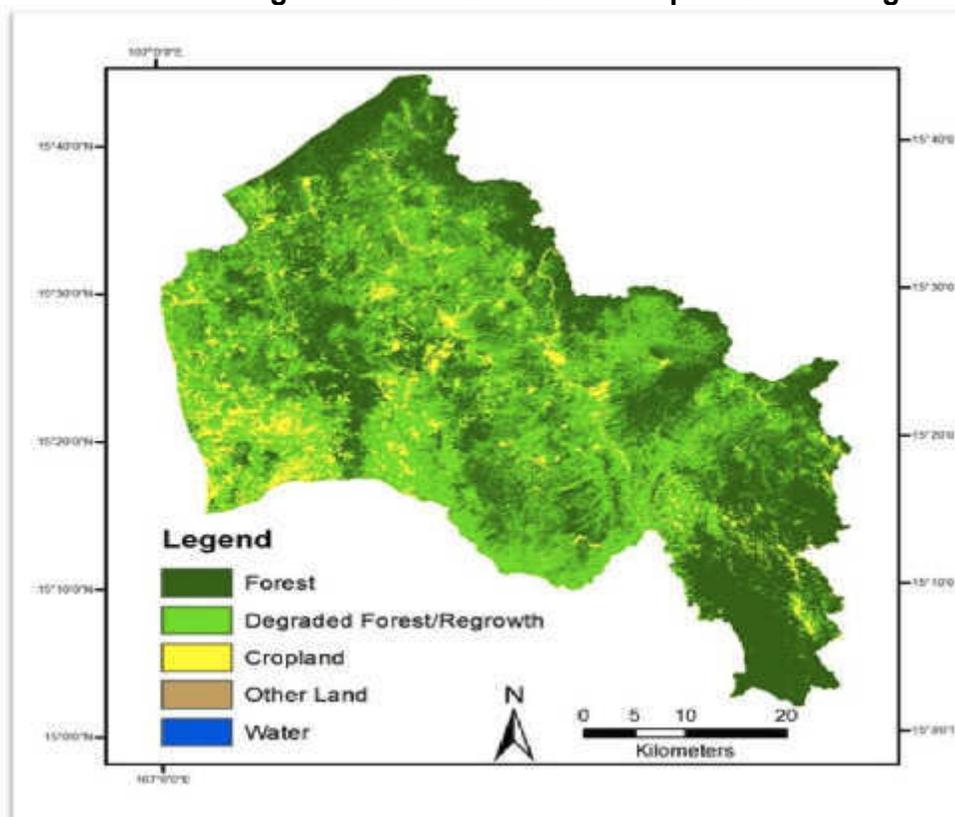


Figure 9. Location of Village Clusters (Kum Bans) and Forest Cover Change in Dakcheung District

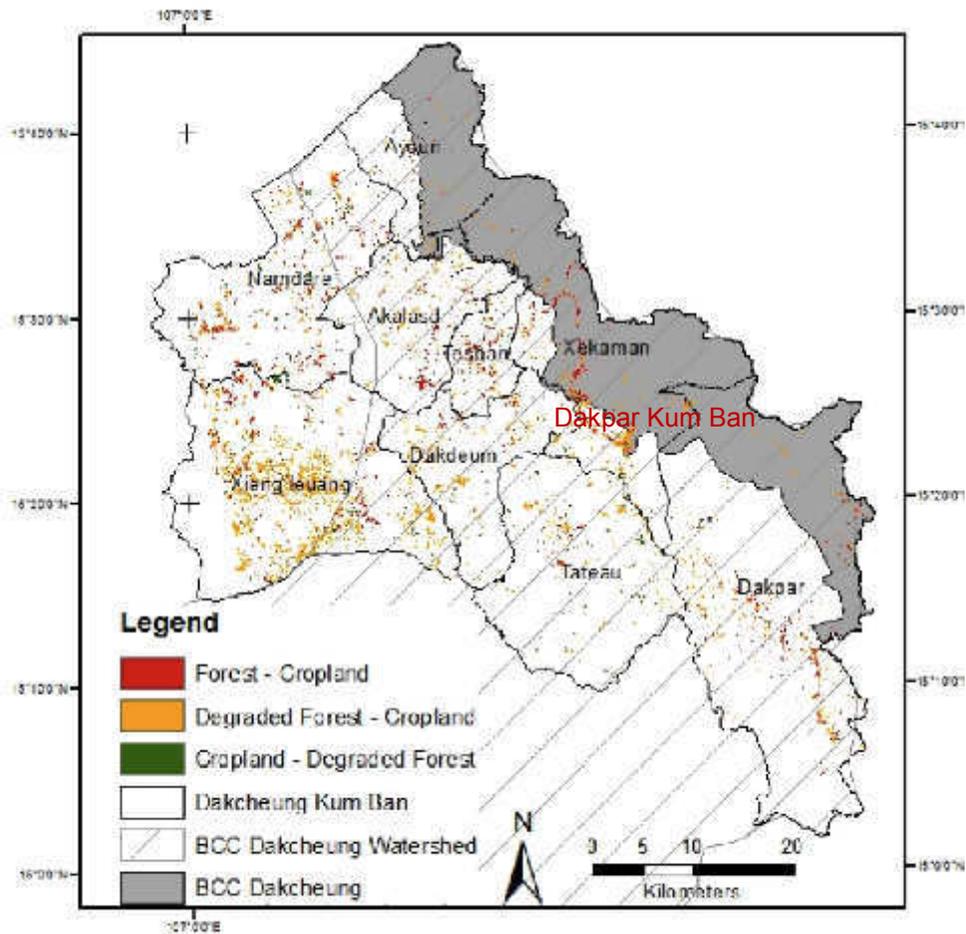


Figure 10. Forest Change (Ha) in Dakcheung District (2000-2010)

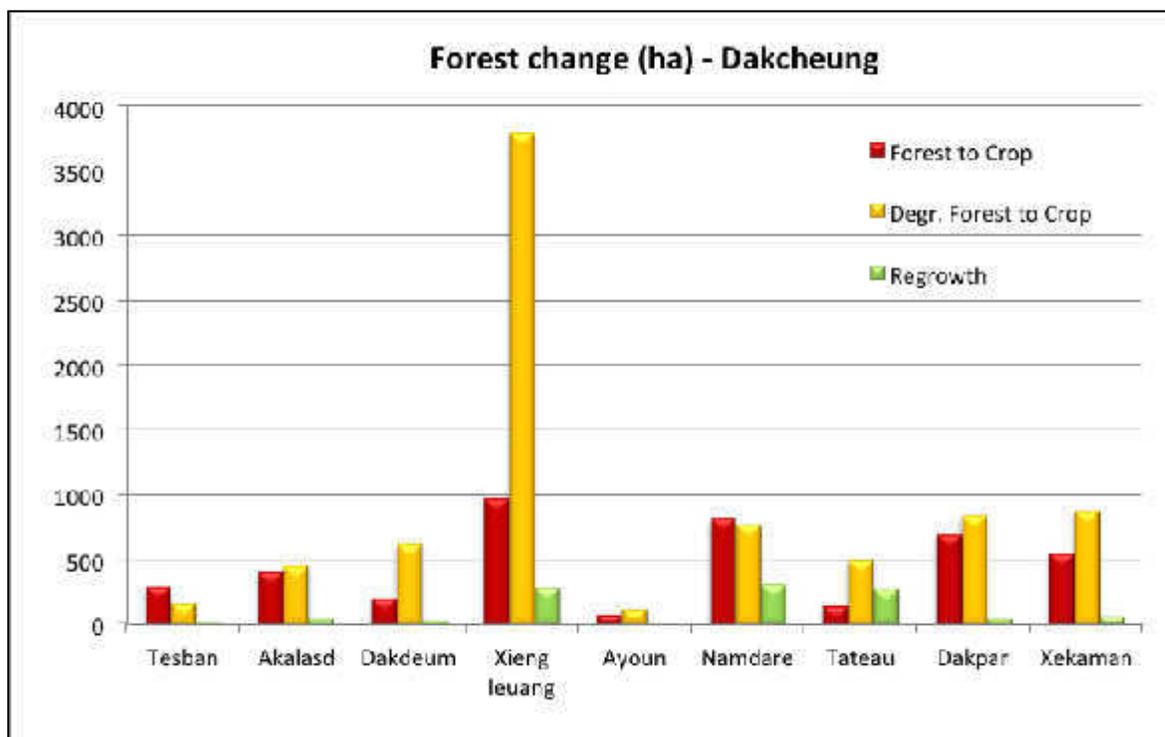
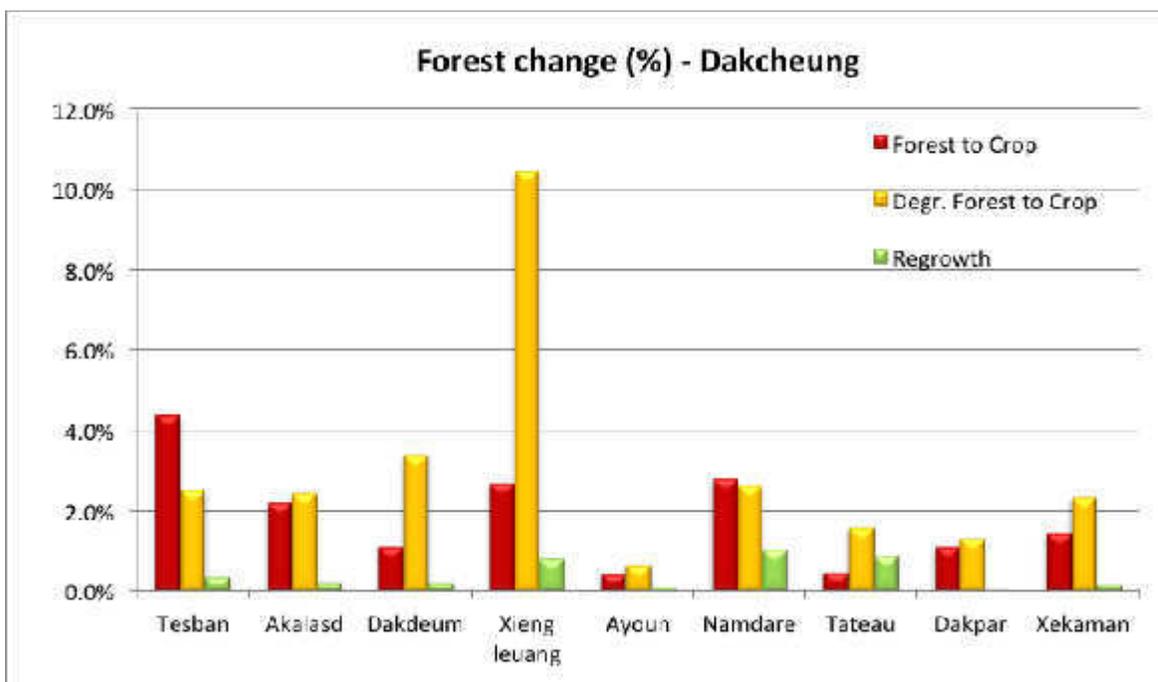


Figure 11. Percentage Forest Change in Dakcheung District (2000-2010)



5. Analysis of Landform in Dakcheung

39. The current biodiversity conservation corridor is based on the area designated as Provincial Protection Forest, and is primarily determined by the requirement that a zone 5 km wide along international borders are to be designated as Protection Forest. However, as Figure 8 above shows, deforestation is substantially higher in Kum Ban 6 (Tateau), which does not currently form part of the Corridor, compared with Kum Ban 4 (Ayoun), which is mainly within the current Corridor. During field visits to Kum Ban Tateau it was noted that much of the land within the Kum Ban territory is very steeply sloping, and has extensive areas of shifting cultivation. The Xekeman River passes through the Kum Ban and the management of the catchment is extremely important for several hydropower projects under construction or planned on the river.

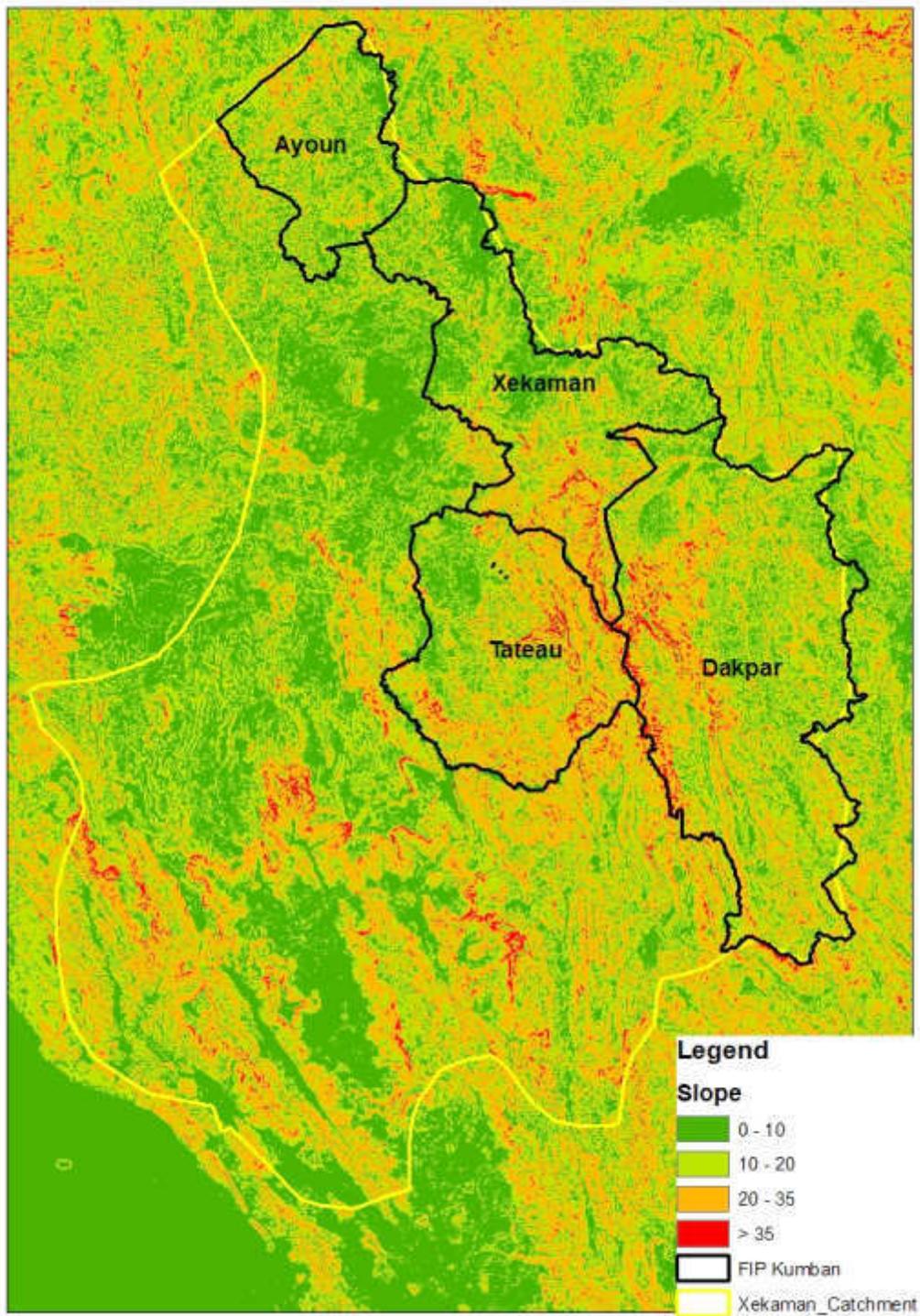
40. Therefore a special analysis of the landform within Dakcheung District was undertaken to assess the relative importance of land sloping more than 20% in Ayoun and Tateau Kum Bans. The resulting map (Figure 12below) and the data on the proportion of land on different slope classes given in Table 4shows that Kum Ban Ayoun has much less steep land than Tateau and that the steeply sloping land is concentrated in the south-easterly part of the District where the land falls away steeply from the high ground that forms an upland plateau in the north-westerly part of the District. More than 40% of the land area of Tateau Kum Ban slopes at more than 20%; the inclination above which the risk of erosion increases sharply.

41. According to the criteria for the designation of Protection Forest, the current Protection Forest, which provides the boundary for the BCC, should be extended to cover the steeply sloping land within Tateau Kum Ban. The border between Xekeman and Tateau Kum Bans is the Xekeman River, and the map shows clearly that it is in a very deep valley, subject to erosion, and both sides of the valley should have forest cover for protection. The environmental benefits from maintaining and restoring forest cover to improve soil and water conservation will be very large in comparison with similar measures in Ayoun. It has therefore been recommended to the Government of Lao PDR (GOL) that the Protection Forest should be extended to cover much of Tateau Kum Ban and that the FIP investments should be made in the three Kum Bans that provide the greatest protection for the Xekeman River; namely Dakpar, Xekeman and Tateau.

Table 4. Distribution of land area by slope classes in four Kum Bans in Dakcheung District

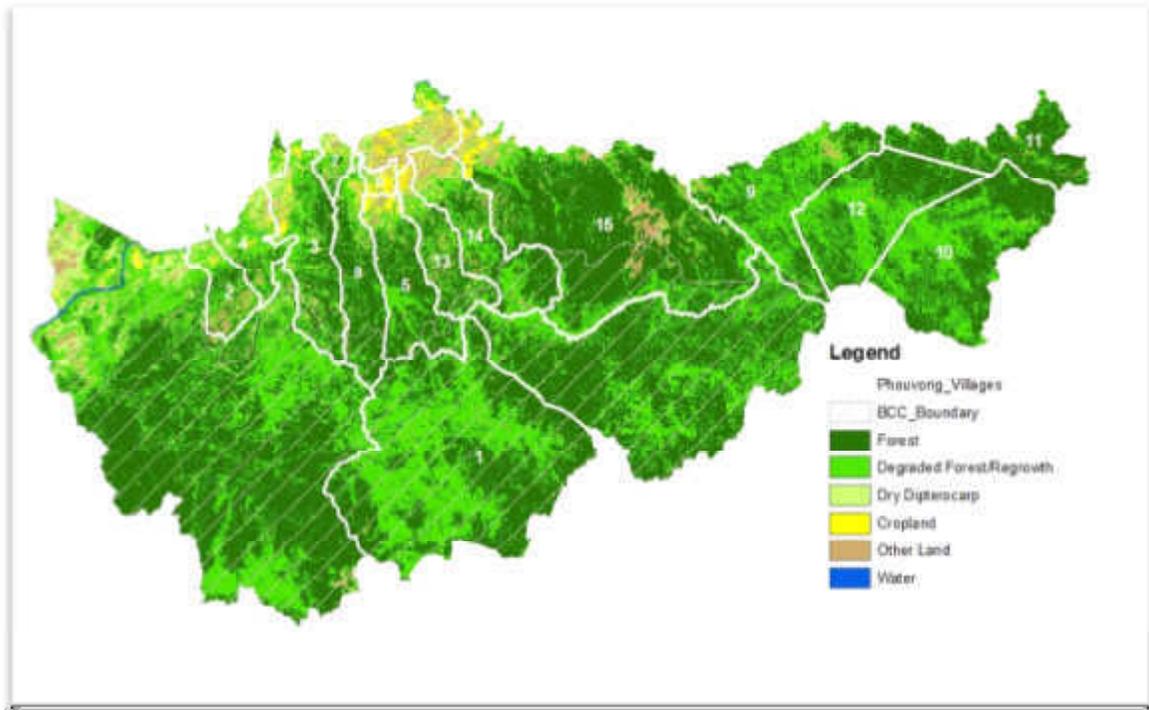
Slope Class	AREA (%)			
	Ayoun	Dakpar	Xekaman	Tateau
0 - 10	34%	23%	37%	21%
10 - 20	50%	45%	40%	35%
20 - 35	16%	29%	21%	40%
> 35	0%	3%	2%	4%
Total	100%	100%	100%	100%

Figure 12. Map of Dakcheung District showing the distribution of slope classes



6. Forest Cover for Phouvong District

Figure 13. 2010 Land Cover Map for Phouvong District and the BCC South Corridor

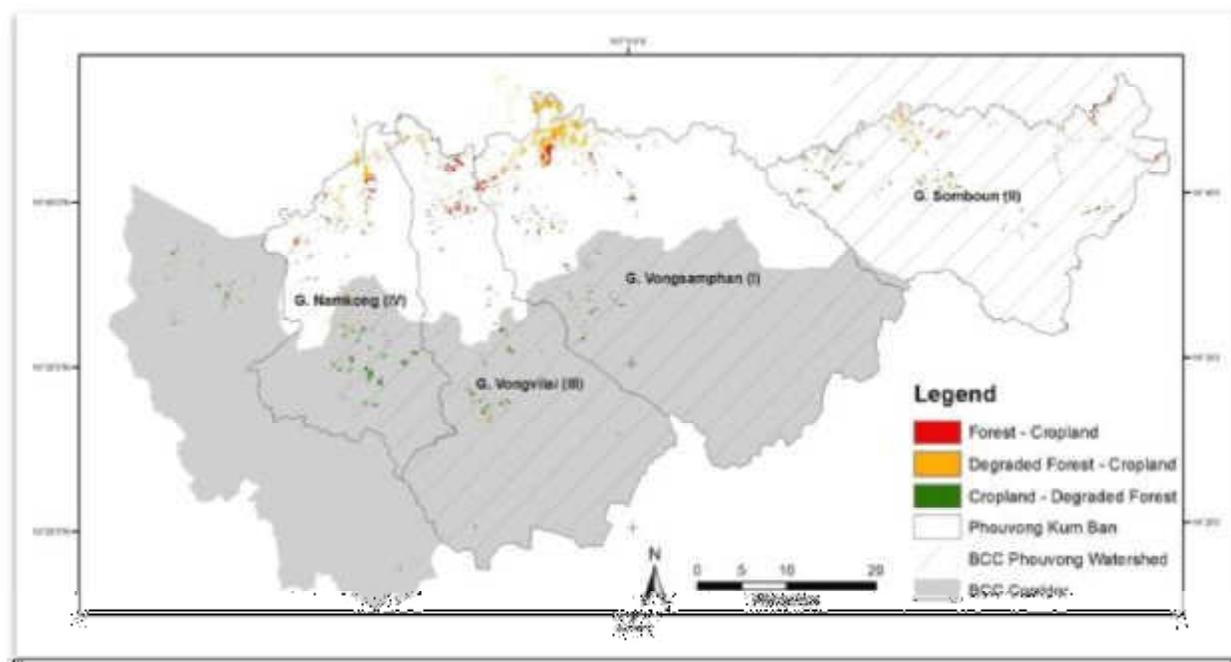


No	Kum Ban	Village	No	Kum Ban	Village
1	Vongvilai	Lamong (1)	3	Namkong	Phoukeua (11)
		Vangyang (6)			Viengxai (3)
		Phouhome (8)			Vonglakhone (2)
		Phouxay (7)			Namkong (4)
		Vongsomphou (5)			Vongsamphan (13)
2	Somboune	Somboune (9)	4	Vongsamphan	Vongkhene (14)
		Namsuane (12)			Khamvongsa (15)
		Phoungang (10)			

7. Analysis of Forest Change for Phouvong District (2000-2010)

42. Most of the change occurred in the North, outside the BCC Corridor. Clusters 1 presents highest forest disturbance values due to a large plantation installed on dry dipterocarp forest.

Figure 14. Forest cover change (2000-2010) and location of Village Clusters (Kum Bans) in Phouvong District



43. The Land Cover map for the reference year 2010 for Phouvong district (including the portion of the BCC corridor in the Sanamxai district) shows that most of the study area presents forest cover, while the cropland is concentrated on the north-western part of the district (where it also includes a large area of rubber plantation). The large forest cover of the district is due to the fact that most of the land has the legal status of Protection Forest, and few villages are present in the area. Degraded forest and forest regrowth are mostly located in the south and eastern parts of the district, often in correspondence to valleys and areas with lower elevation and slope. Dry Dipterocarp is present only in areas with lower elevation and warmer climate in the north-western part of the study area. The class Other Land represents bare soil or rock outcrops that are mostly found in the northern part of the study area

44. The forest changes detected between the year 2000 and 2010 occurred mostly in the northern and central parts of the district, which present higher density of human settlements. A large area of conversion from dry dipterocarp forest to cropland occurred in the Vongsamphan Kum Ban, where an extensive rubber plantation was established on Production forest land at the end of the 2000-2010 decade. Limited deforestation was detected within the BCC Corridor and consistent areas showed evidence of forest regrowth from the year 2000. However, the large areas of degraded forest currently present in the Vongvilai and Somboun Kum Ban's indicates intense forest degradation processes, which could not be detected with the available satellite data or that occurred before the year 2000.

45. The results of the change analysis by village cluster for the 2000-2010 period show that, apart from the large loss of degraded forest detected in the Vongsamphan Kum Ban due to the establishment of the rubber plantation, the four village clusters present overall similar amounts of change areas and change rates

46. There are three hydropower dams proposed on the Nam Kong River within the biodiversity corridor, of which one is under construction. Access roads have already been constructed and encampments constructed for workers. Some clearance of forest has already taken place, which can be detected on recent aerial photos and it is anticipated that substantial further clearance will take place due to both the flooding of the reservoir and settlers moving into the area. Discussions were held with the company promoting the dam and the issue of biomass disposal from the reservoir area raised with them.

47. Thus, although deforestation and forest degradation has been relatively modest in the recent past, it is expected to increase substantially in the coming years, and the selection of this area provides a good opportunity to find out the degree to which REDD+ incentives can be used to minimize the carbon losses.

Figure 15. Area of Forest Change (Ha) in Phouvong (2000-2010)

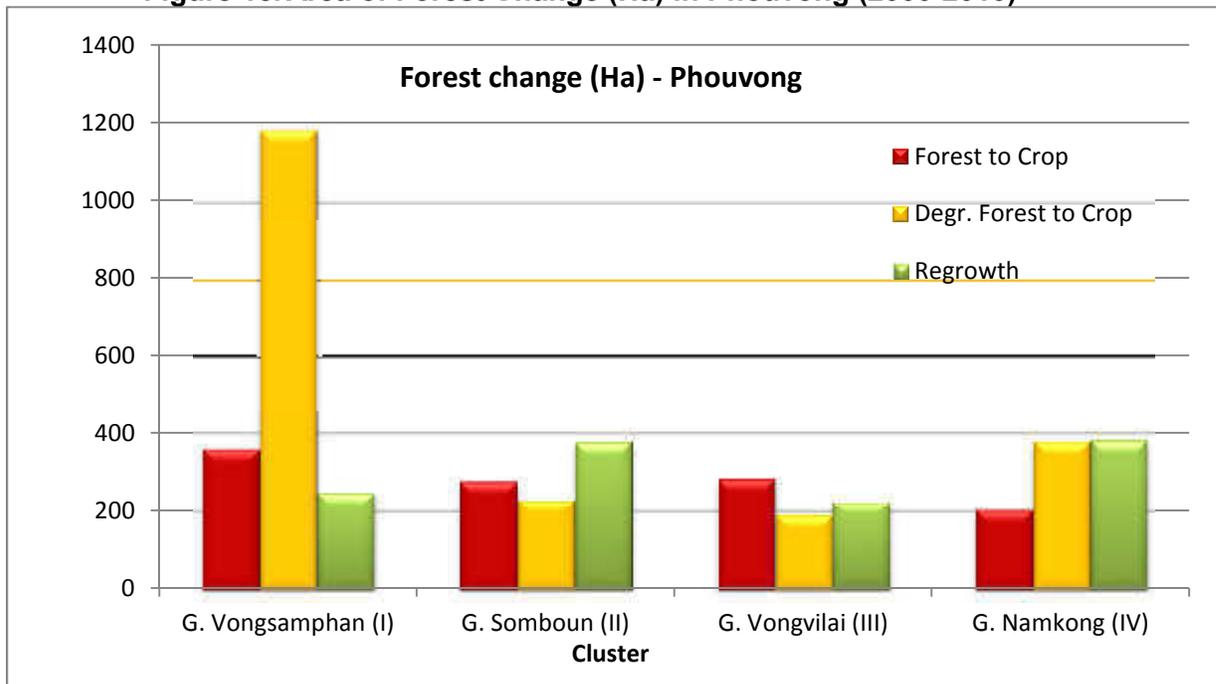
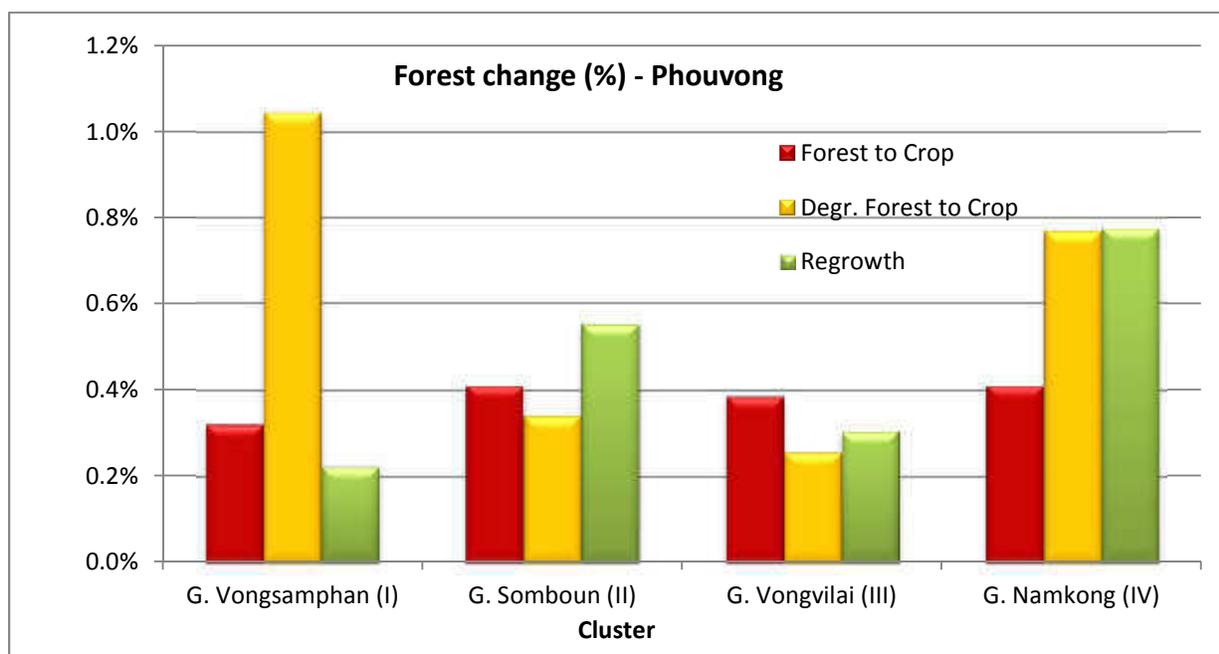


Figure 16. Percentage Forest Change in Phouvong (2000-2010)



8. Carbon Emissions from Forest Change

a. Carbon Stock Values

48. The assessment of forest-related carbon emissions and removals by sources and sinks due to direct or indirect human activities were obtained on the basis of estimates of the carbon stock density value in each land cover class. The carbon pools included in the present analysis are living aboveground and below ground vegetation biomass, which are responsible for the vast majority of carbon emissions and removals in most terrestrial ecosystems (Cairns, et. al., 1997).

49. The amount of carbon stored in vegetation is equivalent to about 50% of its biomass density, hence carbon assessment consists of quantifying biomass from which carbon stock of vegetation is directly derived. In this study, biomass is defined as the total amount of aboveground and belowground living organic matter in vegetation expressed in units of oven-dry weight. Biomass density represents the mass per unit area and is expressed as tons per hectare (T/ha).

50. The aboveground biomass density values per land cover class were derived from existing literature. For the classes (dense) Forest and Dry Dipterocarp forest, the biomass values were obtained from the Xepian REDD+ VCS Study performed by ÖBf in the Xepian National Protected Area (Lao PDR). These reference biomass values were chosen because, being based on an extensive field campaign carried out in the neighboring Xepian NPA, are local-specific values derived from direct measurements of tree parameters. For the class Degraded forest/Regrowth, national reference values were applied because no data for forest regrowth or fallow were collected within the Xepian study. Specifically, the biomass density of this class was computed as the average of the national values for Degraded (low stock) forest

and Fallow (unstocked) as presented in the LAO REDD R-PP. Since no local or national data were available for the class Cropland, the IPCC Tier 1 Default value (IPCC, 2006) was applied.

51. Specifically, carbon stocks on Cropland were defined according to IPCC GPG Table 5.6, which refers to biomass of annual cropland after one year of crop. Carbon stock is considered equal to zero in IPCC Tier 1 approach for the class Other Land, which mainly includes bare soils, and the same value was applied to the class Water.

52. The aboveground biomass density values (AGB) were then used to compute the belowground components (BGB) using root-to-shoot ratios. Since species-specific ratios were not available for the study area, the average root-to-shoot values for tropical and subtropical rain or humid forest as published by GOF-C-GOLD (2010) were used. Specifically, the root-to-shoot ratio is equal to 0.20 for aboveground biomass < 125 t/ha and 0.24 for aboveground biomass > 125 t/ha. The above and belowground tree biomass was then converted to carbon unit using the conversion factor of 0.5 (Penman et al., 2003). The emissions and removals of carbon from biomass were then converted to CO₂ equivalent units (CO₂-e) using the conversion factor of 44/12. The density values of biomass, carbon stock and CO₂ for each land cover class are reported in GOF-C-GOLD, 2010.

53. These biomass densities were assumed to be the same for each land cover class at the beginning and at the end of the period over which the changes were assessed. Therefore they do not take account of losses due to degradation during the period, which would also apply to areas where no change in cover is detected. National data suggest that about 1% of the forest carbon stocks is lost annually due to degradation, over the whole forest area. (REDD-R-PP). Unfortunately these losses cannot be detected by comparison of time-series satellite images

Table 5. Biomass, Carbon and CO₂ Density Values per Land Cover Class

LAND COVER	Biomass (T/ha)		Carbon (T C/ha)		CO ₂ (T CO ₂ /ha)	
	AGB	AGB + BGB	AGB	AGB + BGB	AGB	AGB + BGB
Forest	210	260	105	130	385	477
Degraded Forest / Regrowth	50	60	25	30	92	110
Dry Dipterocarp	82	98	41	49	149	179
Cropland		10		5		18
Other Land / Water	0	0	0	0	0	0

b. Emission Factors

54. The carbon emissions and removals from vegetation biomass in the project area were calculated by combining the 2000 – 2010 forest change data (ha) with the emission factors. The emission factors represent the carbon emission or removal density (T/ha) per forest change category, and were obtained from the difference in the mean carbon stock of the two classes involved in the change category. Positive emission factors indicate release of carbon (or CO₂) from land to the atmosphere (emission) while negative emission factors indicate absorption of CO₂ from the atmosphere to the land (removal). Smaller carbon dynamics that do not result in forest change but occur within a stable land cover class (as forest degradation or forest growth) were not included in the present study because such dynamics could not be detected and quantified with the available data.

55. The combination of the emission factors with the forest change statistics produced the estimate of the total carbon emission that occurred during the historical reference period 2000 – 2010 due to forest-related changes. In the following paragraphs, the carbon emissions are reported at Kum Ban level for each district in units of thousands of Tons of CO₂.

Table 6. Emission Factors of Total Biomass per Forest Change Category in Units of Biomass (left), Carbon (centre) and CO₂ (right)

CHANGE CATEGORY	T/ha	AGB+BGB	
		T C/ha	T CO ₂ /ha
Forest to Cropland	250	125	459
Degraded Forest/Regrowth to Cropland	50	25	92
Cropland to Degraded Forest/Regrowth	-50	-25	-92

c. Land Use Change Modeling

56. The Land Change Modeler (LCM) as implemented in the software IDRISI (Version “Selva”) is a spatially explicit land use change model that was used to estimate future location of deforestation and forest regrowth in the project area. Two land cover maps derived from satellite imagery (Landsat) for the years 2000 and 2010 (as described above) were used to predict a land-use change map for a third date, namely 2020. By comparing the 2000 and 2010 land cover maps, the LCM model identified the areas that are most likely to be affected by land change in the next decade if the historical trends continue in the future.

57. The land use prediction process can be subdivided into a first step of estimating the potential of forest conversion (or transition potential stage) followed by the prediction of forest conversion (or change prediction stage).

58. In the first step, the most important land use change categories mapped during the reference period (2000 – 2010) were used to model the potential of land to transition, providing as output a transition potential map. Such map represents the suitability for each transition and is an expression of time-specific potential of change. The Multi-Layer Perceptron neural network algorithm was used in this stage.

59. Statistical relationships were calibrated between landscape determinants of land changes and recently observed spatial patterns of change. Such relationships were then used to predict the potential of land change in the future. The landscape determinants are assumed to be related to the forest change events, such as terrain characteristics or distance to specific land use classes. Specifically, the following determinants were employed in the modeling phase³:

- Elevation
- Slope
- Distance to villages
- Distance to roads
- Distance to cropland
- Distance to degraded forest / regrowth

³The first 3 factors were treated as static variables while the last 3 factors were considered as dynamic, meaning that they were allowed to change through time during the modelling phase.

60. In the second step (the change prediction stage) the historical rates of change previously modeled in the transition potential model were used to predict a future BAU scenario for 2020. The amount of change expected to occur in 2020 was calculated by means of Markov Chain, which determines the state of a system by knowing its previous state and the probability of transitioning from each state to any other state.

61. The modeling was focused on forest-related changes that were identified by remote sensing data in the historical period and that are most relevant for estimating forest-related carbon emissions. Namely, the following change categories were modeled: (i) conversion of Forest to Cropland; (ii) conversion of degraded forest/regrowth to cropland; and (iii) conversion of cropland to degraded forest/regrowth.

d. Reference Emission Levels

62. Reference Emission Levels (RELs) represent the carbon emissions or removals due to forest change expected to occur from the continuation of current trends in land use change. In the REDD+ context, RELs are used to assess the impact of the project activities in terms of emission reductions in comparison to the expected emissions in the Business As Usual (BAU) scenario, without project implementation. Therefore, the BAU baseline serves as a benchmark to measure the impact of the project interventions, and the related RELs allow determining eligibility for REDD+ verified emission reductions.

63. It is recognized that historical deforestation rates help to predict future changes, and thus can be used to set national RELs or project-specific baselines. Therefore, the analysis of the causes, magnitude and location of past forest-change events and related carbon emissions and removals is usually employed to develop reliable future BAU scenarios against which performance of project activities can be measured.

64. The Land Use Change Model was used to analyse and project the location of forest-related changes in the project area on the basis of historical land change data. The output of the LCM model was a land cover map of the study area in the year 2020, obtained as a result of the projection of the past land cover change dynamics in the BAU scenario. By comparing the 2020 and the 2010 maps, the gains and losses for each land change category in the period 2010-2020 were assessed and subdivided for each District and for each Kum Ban (village cluster).

65. The land change values were then converted to carbon emissions and removals using the biomass reference values and Emission Factors presented here. The calculated emissions and removals of carbon presented here refer to aboveground and belowground biomass and are reported in CO₂ equivalent units (CO₂-e).

66. Finally carbon emissions and removals were converted to annual values and applied to the AF project time frame in order to compute the project specific RELs for the Kum Ban's targeted under the AF.

e. Methodological Limitations

67. The past and future emissions or removals and related RELs assessed refer only to deforestation and reforestation/afforestation which could be detected using readily available medium resolution images (Landsat TM). Carbon emissions or removals in forests remaining as forest due to forest degradation or sustainable management of forests are not covered in the present analysis.

68. The present assessment of RELs is based on the assumption that the BAU scenario in the current decade will mostly follow the historical trend observed in the last decade. Future threats and drivers such as socio-economic factors (e.g. population growth), infrastructure project and expansion of commercial plantations, or governance parameters were not modelled due to the absence of reliable data.

69. Therefore, the RELs can be further improved in the project implementation phase by including detailed information on national and local circumstances that are not currently available, such as local implementation of national policies or investments or development plans expected to affect forest emissions in the coming years. Nevertheless, the approach outlined here provides a robust and low-cost approach which can be used for the quantification of the carbon impacts of the project.

f. Carbon Emissions of Dakcheung District

70. The analysis of the historical carbon emissions at cluster level in the Dakcheung district showed that most of the CO₂ emissions occurring between 2000 and 2010 were due to deforestation events (i.e. conversion of Forest to Cropland), while conversion of Degraded forest/Regrowth to Cropland had a smaller contribution to the overall net emissions. As for Kaleum, carbon removals due to forest regrowth had little capability to compensate for the emissions due to forest loss. Among the clusters within the BCC watershed (clusters 0-2, 4, 6-8), clusters 7 (DakparKum Ban) and 8 (Xekeman Kum Ban) presented highest CO₂ emissions, substantially larger than those from the other clusters.

Figure 17. CO₂ Emissions Per Change Category by Kum Ban in Dakcheung District

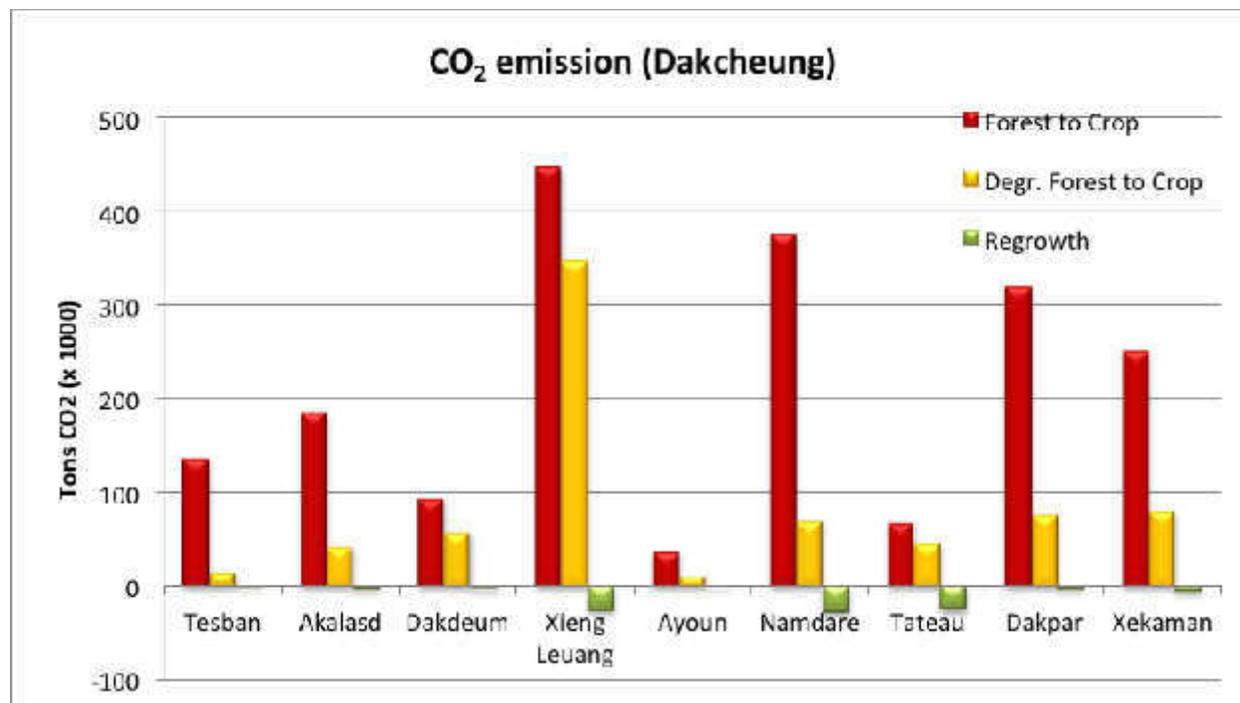
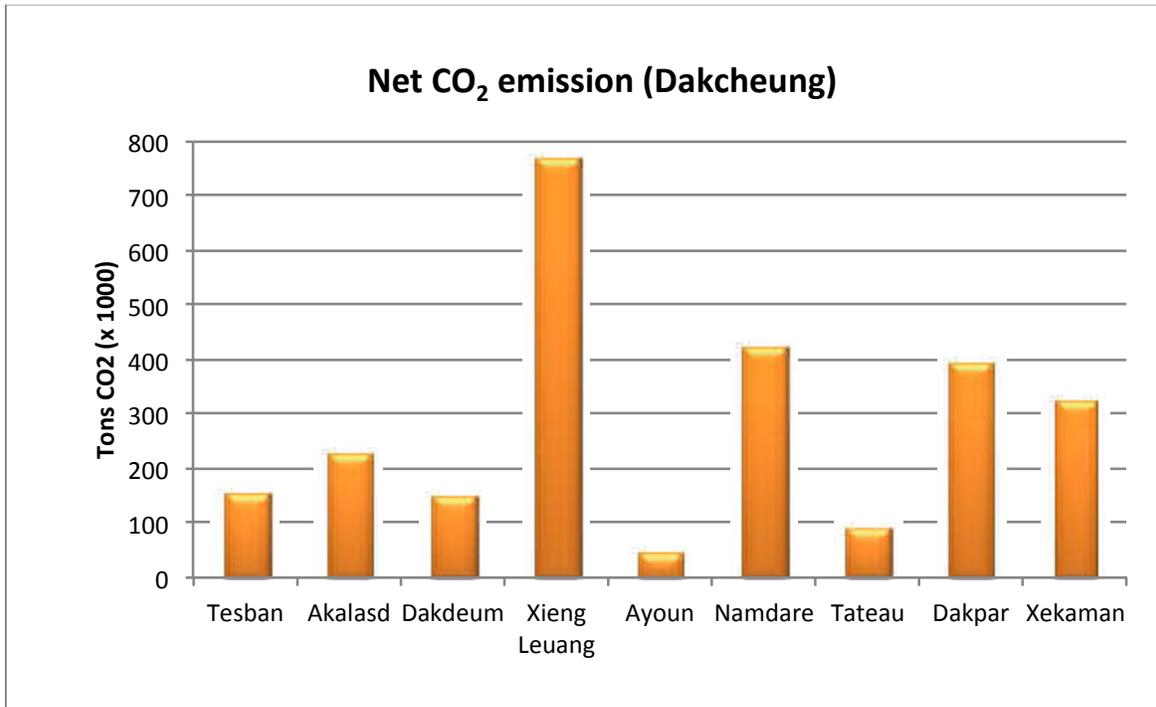


Figure 18. Net CO₂ emissions by Kum Ban in Dakcheung District



g. Carbon Emissions of Phouvong District

71. The analysis of the historical carbon emissions at cluster level in the Phouvong district showed that, as for Dakcheung, most of the CO₂ emissions occurring between 2000 and 2010 were due to deforestation events (i.e. conversion of Forest to Cropland). Conversion of Degraded Forest/Regrowth to Cropland was responsible of substantial emissions only in the Vongsamphan Kum Ban, due to the large rubber plantation established on degraded forest. In all clusters carbon removals due to forest regrowth were larger than those in the other districts. Apart for the Vongsamphan Kum Ban, the clusters presented similar CO₂ emissions, and the carbon removals from forest regrowth were able to compensate the emissions due to slash and burn activities and loss of degraded forest.

Figure 19. CO₂ Emissions Per Change Category by Kum Ban in Phouvong District

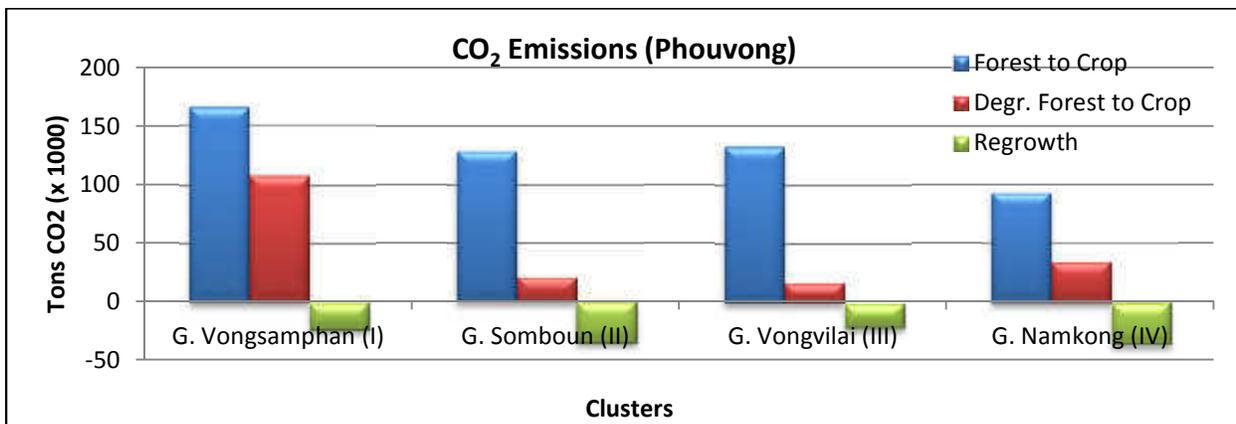
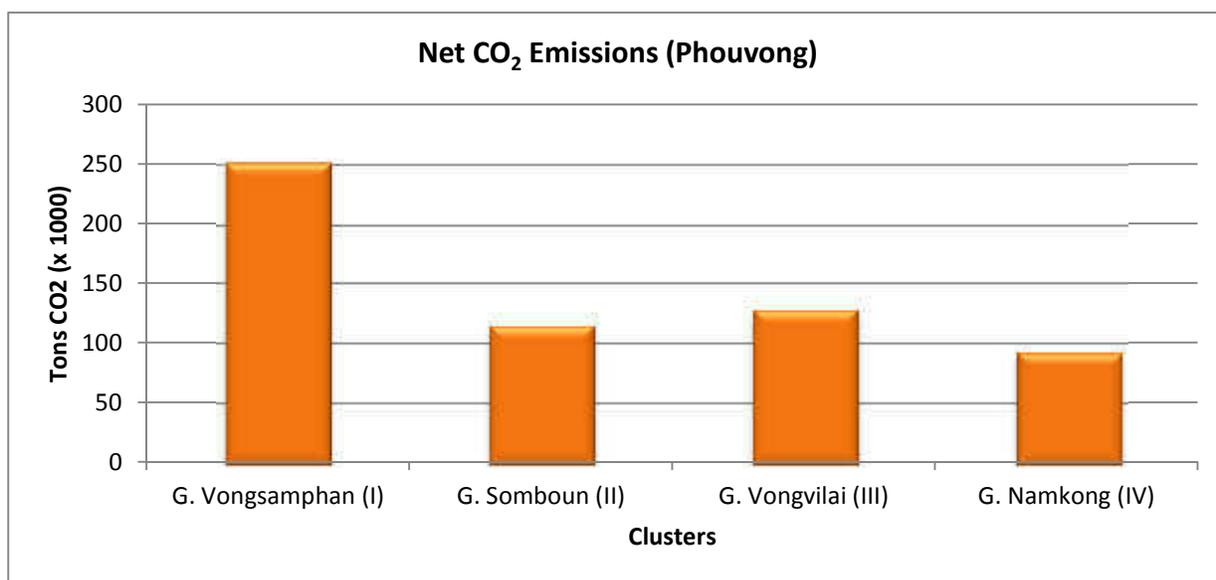


Figure 20. Net CO₂ Emissions by Kum Ban in Phouvong District



h. Analysis of socio-economic Impacts on Emissions

72. There are substantial differences in populations and levels of development between the Kum Bans surveyed, and the absolute level of emissions does not reflect the true significance of the situation in each Kum Ban. Assessing the land-cover changes and the consequent emissions on a per capita basis provides a better indicator of the real situation, the relative importance of measures to reduce emissions and the likely socio-economic impact. Higher per capita emissions may be due to a number of factors, such as the relative importance of primary and secondary forest in choice of land for clearance for agriculture, and the relative importance of shifting cultivation, as opposed to clearance for perennial cash crops, where the forest cover is not subject to regrowth.

73. Tables 7 and 8 below give population and forest cover change for the 9 Kum Bans in Dakcheung and 4 in Phouvong and show that the average household is clearing a larger area each year in Dakcheung than in Phouvong. Combining the average annual area per household of “forest” and “degraded forest” converted in the two Districts gives 0.46 ha in Dakcheung and 0.09 ha in Phouvong. The area of forest cleared annually in Phouvong is almost offset by the amount of regrowth, whereas in Dakcheung the regrowth is only around 10% of the area cleared.

Table 7. Comparison Between Populations and Forest Cover Change in Kum Bans in Dakcheung District

Dakcheung				Forest cover change 2000-2010 (ha)									
Kumban	Number of villages	Population	HH	Forest			Deg. Forest			Regrowth			Net an change (ha/HH)
				Area (ha)	Area/Village	ha/HH/an	Area (ha)	Area/Village	ha/HH/an	Area (ha)	Area/Village	ha/HH/an	
0 Tesban				299			174			25			
1 Akalasd		2,583	452	407		0.09	457		0.10	41		0.01	0.18
2 Dakdeum		3,840	607	204		0.03	629		0.10	36		0.01	0.13
3 Xieng Leuang	5	4,763	670	976	195	0.15	3,793	759	0.57	290	58	0.04	0.67
4 Ayoun	7	0	1532	81	12	0.01	125	18	0.01	15	2	0.00	0.01
5 Namdare	4	3,057	359	819	205	0.23	773	193	0.22	308	77	0.09	0.36
6 Tateu	6	1,086	240	149	25	0.06	503	84	0.21	277	46	0.12	0.16
7 Dakpar	7	1,589	221	697	100	0.32	846	121	0.38	47	7	0.02	0.68
8 Xekaman	8	1,945	330	547	68	0.17	874	109	0.26	62	8	0.02	0.41
6 + 7 + 8	21	4,620	791	1,393	66	0.18	2,223	106	0.28	386	18	0.05	0.41
District total	77	18,863	4,411	4,179	54	0.09	8,174	106	0.19	1,101	14	0.02	0.26

Table 8. Comparison Between Populations and Forest Cover Change in Kum Bans in Phouvong Districts

Phouvong				Forest cover change 2000-2010 (ha)									
Kumban	Number of villages	Population	HH	Forest			Deg. Forest			Regrowth			Net an change (ha/HH)
				Area (ha)	Area/Village	ha/HH/an	Area (ha)	Area/Village	ha/HH/an	Area (ha)	Area/Village	ha/HH/an	
1 Vongsamphan	3	4,505	831	362	121	0.04	1,182	394	0.14	252	84	0.03	0.16
2 Somboun	4	717	158	280	70	0.18	233	58	0.15	379	95	0.24	0.08
3 Vongvilai	5	4,096	779	288	58	0.04	192	38	0.02	227	45	0.03	0.03
4 Namkong	3	1,706	425	203	68	0.05	381	127	0.09	384	128	0.09	0.05
3 + 4	8	5,802	1,204	491	45	0.04	573	52	0.05	611	56	0.05	0.04
District total	15	11,024	2,193	1,133	76	0.05	1,988	133	0.09	1,242	83	0.06	0.09

74. In Tables 9 and 10 below the percentage forest cover in each Kum Ban in Dakcheung and Phouvong District is given together with the population density and the apparent area of land used for crops by the average household. This shows that forest cover in Dakcheung is slightly higher than the national average, while in Phouvong it is almost the same as the national average. The population density is very low in both districts, at around 20-25% of the national average, while the apparent area used for crops by each household is very high in Dakcheung, ranging from around 5 ha to 14 ha per household, but is close to the national average in Phouvong at slightly less than 2 ha per household. This is consistent with the larger area of clearance and smaller area of regrowth per household found in Dakcheung and tends to confirm that more land in Dakcheung is being permanently converted and used for perennial or cash crops. In Dakcheung, almost 40% of the forest clearance is in primary forest, while in Phouvong it is 49%. The high proportion of clearance of primary forest and the relatively large area cleared by each household on average in Dakcheung explains why the per capita emissions of CO₂ are so high at around 17 tons per capita annually, or twice the national average and almost three times the global average. By comparison, in Phouvong, despite the higher proportion of primary forest cleared the combination of a smaller area per household being cleared and the higher proportion of the cleared forest that regrows results in much lower per capita emissions at around 4 tons per capita, or about half the national average.

75. The scope for reducing emissions is therefore considerably higher in Dakcheung compared with Phouvong but they provide useful contrasts in conditions to learn more about the drivers of deforestation and forest degradation and the effectiveness of mitigation measures. In addition, the construction of dams on the Nam Kong River has already resulted in improved

access to the valley, which was previously fairly inaccessible, and an increase in in-migration and forest clearance can be expected.

Table 9. Relative Forest Cover, Population Density and Household Availability of Cropland for each Kum Ban in Dakcheung District

Dakcheung		Land area (ha) Total	Forest (ha) per Village		Forest cover (%)	Population density (p/km ²)	Cropland (ha/HH)
Kumban							
0	Tesban	6,872			29.9%	0.0	
1	Akalasd	18,538			36.5%	13.9	4.1
2	Dakdeum	18,493			32.6%	20.8	3.0
3	Xieng Leuang	36,309	7,262	1,667	23.0%	13.1	11.9
4	Ayoun	19,147	2,735	1,739	63.6%	9.3	3.6
5	Namdare	29,511	7,378	3,377	45.8%	10.4	6.5
6	Tateu	31,894	5,316	1,784	33.6%	3.4	5.1
7	Dakpar	63,293	9,042	6,248	69.1%	2.5	14.3
8	Xekaman	37,544	4,693	2,209	47.1%	5.2	7.6
6 + 7 + 8		132,731	6,321	3,434	54.3%	3.5	8.7
District total		261,601	3,397	1,571	46.2%	7.9	7.4

Table 10. Relative Forest Cover, Population Density and Household Availability of Cropland for each Kum Ban in Phouvong District

Phouvong		Land area (ha) Total	Forest (ha) per village		Forest cover (%)	Population density (p/km ²)	Cropland (ha/HH)
Kumban							
1	Vongsampha	112,940	37,647	24,163	64.2%	4.0	1.3
2	Somboun	68,451	17,113	9,803	57.3%	1.0	2.6
3	Vongvilai	74,695	14,939	7,999	53.5%	5.5	1.5
4	Namkong	49,433	16,478	7,165	43.5%	3.5	1.9
3 + 4		124,128	11,284	5,590	49.5%	4.7	1.7
District total		305,519	20,368	8,199	40.3%	3.6	1.6

76. Comparison of land and forest area in the Kum Bans selected for the AF investment (shaded in Tables 9a and 9b) between Dakcheung and Phouvong Districts shows that the totals are relatively similar. However, Dakcheung has almost double the number of villages in the three Kum Bans compared with the 2 Kum Bans in Phouvong so that the average total land area and forest area per village in Dakcheung is about half that in Phouvong.

i. REL for the AF Target Kum Bans

77. The results of the modeling analysis by village cluster (Kum Ban) indicate that the proposed AF implementation sites correspond to the Kum Bans with higher expected emissions, underlining the relevance of the AF project and the appropriate choice of locations for the purpose of reducing forest-related emissions and mitigating climate change.

78. The carbon emissions according to the BAU scenario for the AF project implementation period and target sites indicate that largest emissions are expected in the Kum Bans located in the Dakcheung District, followed by the Kum Bans in the Kaleum District. Substantial emissions are also expected in the Namkong Kum Ban in the Phouvong district. The expected RELs are reported in the Table 11 below for each AF Kum Ban by change category and as net emissions.

Table 11. RELs for the AF Kum Ban's for Each Forest Change Category and as Net Emissions (in the right column) in the period 2016 – 2019

Kum Ban	RELs - Carbon Emissions (1,000 Tons CO ₂) for 2016 - 2019			
	Forest to Cropland	Degraded Forest to Cropland	Cropland to Regrowth	REL - Net Emissions
Kaleum				
Vangpa Ngo	132	37	-19	150
Panone	59	7	-22	44
Dakcheung				
Tateau	224	39	-13	250
Dakpar	208	15	-20	203
Xekeman	160	31	-15	176
Phouvong				
Somboune	4	6	-30	-20
Vongvilai	18	9	-10	17
Namkong	66	35	-13	87

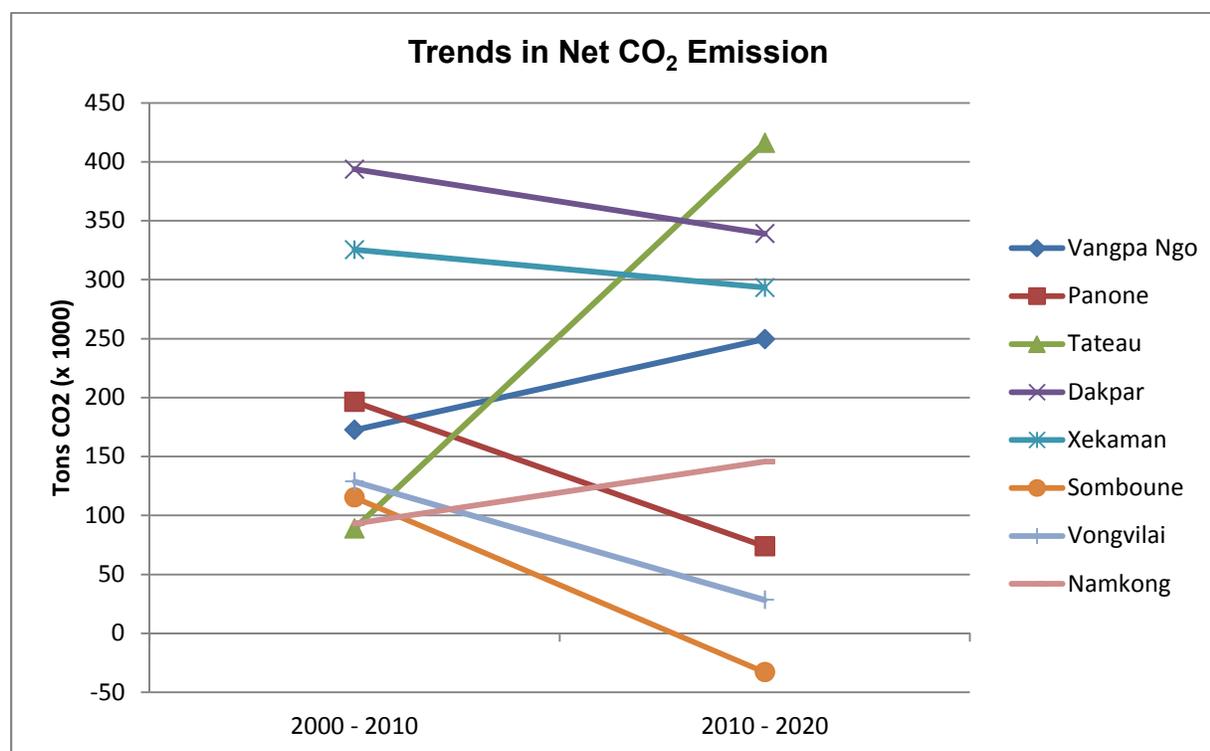
79. The comparison of historical emissions occurring in the decade 2000 – 2010 with the expected emissions for the decade 2010 – 2020 reported in the Figure 21 below shows variable trends in forest-related emissions in different AF Kum Bans. While CO₂ emissions in the current decade are expected to be considerably higher than those of the past decade in three AF Kum Bans, a reduction in net emissions is expected in the other village clusters. The analysis of the data showed that such reduction is due to the combined effect of lower deforestation and higher forest regrowth on cropland areas. However, the reduced deforestation and extensive forest regrowth forecast by the LCM model may be over-optimistic considering the increasing pressure on natural resources due to the on-going population growth.

80. Moreover, it should be kept in mind that the current RELs refer only to carbon emissions due to deforestation and do not include the emissions due to forest degradation, which cannot be reliably quantified using medium resolution satellite images. Considering the large extent of degraded forests present in the proposed project area, the inclusion of emissions from forest degradation would certainly increase the RELs of relevant amounts.

81. For these reasons, the current RELs are likely to represent conservative estimates, which may increase compared to the BAU scenario due to population growth as well as for accelerated infrastructure expansion such as the construction of new roads, reservoirs and village resettlements. As mentioned above, the current RELs do not include infrastructure currently at the planning stage in the project area because extents and timeframes of implementation are not yet known. However, it is expected that such infrastructures will cause an increase in net emissions from forest land in the coming years compared to the current estimates. Similarly, LCM models do not allow inclusion of the effect of population dynamics, and their impact on forest resources may have to be qualitatively evaluated and considered.

82. Given these limitations, the current RELs should be considered as an indication of the magnitude of future emissions more than a precise forecast of their amounts. Hence, according to accepted international practices and guidelines that indicate RELs should be adapted to national circumstances and updated regularly, it is suggested that current RELs should be revised periodically during the course of project implementation in order to include the most recent changes and new expected trends in land change in the study area.

Figure 21. Net CO₂ Emissions for the AF Kum Bans Observed for the Decades 2000–2010 and Expected for the Decade 2010–2020



j. Emission Reduction Calculations for the Project

83. The estimation of the changes in emissions of CO₂ resulting from the interventions by the project takes account of the following: (i) reduced emissions from forest that would have been cleared without the project, but remains as forest as a result of the project interventions; (ii) reduced emissions from forest that would have been degraded (either by uncontrolled and illegal logging or conversion of primary forest to secondary forest through rotational agriculture)

but remains intact as a result of the project intervention; (iii) sequestration of CO₂ by the forest that would have been cleared or degraded without the project, through growth of the trees in the forest that now remains; and (iv) sequestration of CO₂ in agroforestry plantations.

84. The amount by which emissions are reduced and the rate of sequestration is calculated based on the best available information on the forest types and conditions within the area that the project will influence. Data is available on average carbon stocks for the main natural forest types found in Lao PDR, covering Evergreen, Mixed Deciduous, Dry Dipterocarp, Coniferous forest and secondary forest following shifting cultivation according to the number of years of regrowth. Within the target areas for the AF interventions the forest is predominantly hill evergreen and mixed deciduous with some coniferous forest. Dry Dipterocarp forest is only found in one small lowland part of the target area.

85. The carbon stock for the natural forest areas is based on about 47,000 temporary sample plots measured by SUFORD project Production Forest Areas mainly in the southern part of the country and covering the first four forest types plus plots established by the National Forest Inventory. This data shows that the average volume per ha declines sharply with reducing crown closure and that most of the forest appears to be in the medium crown density class, while the areas classed by the Forest Department as “potential forest” with <20% crown cover have very low volumes and hence carbon stocks. The plots have been stratified for each forest type into carbon stock density classes that correspond roughly with crown cover density, although no precise measurements have been made of the correlation between crown density and carbon stock.

Table 12. Average Timber Volume Growing Stocks by Forest Type and Crown Density Classes for 47,000 Temporary Sample Plots Measured by the SUFORD Project

	Mixed Deciduous Forest		Dry Dipterocarp		Dry Evergreen	
	Vol./ha	No. plots	Vol./ha	No. plots	Vol./ha	No. plots
Crown closure>70%	208.0	3,504	178.0	174	171.7	275
Crown closure 40-70%	58.8	5,191	51.3	704	58.1	679
Crown closure 20-40%	18.9	3,307	18.6	614	20.4	356
Crown closure 10-20%	4.2	5,211	5.2	355	5.1	109
Bare		26,459		208		15
		43,672		2,055		1,434

86. These figures provide more detail than those used for the estimation of current emissions, which are averages across all forest types and crown density classes. However, for estimating future emission reductions, it is important to use such information, because the emissions avoided by saving areas of dense forest are substantially higher than saving low density “forest” (20-40% crown closure) and the subsequent rate of regrowth is higher in the low density forest according to permanent sample plots established by the SUFORD project. Unfortunately a detailed description of the forest areas within the target sites has not been possible during the limited time available for the study, and so the proportions of the total land area falling into the three “forest” crown density classes has been assumed to be 20%, 25% and 9% respectively based on general visual observations in the target areas. This accounts for the 53% of the land area estimated as forest covered, in accordance with the overall estimates. A further 35% of the land area has been classed as “regrowth” or secondary forest, and the balance of 12% is other land-uses. This represents a total forest area (including secondary

forest) of 135,073 ha in the target areas. The carbon stocks, and hence the emissions that would result from liquidating the forest are calculated from the timber volumes using the same conversion factors (timber volume to total volume to biomass to carbon to carbon dioxide) that are used in the national emission estimates.

87. For the project it is assumed that interventions would result in a decrease in deforestation due to the project interventions. These would include clear delineation and demarcation of boundaries and raising awareness among the local communities of the need to protect and conserve all such designated forest areas. They would also aim at the promotion of improved land management to increase agricultural productivity and farmer's income, small holder plantations that would have a similar outcome, and community based forest management and a decrease in forest degradation due to better protection of the forest areas with crown closure >20 %. The areas that would benefit from these interventions are based on the estimates for each Kum Ban made from interpretation of LANDSAT imagery.

88. In addition it is assumed that 1,450 ha of "potential forest" would be restored by planting, taking account of the labor capacity of the households that will be involved in the project. About 350 ha of degraded forest will be restored and a further 1,100 ha of land cleared for shifting cultivation will be restored with agroforestry with a perennial tree crop that will sequester increasing amounts of CO₂ in the coming years. The restoration will be focused on areas within the corridor that improve connectivity between residual good forest patches as well as on steep slopes where soil and water conservation co-benefits will accrue. It is assumed that the areas to be restored by replanting are those that are so heavily denuded of trees that natural regeneration is unlikely in the foreseeable future without protection against grazing. In areas where there are seed sources assisted natural regeneration would be used by protecting against grazing damage and some enrichment planting and weeding of any natural seedlings that are found.

89. The sequestration by these plantations is based on growth models for slow growing indigenous species. The carbon stocks and carbon sequestration rates for secondary forest are based on research by the Japan Forest and Forest Industry Research Institute.

90. The estimates of emission reductions are based on studies conducted during the AF project preparation and assume that there will be significant investment in supporting alternative livelihoods that will result in local communities gradually adopting agroforestry systems within the corridor area and hence reducing the area of secondary forest that they need to clear and burn each year. This will bring emission reductions from the area cleared and burnt annually as well as sequestration in the secondary forest from regrowth for a prolonged period without further cutting.

91. It is assumed that the protection efforts will be spread across 50,000 ha of forest within the target area and that current emissions are from the annual loss of about 0.1% of the area of forest (as estimated during the study) and about 1% of the growing stock annually (the national average figure) from forest degradation. This area is determined by the available funding and local manpower resources. The protection efforts are assumed to give a 5% reduction in emissions in the first year, increasing by 5% annually to reach 50% in the tenth year and thereafter there will be no further emissions from deforestation and degradation.

Table 13. Summary of Expected Emission Reductions During the First Decade from the Start of the Project (tons CO₂ eq)

Years after project commence	Sequestration		Avoided deforestation & degradation	Forest regrowth		Total annual emission reductions
	Reforestation (planned - 350ha)	Agroforestry (planned - 1100ha)		Avoided deforestation	Avoided shifting cultivation	
1	410	190	9,383	91	441	10,516
2	1,797	1,100	18,767	182	1,685	23,531
3	4,727	3,696	28,150	273	2,778	39,626
4	9,544	9,726	37,534	365	3,811	60,979
5	15,653	18,126	46,917	456	4,810	85,962
6	22,022	27,588	56,301	547	5,787	112,244
7	28,001	36,653	65,684	638	6,750	137,726
8	34,642	40,671	75,067	729	7,703	158,812
9	41,110	34,614	84,451	820	8,647	169,642
10	48,548	18,671	93,834	912	9,584	171,549
Total	206,455	191,036	516,088	5,014	51,996	970,588

92. These estimates of emission reductions include both an estimate of the losses due to forest degradation, which all the evidence suggests is very high in Lao PDR, with the average growing stock declining nationally by the equivalent of about 1 m³ per ha annually, and an estimate of the sequestration due to both regrowth in protected forest and forest restoration, neither of which can or have been included in the estimates of current emissions given elsewhere in the report.

9. Carbon Monitoring System Requirements and Capabilities

93. The main objective of the proposed MRV system is to measure the direct changes in carbon stocks as a result of AF interventions. These AF pilots are supposed to be scaled up. Therefore it is important to have a credible, evidence-based and robust MRV system that can prove that the AF interventions are a viable model that can be replicated. Yet, it is not foreseen to generate carbon credits during the project lifetime, therefore it will not be mandatory to apply approved voluntary market methodologies.

94. The REL and MRV system shall focus on the Kum Bans in which the AF is being piloted, but shall be able to quantify leakage at least at district level. It will be based on a combination of terrestrial measurements at site level with remote sensing analyses, using predominantly low cost, medium-scale satellite imagery. For terrestrial measurements, community-based carbon monitoring is foreseen which will require extensive capacity building and on-the-job training for villagers as well as government staff on district and Kum Ban level. The detailed MRV design will depend on the specific project activity in the AF pilots to be monitored, but a certain consistency will be required, also for reporting to provincial and national authorities. Close cooperation and harmonization of MRV approaches with other REDD+ initiatives in the region will be forged. Carbon monitoring (i) at the project site level will include various vegetation types (relatively intact high forest, degraded forest, forest regrowth after shifting cultivation, grassland) and forest management categories (e.g. designated Protection Forest Area, village use/community forest areas designated through PLUP in selected villages) of different size; (ii) in a leakage belt around the project area to monitor the potential displacement of activities

caused by the project, and (iii) in a larger reference area to compare the project scenario with a business-as-usual scenario.

95. In terms of existing technical capacity for forest carbon monitoring, it is very limited at present, and is highest at provincial level, and almost non-existent at district, Kum Ban and village level. This however does not mean that the capacity cannot be built-up. In fact, villagers have a lot of traditional knowledge about species identification, forest ecology, use of non-timber forest product (NTFP), etc. which can be tapped by the project for community-based forest monitoring. Yet, the use of advanced remote sensing and GIS technology requires expert knowledge, which can only be gained through studies or extensive training, and therefore this capacity should be primarily built at provincial level.

96. The recent restructuring of the forestry sector with the establishment of MONRE has further reduced the capacity for carbon monitoring at decentralized level. It can be said that the FIPD of DOF has the best capacity for and most experiences in forest carbon monitoring. Through the separation of Provincial Forest Protection Office (PFPO)/ District Forest Protection Office (DFPO) from Provincial Agriculture and Forestry Office (PAFO)/ District Agriculture and Forestry Office (DAFO), the staff has been divided between the two institutions. While it is acknowledged that many PFPO staff have a forestry background, only a few are acquainted with forest carbon monitoring, GIS and RS technologies.

97. In Provincial Office of Natural Resources and Environment (PONRE) in Attapeu, an Environmental Section has been established to monitor pollution, oversee environmental impact assessments, conduct M&E and awareness raising activities. It has 10 staff, out of which 6 staff have a BSc in Environment or Geography. They will depend on the expertise of forestry staff from the Natural Resource Management Section for assessing the carbon sequestration from land-use, land-use change, and forestry (LULUCF).

98. The decentralization policy of the GOL provides an important opportunity for the AF. It is the aim to transfer staff from the province to district and Kum Ban level in order to improve on-the-ground impact, and it will be important for the success of the project to have sufficient HR at site level. Therefore a sufficient number of qualified and motivated staff should be assigned to the AF project areas.

99. There is very limited information especially on tier 2 (national) and 3 (local) on a number of key parameters for estimating biomass and carbon stocks: biomass expansion factors, allometric functions, below-ground biomass, root-shoot ratio, etc. Furthermore, the carbon stock development of forest regrowth after shifting cultivation in mosaic landscapes is not well researched. The I-REDD project as well as the Japanese Forest Research Institute have done research and are developing allometric functions, but both projects are working in Northern Laos. It is thus proposed to consider providing some funds for applied research on these issues in the project area.

C. Institutional Analysis

1. Project Implementation Arrangements

100. The AF will be implemented as supplementary activities of the BCC Project. Accordingly the BCC Project implementation arrangements will apply to AF. The BCC National Project

Director and Provincial Project Directors of Sekong and Attapeu Provinces will also be responsible for implementation of AF.

101. Several AF modules described below will be implemented through service contracts. Contracts will be awarded following ADB's Guidelines for the Use of Consultants (2013, as amended from time to time) and Procurement of goods and services will be in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). Service contractors will prepare work plans for implementation of activities.

102. The National Project Management Office (NPMO) has revised the BCC procurement plan to incorporate AF service contracts, and will prepare the bidding documents to engage service providers and administer the service contracts. NPMO will also ensure smooth coordination between the service providers and Provincial Project Management Offices (PPMOs) and District Coordinating Offices (DCOs). This will be done by ensuring that service contractors work plans are synchronized with national, provincial and district work plans. Since NPMO currently has limited capacity to facilitate and coordinate activities it has been agreed that a full-time Project Manager will be recruited to support both BCC and AF. The cost of this position will be borne by the BCC Project. The Project Manager will be responsible for coordinating between MONRE and Ministry of Agriculture and Forestry (MAF) to ensure synergies between the project activities and activities of several agencies within MAF including, Forest Inventory and Planning Division (FIPD) and other divisions in the Department of Forestry, Department of Livestock and Fisheries, Department of Agriculture Extension and Department of Forest Inspection. The Project Manager will also be responsible for coordinating work plan and budget management between NPMO and PPMOs as well as between NPMO and the Grant Implementation Consultants (GIC). DFRM will appoint an additional AF Deputy Coordinator at the same level as the current BCC Deputy Coordinator, who will be responsible for approving all AF work plans, budgets and expenditures. NPMO will require the services of additional procurement specialists to prepare bid documents, evaluate bids and award contracts. Additional inputs of finance/accounting specialists will also be required to administer AF. These specialists will be recruited as individual consultants assigned to the NPMO and financed by the AF.

103. The PPMOs of Sekong and Attapeu Provinces will participate in AF activities and be responsible for monitoring and endorsement of outputs of the service providers. Where applicable, the PPMOs will also be responsible for facilitating official acceptance of such outputs by government agencies. The AF activities will be incorporated as a set of additional activities in the BCC annual work plans and budgets. The PPMOs in Sekong and Attapeu will recruit full time Provincial Project Managers to support implementation of BCC and AF activities. Provincial Project Managers will be responsible for coordinating between PONRE and PAFO similar to the arrangements described above at the national level and also for facilitating harmonization of work plans between the respective districts, province and national levels. The Provincial Project Managers will be financed by the AF Project.

104. The DCO in Dakcheung and Phouvong districts will support AF by participating in activities implemented by service contractors and monitoring and endorsing the outputs. Similar to the national and provincial levels, the DCO will incorporate the AF activities as a set of additional activities in their respective BCC annual work plans and budgets. It has been agreed that AF will finance the recruitment of volunteer staff (from the respective districts) to facilitate the implementation of AF activities conducted by the service contractors. These volunteers will cover the subjects of forestry, agriculture and livestock extension and finance.

105. Implementation of the AF activities will require some additional technical specialists to supplement the BCC Grant Implementation Consultant (GIC) team. These include: team leadership, GIS, carbon measurement monitoring and trading expert, REDD/community forestry expert, training (REDD) and gender specialists and unallocated inputs. These specialists will be added to the BCC Grant Implementation Consultant team.

106. The investment modules required to reduce CO₂ emissions, address both the need to improve livelihoods of local communities and measures needed to improve forest protection and management. The former mainly cover supporting the communities to change farming practices to deal with declining soil fertility for crops to avoid the need to rotate crops through large forest areas and to improve fodder for livestock to reduce the damage to forest regeneration from free range grazing. Such improved systems are expected to increase productivity and so improve food security, increase income and reduce poverty. Many of the technical skills required to develop system specifications for the modules and to supervise and endorse the work of service providers lie in various departments in MAF. The following MAF departments and divisions will need to be engaged by DFRM to support project staff with implementation through the relevant PAFOs and DAFOs: Livestock Department, Department of Agriculture Extension, Department of Agriculture, Department of Forest Inspection (enforcement), Department of Forestry, Forest Inventory and Planning Division (FIPD) for REL and MRV, Forest Research Centre in NAFRI for advice on selection of tree species and nursery practices.

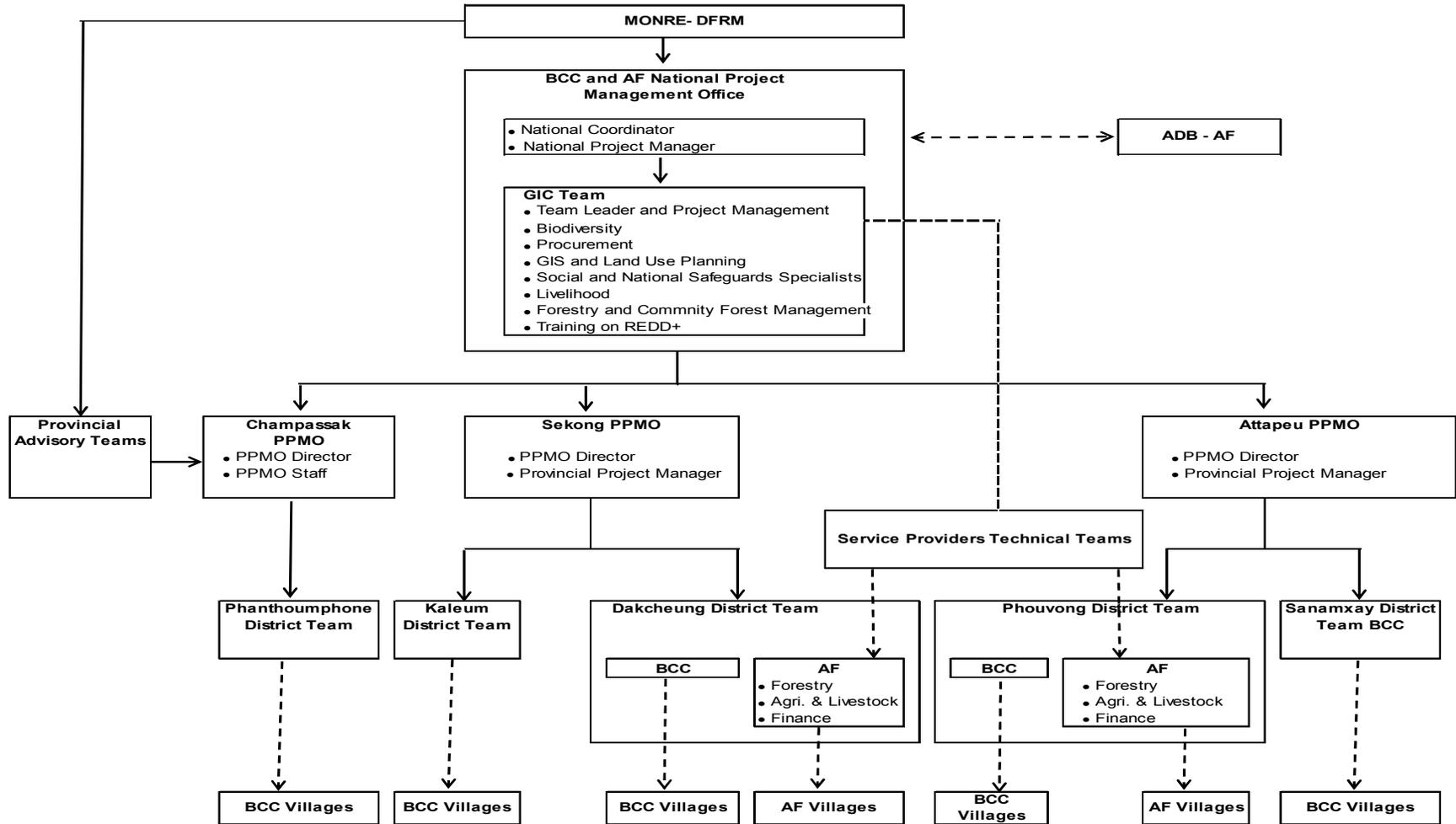
107. In addition to the three REDD+ projects funded by AF, there are projects funded by bilateral donors, in particular CliPAD and CarBi funded by the German Government and PAREDD funded by the Government of Japan. In addition, there are projects being prepared for the Voluntary Market by WWF and WCS. It will be important that the REDD+ Task Force plays an active role in coordination between the projects to exchange ideas and information and to investigate the need for national standards to be developed for such matters as carbon monitoring.

108. The additional staffing required to implement the AF activities will be closely integrated into the existing BCC Project management structure, but modifications will be made to ensure that the AF activities and all financial dealings and records are kept separately, so that the performance of the AF investments can be evaluated independently in future.

109. The existing Provincial Coordination Committee (Advisory Team) will provide interdepartmental coordination and support to both the existing BCC and the additional AF activities in their respective Provinces.

110. In the two districts where AF activities are to be carried out (Dakcheung and Phouvong) the current BCC Provincial Director will have the support of the additional staff referred to above to handle all AF matters. These staff will coordinate and monitor the implementation of the activities of the service providers at the village level.

Figure 22. Project Organizational Structure



ADB = Asian Development Bank; AF = additional financing; BCC = Biodiversity Conservation Corridors; DFRM = Department of Forest Resource Management; GIC = grant implementation consultant; MONRE = Ministry of Natural Resources and Environment; PPMO = provincial project management office; REDD+ = reducing emissions from deforestation and forest degradation

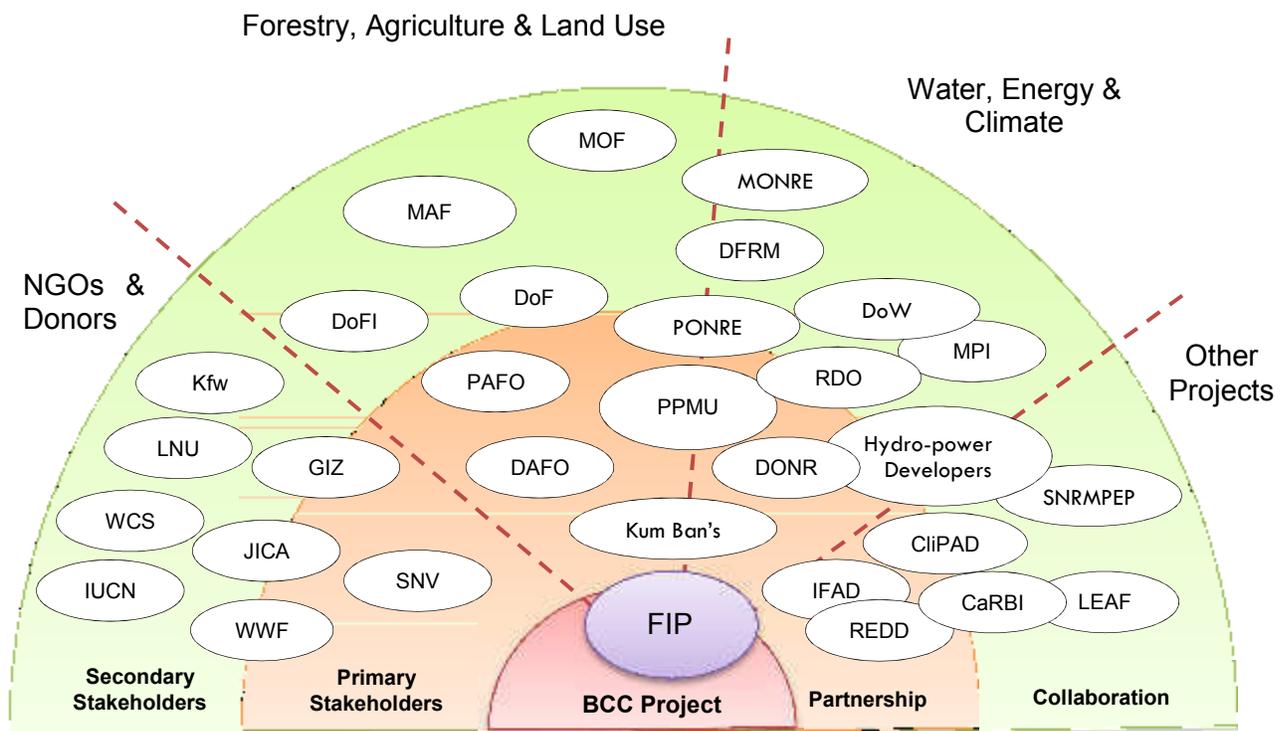
111. As illustrated in Figure 22 above, the organizational structure of the AF project team necessitates a higher level of engagement and staff presence at the provincial, district and local levels. This is primarily due to the need to focus more effort on restoration and reforestation activities in a smaller area in order to meet the likely future requirements of carbon markets.

D. Stakeholders Analysis

112. The project involves a diverse range of primary and secondary stakeholders who are either directly or indirectly involved in the BCC program, forestry or in climate change mitigation in the study area – such as provincial and local level government agencies, target villages, private sector companies, NGOs and other donor projects. All these organizations may potentially influence the nature and effectiveness of any of the climate change mitigation activities undertaken under the auspices of the AF. Without the active support and involvement of key players, it will be difficult if not impossible to achieve the projects objectives or expected outcomes.

113. Figure 23 highlights the primary and secondary stakeholder organizations (e.g., government ministries, etc.) and groups relevant to the target areas and sectors. Whilst we acknowledge that the local district and village level government represent the primary vehicle for executing the AF, it is evident from the stakeholder map that there are a range of government agencies in the broader context that influence capacity building options and possibilities to address climate change mitigation. It also highlights the interaction between governance and the civil society sector, and identifies opportunities for partnership and collaboration other projects and the private sector.

Figure 23. Stakeholder Mapping



114. Key stakeholders with a major direct role in the project were identified and consulted at different stages of the TA to obtain their inputs and feedback for designing the project. The majority of key stakeholders at the national level are from various departments and divisions of GOL.

115. The other major stakeholders at the province level include PAFO and DAFO, the district authorities, Kum Ban and village representatives, and as well as all community-based organizations such as village committees (including the village Lao Women's Union and Farmers Cooperatives).

116. As is evident from the stakeholder map, there are also a range of donor agencies, NGO's and private sector companies that are actively involved in similar programs in Lao PDR or in related projects in the Study area. Many of these stakeholder organizations could potentially play an important role in the AF project - either as collaborators or as partners. The AF team has met with a number of these stakeholders with the aim of pursuing opportunities for future collaboration and partnership, and it is expected that a number of partnership proposals will be built into the final project design.

E. Livelihoods Analysis

1. Current Livelihood Systems

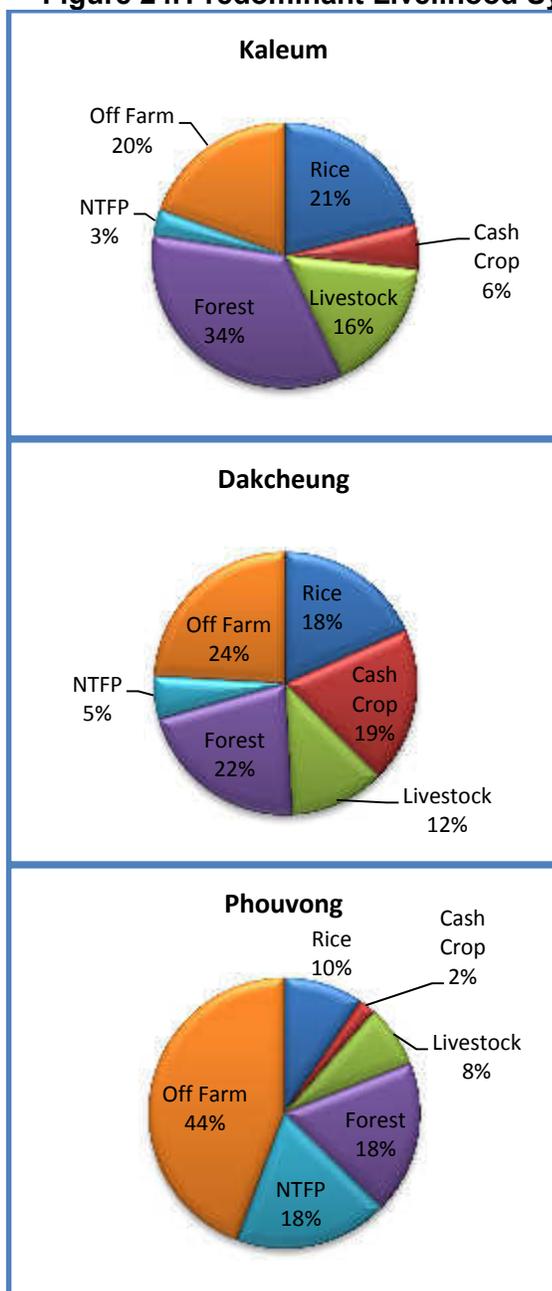
117. The traditional rice-based swidden system of farming that is predominant in the Study area has evolved over centuries and incorporates crop production, livestock and exploitation of forest resources into an integrated subsistence level livelihood system, where each activity supports the other.

118. The system primarily comprises three levels of resource use, irrespective of ethnicity or location, and includes:

- (i) Rotational (i.e. Swidden-based) 'Hai' rice, with complementary home-garden production of food items such as maize, vegetables, pumpkins and fruits;
- (ii) A more diversified land and resource use system which encompass 'Na' rice production (in paddy fields), livestock and fish production systems along with the use of forest resources; and
- (iii) Market based system incorporating off-farm employment, commercial trading and non-farm production of items for trade (such as fuelwood).

119. Figure 24 illustrates schematically the relative contribution to livelihood of these enterprises for an 'average' village the Study area.

Figure 24. Predominant Livelihood Systems in Kaleum, Dakchung and Phouvong



120. The system as depicted, may be composed of a variety of enterprises, the presence or absence of which depends on a mix of natural land and non-land resources available to the household in the village.

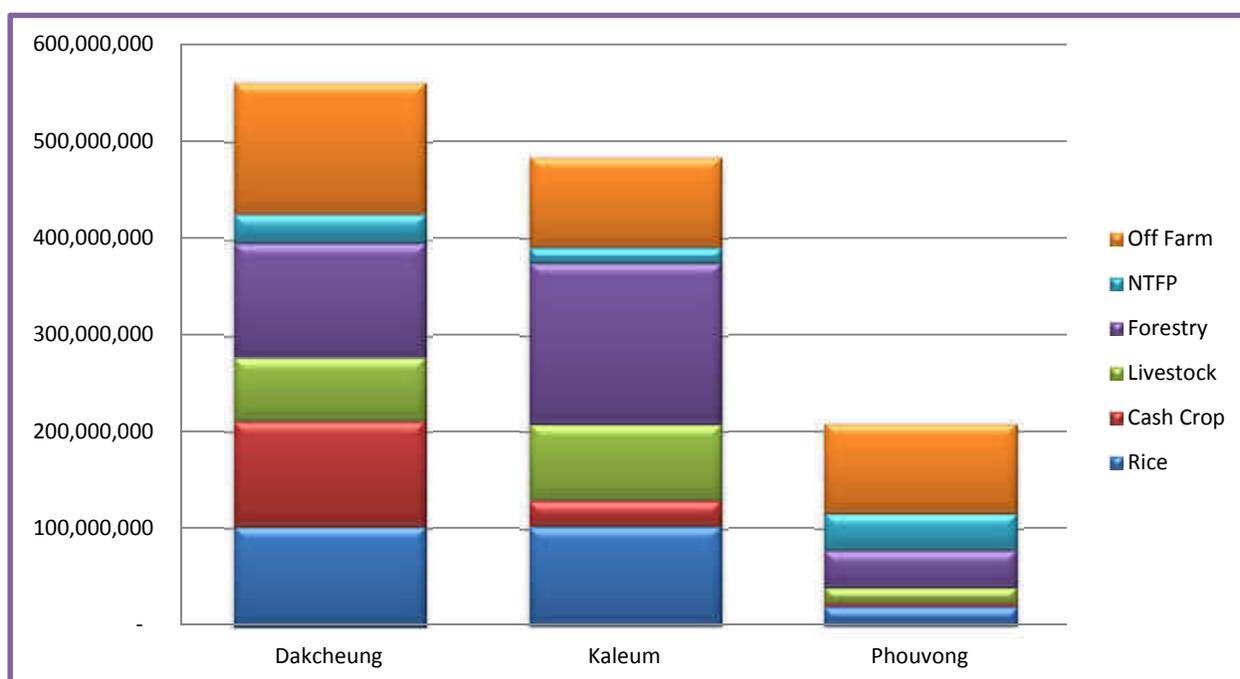
121. Rotational rice, with livestock and home-garden production forms the fundamental economic activity at the household level. However, this production system alone, has proved to be insufficient to ensure an adequate level of livelihood, with a large percentage of people in the Study area living below the national poverty line.

2. Village Survey 2013

122. In this system secondary activities are undertaken primarily for subsistence purposes, and also, to some extent for cash income generation (sale of surplus if any). These activities tend to be complementary to one another, to ensure more reliable and secure livelihood at the household level. This is particularly the case in times of rice deficit, with farmers utilizing resources outside of their own farm in the surrounding natural environment, exploiting water and forest resources through hunting, fishing and gathering a wide range of materials for food, fuel, construction materials and medicine.

123. Figure 25 summarizes the economic contribution (cash equivalent) for each respective livelihood activity currently undertaken in the three Districts in the Study area. This does not include the subsistence value of food produced for consumption in the household.

Figure 25. Cash Contribution to Livelihood System for Kaleum, Dakcheung and Phouvong



Source: BCC Village Survey 2013.

124. In economic terms it is clear that annual cash income levels are very low, especially for Phouvong. Income from agriculture (rice, cash crops and livestock) and forestry underpin the livelihood systems in Kaleum and Dakcheung, and this is supplemented by income from off farm labor. However, it would appear that households in Phouvong are a lot more reliant on off farm labor and NTFPs (Malva Nut) – and it is understood that many households also make money from alluvial gold mining.

125. It is also clear from Kaleum and Dakcheung that households who are engaged in the more diverse farming practices are better positioned to provide for their families. The productivity on the swidden system is not only dependent on the aggregate contribution of all the activities, (i.e. rice, vegetable and livestock production, fishing, hunting and gathering), but also on the resource base and land resources available at both the village and household level.

All of the villages within the study area have sufficient land resources available to improve their livelihood system given sufficient alternative livelihood opportunities and assistance.

3. Alternative Livelihoods Options

126. There are substantial opportunities to improve both the productivity and income generation potential of the current livelihood system in the Study area, through the adoption of a more diversified and in some cases more intensified form of agricultural and forest production system, incorporating:

- (i) intensification of rice production in suitable areas through soil fertility improvement and maintenance, improvement of cropping systems, and irrigation development (where feasible);
- (ii) promotion and cultivation of special cash crops such as fruit and vegetables and other horticultural crops;
- (iii) improved livestock management for both domestic consumption and sale; and
- (iv) diversification of forest products (fuelwood and charcoal, tree fodder crops, under forest planting and NTFP production).

127. As the farming system is intensified, and becomes more specialized the importance of traditional resources such as Hai and Na rice in the household livelihood system will decline. Secondary household activities will become the leading economic activities, in terms of cash income generation. These activities will be practiced more intensively, and will produce a greater production value than rice. This is especially true for the sale of livestock, the sale of cash crops, reservoir fishery and forestry activities.

128. Table 14 provides a summary of some of the potential livelihood improvements that may be considered in the Study area.

Table 14. Potential Options for Livelihood Improvement

Livelihood Option	Descriptions of Initiatives or Measures
Intensification of rice production in suitable areas through soil fertility improvement and maintenance, improvement of cropping systems, and irrigation development	
Enhancement of existing paddy rice and dry rice production systems (where possible)	<ul style="list-style-type: none"> • Promote rice productivity enhancement through the introduction of 'conservation agriculture' (including improved soil fertility, water management and IPM) and promotion of permanent land use techniques (including rice – legume – rice follow or other alternatives) • Improved post-harvest technologies promotion.
Rotation /Permanent upland rice cultivation	<ul style="list-style-type: none"> • Support suitable possibly use of rotated upland rice cultivation to the allocated areas through the Village Participatory Land Use Planning Procedure (PLUP) integrating with conservation agriculture and agroforestry.
Paddy development (where possible)	<ul style="list-style-type: none"> • Support in installing small scale agriculture infrastructure (Irrigation scheme, water reservoir and or access track) where possible for paddy land development or expansion; and / or possibly second season rice

cultivation (dry season);

- Support in land use and land development planning (terracing, effective use and management of irrigation water) for intensive rice production in rain fed and/or irrigated area (including possible productivity enhancement, double cropping) where appropriate.

Promotion and cultivation of special cash crops such as fruit and vegetables and other horticultural crops

Improved home garden for household consumption

- Support with necessary inputs and plantings materials; and techniques and technologies of different home consumable vegetable; and promote the back yard home garden establishment for nutrition and food security improvement (organic and chemical free vegetable).

Coffee cultivation

- Support with necessary inputs and planting materials and techniques for Arabica coffee varieties.

Promotion and marketing of cash crops

- Support with necessary inputs and techniques for the cultivation of fruit (Banana, Pine apple, Rambutan, Mango, Lichi, Avocado, Longan, Durian) and vegetables (Cabbage, Chinese Cabbage, Potato, Carrot, Asparagus, Chili, Tomato Jobstear, Mungbean, Soy bean, Melon) for sale into local and regional markets

Improved livestock management for both domestic consumption and sale

Establishment and management of small livestock

- Support and promote back yard appropriate home consumable small simple livestock (chicken, duck, turkey, and pigs) for home use and income generation.

Cultivation and processing of fodder crops for improved livestock nutrition

- Support with necessary inputs and techniques; and techniques and technologies of fodder cultivation, management including maize, cassava, legumes and tree fodder crops for improving animal nutrition and productivity, including cut and carry techniques.

Improve livestock feeding (fattening) and management

- Promote improved technologies and management skills on cattle fattening (improved feeding and fattening; deworming, vaccinating and possibly marketing or value added processing)

Diversification of forest products (fuelwood, under forest planting and NTFP production)

Promotion of 'community forestry'

- (i) Promotion of community woodlots for the sustainable production of *Cratogeomys* plantation forests for fuelwood for domestic consumption and charcoal.

Promotion of sustainable NTFP harvesting and sale

- (ii) Support and assistance for the promotion and commercialization of the Malva Nut (*Scaphium macropodum*) and support for establishment, management, harvesting and processing and processing of herbs and spices such as Ginseng, Cardamom and Marseng Bua (Malaria medicinal nut). Support for the harvesting of felled trees currently burnt *in situ* for swidden agriculture and conversion to charcoal using a simple retort that greatly reduces GHG emissions a) from the process compared with traditional methods and b) from burning the biomass *in*
-

situ.

129. Preliminary feedback from the proposed villages suggest that communities and individual farmers support the continuance of rice production with improvements of the practice (e.g. such as paddy development or conservation agriculture) to ensure stability and sustainability of their current livelihood system, and the concurrent development of livestock and horticulture and cash garden crops, such as coffee and cabbages. Hence there is considerable opportunity for adopting a combination of resource use system that emphasizes concurrently the increase and intensification in cropping (subsistence and cash), livestock production coupled with improved rice production, with supplementary NTFP production.

130. With regard to rice production the current yields per hectare are around 700kg/ha which is very low. Hence there is potential for substantial increases in yields of various food crops with improved field crop production technology, consisting mainly of fertilizer application, variety choice improved cultural practices and irrigation. With soil improvement the conditions using conservation agriculture techniques there is are also suitable for growing a number of high value horticultural cash crops, such as vegetables and fruit.

131. All of the proposed AF locations are suitable for growing a number of horticultural crops, including fruits (e.g., bananas, pineapples), spices (e.g., cumin, ginger, cardamom, chilies, etc.), medicinal herbs (such as Marseng Bua) and others (e.g., potatoes, vegetable seeds, tea). Experience in other parts of Lao suggests that returns from horticulture, as compared to those from cereal crops, are much higher for areas where access to a reliable marketing is available, as is the case in Kaleum, Phouvong and Dakcheung. In fact a number of the villages we visited are already experimenting with the production of high value vegetables for export to Thailand and Viet Nam, and farmers are known to be able to obtain a higher net return per hectare from production of vegetables.

132. Large livestock production at the household level is very important in terms of cash income generation, and there is considerable potential to increase productivity with changes in herd management and nutrition. Increase in productivity of the existing herd will depend on improving the nutritional content of the existing feed resource base and improvement in animal husbandry and health measures.

133. With regard to the AF program the aim here is not to look to increase the available land resources available for grazing – but concentrate on increasing the productivity per animal unit, whilst not increasing animal numbers. Within the context of this general strategy, efforts to increase livestock productivity should aim at improving herd productivity and management, improving livestock nutrition, and maximizing the utilization and/or value of livestock and livestock products already being produced. Commensurate with these activities, there is a need to improve the necessary technical support services, especially, improved herd management, animal health and nutrition. Financial-marketing and infrastructure support activities will include strengthening institutional capacity at district and village-level, providing micro-credit facilities, and developing more effective information and marketing systems. There is a large and growing domestic and export market for charcoal, but the traditional method for making it using earth pits is not only very inefficient but also produces large emissions of GHGs. The use of a small retort such as the “Adam retort” enables most of the GHGs to be recycled and burnt within the retort to provide heat for the process and reduce the gaseous emission to mainly water vapor. A significant proportion of the residual biomass on forest cleared for agriculture is either burnt *in situ* or left to rot and generate substantial emissions. Conversion of this material to

charcoal in a retort would both reduce overall emissions and provide additional income for villagers.

F. Poverty and Vulnerability

134. Attapeu and Sekong are amongst the poorest provinces of the south, with the districts of Kaleum and Dakcheung in Sekong, and Phouvong in Attapeu being ranked amongst the country's priority 47 poor districts. The GOL prepared a list naming 47 poor and priority districts in 2003 in order to channel resources to these. The districts are all upland areas and some villages are very difficult to access by motor vehicle in the rainy season. All communities practice shifting cultivation in the form of rotational farming of rain-fed rice, corn and cassava in the main. Some villages have flat land in between the mountains where paddy is grown.

135. The districts are close to Viet Nam and villagers receive strong influence from Vietnamese goods and traders and some villagers speak Vietnamese better than Lao. The districts were traversed by the Ho Chi Minh trail during the American-Vietnam war and bomb craters and detonated bombshells were found in many villages, and the forests are still infested with UXOs.

136. Key poverty and vulnerability factors used by GOL to define poverty in Lao PDR in decrees in 2009 and latest anew in 2013 use income as the criteria for the poverty line, namely until today LAK180,000 /month/person in rural areas. A recent (April 2013) announcement by the GOL to adjust the figure has put the threshold of poverty to LAK253,000 per person per month. A poor household was defined by a 2012 government decree Prime Minister's Decree on the Poverty Classification and Development Standards 2012-2015 as a household whose income does not meet the above standard multiplied by the number of people in the household. Poor villages are defined as villages: (1) where at least 51% of the total households are poor; (2) without schools within the village or within 1 hour by walk; (3) lacking a medical kit or dispensary within a 2 hour walk; (4) without safe water supply; and (5) village without access roads or which have roads that can be used during the dry season.

137. These GOL criteria are objective and seen with the eyes of the government. Absolute measures of poverty based on income or consumption found in government statistics are attractive, as they are easily understood by policymakers and the wider population. They also provide a relatively easy way to gauge poverty levels and to measure success in poverty alleviation, but sometimes villager's definition of a poor person is not the same. To the individual poor person, in particular a female-headed household, the definition of poverty is subjective and linked to the person's own experience of being poor. It is therefore somewhat different from the above criteria. Poverty cannot be understood solely as an economic problem, but rather as one with broad social and cultural dimensions.

138. For villagers "being poor" first of all means to lack labor, which is a characteristic of, in particular, female-headed households that lack a husband and his labor. Poor people are also those with many children making the ratio of producers to consumers skewed. Several poor people beg from other villagers, or work for them against a meal. All in all the most serious constraint was lack of labor far more than lack of land. Poor families may have even paddy land, but were not able to use it as they had no labor and no buffalo to pull the plough. Some had to pull the plough themselves. Being poor also meant bad health, being illiterate, did not go to school, stupid, excluded from social activities.

139. The poor households have rice only for 3-4 months/year as their harvest may be only 4-500 kg. The rest of the time they eat cassava, which may be their own cassava or they get permission to go and dig cassava from another villager's field or to help women in other families to pound it after harvest. Every day they go to the forest to collect NTFP, most often tubers such

as wild yams and taro that are starchy products. Besides this they eat all kinds of roots, ferns and berries and nuts and because the villages still have forest around them, so it is possible to survive on this and get a variety of nutrients. Some poor use the forest to cut wood to sell (illegally) or on a small scale to dig up roots of trees from valuable hardwood timber trees that have been logged, clean the roots and sell them to Lao or Vietnamese traders for 10-20.000 kip.

140. Poverty criteria in the eyes of villagers include:

- (i) a lack of labor means that the poor use a very small area of land and this would have a bearing on their poverty status also for the future as they cannot claim land if there is a growing privatization due to planting of perennials;
- (ii) most experience rice deficiency for up to 10 months;
- (iii) health problems due to bad nutrition;
- (iv) poor/no education for children;
- (v) no access to bank loans;
- (vi) do not want to take bank loans or revolving fund loans as they are afraid they cannot pay back;
- (vii) cannot derive long term benefits from project- and government support;
- (viii) shy and powerless (do not want to join social activities including trainings/meetings held at the village);
- (ix) women without husbands that are not confident to make decision and they have difficulty leading themselves and their family to improving their social-economic condition. Women have no strategy but to survive day to day. There is no long term perspective on things; and
- (x) some of the poor are looked down upon by government officers and perceived not to work hard enough.

141. Survival strategy of the poor:

- (i) beg for food from relatives/villagers within or outside the village, work on the land of families in the village in order to have food – eat with them, to take home some food for family members, or to have some money necessary for survival, exchange NTFPs they collect with rice from families in the village or in a different village;
- (ii) Harvest, eat, and sell NTFPs;
- (iii) Eat cassava, corn and other crops like peanuts, cucumber and fruits (banana) grown in the upland rice field or garden as a daily supplementary to rice or with rice; and
- (iv) sometimes go hungry and wait for support.

142. Access to forest products that includes starchy products as well as insects, worms, fish, birds, squirrels, etc. does provide the main livelihood linkages for poor people. Real trouble starts if the forest disappears, when concessions are given out by the central government. Against the law many concessions in Attapeu's Phouvong districts have been established where there was real natural forest that first was logged by the concessionaire before planting rubber. This created an additional profit from timber sale to the Vietnamese concessionaire from the logging. A major study of this was undertaken by Land and Natural Resources Research and Information Centre (LNRRIC) in Attapeu, which clearly had alienated villagers' access to both forest and agricultural land, especially for the Brao indigenous peoples that live in said districts.

143. One of the ideas behind concessions in the eyes of the central government is to create local employment among the communities living next to the rubber plantations, where rubber plantations deprived them of their land. But in fact, extremely few persons among the Brao want to work on the rubber plantations and if they did, it was only for a few days. The houses built by the Hoang Anh concessionaire, which perhaps initially were for Brao households to come and live against a promise of providing one labor for ten years (cf NLNRRIC) are today not occupied by any Brao but by Lao contractors that come from as far away as Xayboury with tractors to help work the land inside the rubber plantations. These contractors constitute a mobile chain of such contractors servicing plantations. Some Brao families have obtained agreement with the concessionaire to plant rice in between the small rubber trees for a couple of years while the rubber trees grow against a promise of weeding around the rubber trees next to the rice.

144. The poor rely on their own labor on a day to day basis and on support from kin and neighbors. They have no plans for change, if they have no labor or if they are not healthy. They beg from relatives, eat cassava and go to the forest for food. They collect large amount of forest products to eat and also to sell if there is a surplus, mainly bamboo shoots and mushrooms. They complement rice with cassava daily and with corn regularly which means that the variety and nutrients of their food are not the best. In the Southern part of Lao PDR most villages are single ethnic group villages, not mixed up, they are all Brao, Tarieng or Katang or Alak or Pako. They all exhibit a strong basis of what may be called social capital of mutual help. Most households in a village helped each other to ensure there is something for the vulnerable to eat.

145. The poor have problems making use of support initiatives from projects or from the Nayobay bank's provision of credit. They never take loans and they are never offered loans from DAFO or Nayobay Bank as the bank procedures more or less prevent this. They cannot make a business plan as they have no labor. Many have land; in fact, most villages except the ones deprived of land by large rubber concessions in Attapeu District had land. But the land is not used by the poor to the full extent possible.

146. Young people who are poor may go to work on plantations, except for the next door Brao in Attapeu. In more remote districts village groups of young people among Tarieng were previously collected by car to work in lowland rubber plantations, maybe up to 100 persons for three months to live in camps. Both men and women would go. Some young men may migrate to Thailand, but migration to address food security concerns has been seen in many cases to further undermine food security as the household then lacks labor to work swidden fields. There may gradually in some villages be a generational split within the community itself – where the younger villagers welcome the increased opportunities to move away from their villages, while the older members worry that not only their cultural identity and language are being lost but also the labor that is needed to live a decent family life with food security.

147. Income for the less poor with more labor and access to credit relies on cash cropping of coffee, corn, cassava, bong bark, mulberry leaves and selling animals. Some of these crops such as coffee are well established and a farmer may almost always find a buyer. For corn and cassava this is less certain, but it matters less, they say, as the families eat the corn and cassava themselves, if not sold.

148. Much of the government's focus on food security has focused on an extension of irrigated paddy into uplands areas. While such measures undoubtedly have a significant impact on those households that benefit from increased paddy production, there is evidence that investment in irrigated paddy in food insecure villages means that the well-off households with labor and access to land suitable for clearing for paddy benefit. Poorer households have limited

land suitable for paddy and a majority may not have the necessary labor which is the main constraint.

G. Ethnic Groups

149. Lao PDR is a unified nation. The Constitution of 1991, Article 8 guarantees that the State will not discriminate against people on the basis of ethnicity. Mass organizations such as Lao Front for National Construction (LFNC) are seen as the official nodal points for solidarity and mobilization of citizens of all backgrounds and all ethnicities. All ethnic groups have the right to maintain their traditions and culture. The Ethnic Groups Committee under the National Assembly is charged with responsibility for drafting and evaluating proposed legislation concerning Ethnic Groups. Implementation of the Party's policy on ethnic groups is tasked to the LFNC.

150. There is an overwhelming presence of ethnic groups in the districts of Kaleum, Dak Cheung and Phouvong, where they make up more than 80%. They all more or less observe their own customs and norms.

151. All the ethnic groups in the six districts belong to the Mon-Khmer language family, which overall in Lao PDR make up the poorest segment among ethnic groups. The majority Lao Tai group in Lao PDR has a 25 percent poverty incidence while for the Mon Khmer the figure is more than twice as high at 54 percent.

152. All uplands with annual crops of rice or corn were common property and land is still sufficient in most places to allow for rotational farming where households would be at relative liberty in a village context to choose where to cultivate the year to come. Most villages still have land and the poor can get land to use if they can find the means, labor and capital, to use it. No one would deprive the poor access to land.

153. Agricultural development planning is difficult as all project activities must fit the context, the learning characteristics of the groups and the nature of their land holdings. Development of 'producer groups' in line with GOL policy, where members will trust each other and are equal with respect to their entitlements faces many obstacles. Ethnic groups' members who do not speak or understand Lao may be less likely to participate; and thus they may not feel as motivated or empowered. The village representatives from the ethnic groups may not understand the proceedings and may not be able to represent adequately his/her village (group) needs. Vulnerable ethnic group members may be shyer as their education level is different from that of other villagers.

H. Gender

154. Poor women have no strategy but to survive from day to day. Poverty hits single women more often than men and women in all indigenous peoples' villages are clearly seen as less powerful than men but their rights in land are not curtailed. They very often do not speak Lao and do not understand discussions conducted in Lao. Some women especially those who are poor said that they understood some of what was presented in the meetings but they did not know how to apply such knowledge in practice. The views and priorities of poor women are likely to remain excluded from collective decision-making processes because they are absent.

155. While schools are expanding, the attendance by girls is less than that of boys. The state and the market penetration have over the last decades moved the sphere of interaction with

society at large into a Lao language medium where women face severe problems. As cash cropping expands women are less likely to receive critical information for agricultural extension due to language difficulties and bias of Lao extension agents. Information includes market information, information on risks and hazards, legal rights, and skills to use to develop the rights to access markets, improve income, and manage risks. Due to their lack of free time, literacy, and language barriers, and low levels of confidence women are excluded. There are high gender asymmetries in market information, extension services, skills, and training. If extension is carried out in a “gender-blind” way, it can even increase gender inequalities.

156. The women have limited savings or assets to protect them against external shocks. Poor women need financial resources that are specially targeted to them meaning that they do not need to be afraid to borrow “and waste DAFO’s money”. They need money to: buy small animals (with a guarantee of access to vaccinations and other extension services); clear the land to which they have a right, but which they cannot use due to lack of labor to do land preparation and invest in cultivations. Poor women are often not included in the group that the village headman forms to access loans from Nayobay bank and the poor women often do not dare take a loan. Poor women should not be asked to save first. The only time they would have cash in their hands will be when they sell NTFP, but that money is needed to buy rice. If savings are a requirement it would mean foregone consumption and therefore harm women’s and children’s nutrition and health.

157. To provide support to poor women through providing cows as a revolving loan should take into account the nature of the grazing land where it is safe and sound for their animals. In some villages, rubber plantation business limits villagers’ possibility to keep animals due to the use of chemical fertilizer by the company and a lack animal grazing area in the community as land was taken for concession.

158. Support to poor women must focus on food security first. That can be done by helping them to use the land they already have for rice production. Creating market linkages for poor women’s produce could be institutionalized if the women could market produce that was not labor demanding to grow. Perennials on “idle” common land such as bong trees could form part of the community’s area for a gradual establishment of a perennial crops area. Women need tailored support as the creation of value chains can often be gender biased: men speak to other men when brokering agreements between producers and buyers and women may lose out.

III. PROJECT DESIGN

A. Rationale

159. The Biodiversity Conservation Corridors (BCC) Project is one three-country projects to enhance transboundary cooperation and management of forest ecosystems within and between countries of the Greater Mekong Subregion (GMS). The GMS Governments of Cambodia, Lao PDR and Viet Nam, with support from ADB have identified the most important biodiversity conservation landscapes in the sub-region that are vulnerable to increased development pressures and environmental degradation. The project seeks to build resilience by reducing vulnerability within these landscapes.

160. In Lao PDR, the BCC Project addresses the fragmentation of the biodiversity rich forest landscapes of southern provinces of Attapeu, Champasak and Sekong. The BCC will promote sustainable resource use, restoration and protection of these productive landscapes to enhance the provision of critical ecosystem services necessary for sustaining local livelihoods and investments in hydropower, transport, water and food-security enhancing sectors.

161. The BCC Project represents up-scaling of the GMS Biodiversity Conservation Corridors Initiative (BCI) which was implemented as a pilot project between 2006–2009 in 11 villages in Champasak Province. The BCC will maintain and consolidate forest ecosystem connectivity between Xe Xap National Protected Area (NPA) in Sekong with Dong Ampham NPA in Attapeu and Xepian and Dong Hua Sao NPAs in Champasak.

162. The design of the biodiversity corridors is embedded within a multipurpose, sustainable, biodiversity landscapes approach. The BCC Project covers 67⁴ villages in 5 districts located across the 3 provinces with a total population of approximately 27,500 consisting of over 4,700 households. Details of the BCC villages are shown in the table below. The BCC area is predominantly mountainous covered with protection forests and NPAs, where ethnic minority groups make up over 53% of the population. Of the 67 selected BCC villages, 46% (29) are considered poor villages, with monthly incomes from farming and non-timber forest products ranging between \$30–\$427. The majority of households (74%) in these villages are of people belonging to ethnic minorities. The BCC will (i) provide secure forest rights for poor households and ethnic minority groups for their collective management of forest resources; (ii) restore habitat on degraded forest lands with planting of natives tree species and agroforestry models with improved sources of non-timber forest products; (iii) improve livelihoods and income enhancing small scale infrastructure; and (iv) generate over one million cash-based labor days through BCC activities. Delineation and demarcation of these corridors will be in consultation with primary beneficiaries based on a participatory land use planning approach.

163. In line with the targets of the 7th National Socio Economic Development Plan (NSED) 2011-2015, the proposed BCC will restore and maintain forest cover to contribute to the national target of 70% forest cover by 2015 and to contribute to achieving social sector targets such as decreasing poverty to below 19% of population by 2015 and improve access of population to clean water and use of latrines.

⁴ The number of villages was reduced from 69 to 67 during the mid-term review because of Government's policy to combine small villages.

164. As mentioned in the introduction Lao PDR joined the Forest Carbon Partnership Facility (FCPF) in 2007 and was given grant funding to prepare a Readiness Preparation Proposal (R-PP) which was submitted at the end of 2010 and approved by FCPF in early 2011. It included a REDD+ strategy to provide the framework for implementing a range of REDD+ activities in the following five years. In 2010, Lao PDR was selected as a pilot country to participate in the Forest Investment Program (FIP). A FIP Investment Plan⁵ for Lao PDR was approved in 2012 which proposed that the FIP funds should be provided as additional financing to ongoing projects in order to benefit from the established implementation arrangements and so minimize transaction costs. The purpose of this Technical Feasibility Study is to prepare the technical basis for “expanding the scope of the ‘Biodiversity Conservation Corridors (BCC) Project in Lao PDR’ to accommodate additional financing from the Forest Investment Program (AF)”.

165. In this context, the AF additional finance will expand on the BCC activities under a revised design and monitoring framework, and include the augmentation of ecosystem service and benefits through carbon sequestration, improved watershed management and the introduction of payment for ecosystem services (PES) mechanisms such as REDD+ and other pro-poor climate change mitigation financing measures.

166. The aim of the AF additional financing is to pilot new approaches to land and forest management that will reduce net CO₂ emissions from deforestation and forest degradation, and the promote CO₂ sequestration through restoration of tree cover, especially where other environmental benefits will accrue, such as reduced soil erosion on steep slopes; improve the conservation of biodiversity and strengthen institutional capacity, forest governance, and forest-related knowledge; protect the rights of indigenous peoples and local communities, and poverty reduction through rural livelihoods enhancements and improved security of land tenure.

167. These objectives align with the six themes in the FIP results framework (emission reductions, livelihood benefits, biodiversity and environmental services, governance, land tenure and capacity building) as well as the four outputs of the BCC Project, these being: (i) institutional and community strengthening; (ii) biodiversity corridors restoration, ecosystem services protection, and maintained; (iii) livelihood improvement and small-scale infrastructure support in target villages; and (iv) project management and support services.

168. Under the AF additional financing these project outputs will remain broadly unchanged, except with regard to the expansion and refining of activities (such as forest protection, restoration, livelihood and tenure support activities). The overall revised project’s impact and outcome will expand the BCC project benefits in terms of forest protection, restoration and management as well as improvements in livelihoods, income and well-being.

B. Project Outputs and Activities

169. Given the diversity of agents and drivers of deforestation and degradation, there is also a wide range of possible activities that AF can adopt to address them. Their common feature is that they are designed to reduce deforestation and leakage permanently, while avoiding adverse social and environmental impacts and fostering positive impacts.

⁵ Government of Lao People’s Democratic Republic. 2011. *Forest Investment Program Lao Investment Plan*. Vientiane.

170. For the AF project the strategy is to 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. These activities are aimed at increasing the value of a standing forest (whether it is intact or not) through increasing productivity and income generation potential, strengthening the compliance and law enforcement activities and the enhancing the value of existing deforested areas to relieve pressure on intact forests. The aim is to generate additional incomes for the deforestation agents and thus make deforestation 'less necessary'. However, these activities must also be consistent with, and complementary to the BCC activities, and hence are integrated into the BCC project design as described in the following sections.

1. Output 1: Institutions and Community Strengthened for Biodiversity Conservation Management and Ready to Implement REDD+

171. Under output 1, investments strengthen the capacity of the national, provincial, district and Kum Ban (development cluster) levels in corridor planning, corridor management, and providing protection and sustainable use policies, guidelines, and local regulations for enforcing the biodiversity corridor management plan. In particular, activities under output 1 will contribute to: (i) Biodiversity Corridor policy and legal framework, and management plans covering at least 690,000 ha of forest and non-forest land in 67 villages spread across Attapeu, Champasak, and Sekong provinces in Southern Lao PDR; (ii) participatory land use maps and village investment plans are ready in 67 villages covering 5 districts in 3 provinces; (iii) by the end of 2015, all villages receive collective forest land management certificates; and (iv) by project end, over 90 provincial, 60 district, and 690 village level persons are trained in Project activities; from the trained persons, at least 40% are female with a large portion from ethnic minority groups.

172. Particular emphasis will be placed on GIS-based mapping of village conservation forests and community forests and developing management plans for these forests. The delineated corridor maps together with a draft management plan will be submitted to Provincial Office of Natural Resources and Environment (PONRE) for endorsement in each province and to Ministry of Natural Resources and Environment (MONRE) for approval. The village forests will be demarcated. The biodiversity corridor area will be demarcated along major road arteries and in villages. The Project will promote GMS transboundary cooperation between Lao PDR, Cambodia, and Viet Nam by supporting exchange visits and sharing of information regarding scientific research, biodiversity database, forest cover, and management of transboundary forest ecosystems.

173. The collective forest management certificate or registration at district level will be provided to villages that enter into a co-management contract with the state owners/managers of forest land. This contract will enable the group to protect and manage the natural forest according to the approved management plan guidelines.

174. Provincial, district and cluster/village level target groups will be specifically trained in skills of biodiversity corridor management, patrolling, conservation, and water and forest protection. It is expected that by Project completion, provincial level staff will have acquired GIS based mapping skills—enabling its staff to integrate different layers of information and data into composite maps integrating conservation, climate change and development.

175. The AF will support awareness and capacity building on REDD+, training will be provided to provincial and district staff and at the community and village level within the districts of Dakcheung and Phouvong and will specifically seek to support both female and ethnic

groups. In addition, each participating district will host an annual forum on REDD+ for consolidating experience, and introducing new innovations and developments from within the REDD+ community. The AF will support construction/ rehabilitation of the District offices of Natural Resources and Environment (DoNRE) in the two participating districts.

176. At the village level a modified land use planning process that identifies and assesses the drivers and causes of forest use, loss and degradation will be tested as possible strengthening of current PLUP processes. The planning will identify priority drivers and management responses for piloting implementation. Each subproject will be monitored under the carbon assessment and monitoring program.

2. Output 2: Biodiversity Corridors Restored, Ecosystem Services Protected, Maintained and REDD+ Ready

177. The second output supports (i) village and cluster-based forest protection through patrolling and enforcement systems,⁶ (ii) forest restoration through community forest planting programs and through habitat connectivity planting demonstration sites, and (iii) the development of biodiversity data sets to define corridor management priorities and systems.

178. About 170,000 ha of the village forests within the total corridor landscape of 17,000 square kilometers will be patrolled by village patrols/guards. The coverage of forest area to be protected is on average 2,500 ha/village. During the mid-term review it was agreed that the NPMO would develop a plan for the institutionalization of patrolling at a community level within the enforcement units at the commune and district level before 30 June 2015. If a province fails to prepare and approve such patrolling plans by the specified date, funding can be allocated to other provinces for patrolling or cancelled.

179. The investment under Output 2 supports forest restoration covering 3,900 ha through enrichment and restoration planting, non-timber forest product (NTFP) planting and agroforestry. Restoration activities include payments for labor provided by households, in particular to women, thus improving household incomes.

180. Following the mid-term review, the planting program at the community level was restructured into a two-step process. Step one involves the development of a community forest planting plan for each in the district and province that covers the remainder of the Project life. The plan was prepared prior to June 2015 and defines the planting program in 2016 through the end of the Project. The plan was prepared by a provincially led forestry team supported by the grant implementation consultants (GICs) experts and identifies all sites to be planted by geo-reference, the size of site, the proposed planting model, the government forest norms to be applied, a cost estimate and a time line for planting, maintenance and ongoing inputs. The plan was reviewed by the NPMO and the GIC team leader prior to being approved by the respective Provincial authorities. The approved plan is the basis for preparing yearly work plans and the release of funds, the assessment of work completed and the assessment of survival and ongoing maintenance. Each planted site will be inspected twice in the first 12 months and annually thereafter by a team comprising the Provincial Forestry Department, PPMO and the GICs expert. All assessments by this team will be subject to independent verification by the monitoring program.

⁶ The patrolling was moved from output 1 to output 2 at MTR so that it was more closely aligned with the forest level investment activities supported by the BCC grant.

181. Connectivity planting program will involve two demonstration sites of around 400 ha each. The sites will be identified by the biodiversity assessment and corridor management contractor using existing data models. Each site will be field inspected and a proposed silviculture program will be prepared for investment during the planting season starting 2016. The silviculture will focus on conservation and habitat objectives and will be integrated with wider land use patterns through the use of agroforestry planting on the margins of natural forest planting.

182. The biodiversity assessment program will be extended and updated. First a habitat gaps model will be developed from existing data sets and used to prioritize and define the habitat planting demonstration sites and their management. Second vegetation data layers will be updated through improved satellite imagery, using a time series from 2000 and 2015 to identify habitat change dynamics, and through a survey of mammals using camera traps. These new data layers will be incorporated into the biodiversity assessment models and used to define priorities for future management and two biodiversity assessment and corridor management knowledge products will be developed.

183. Community level planting is undertaken by community planting teams. Seedling supplies will need to be scheduled to fit the planting plan with preference given to existing commercial nursery supplies and if necessary BCC community based nurseries. Planting will be supervised by the PPMO and District forest staff.

184. Disbursement for forest planting will be triggered through the annual plan approval process. Failure to inspect planting will lead to all forest planting in that Province being suspended with resources allocated to other provinces. The forest inspection will validate planting areas, species and quality of work, which if approved will release funds for the labor input. A further inspection at around 9 months will identify and or, validate maintenance work, the need for blanking or additional maintenance. This inspection report will trigger the release of funds for year one maintenance. Each year all sites will be inspected until the Projects maintenance support ceases. All site inspections will be further monitored independently as part of the Project M&E to ascertain and verify their accuracy, and to assess impact.

185. The additional financing will support communities in the two districts (Dakcheung and Phouvang) to pilot models for future upscaling into a REDD+ project proposal. The models will seek to restore and protect ecosystem services with a primary focus on increasing the stock of carbon within the two Kum Ban clusters of these districts. Carbon benefits will derive from avoided emissions from both deforestation and forest degradation due to increased protection, alternative land use models, and alternative uses of forest and non-forest resources.

186. The AF will support community based patrolling of 50,000 ha, and community afforestation and large scale afforestation within a private–public management partnership. Strengthening enforcement capacity will be provided at the Kum Ban and village levels for community-based forest protection with the involvement of law enforcement officials from Department of Forest Inspection (DoFI). The forest restoration activities include assisted natural forest restoration and enrichment planting with indigenous species and protection against free-range grazing.

187. The additional financing will support (i) measuring and monitoring carbon emission impacts – targeted reduction of 97,000 tonnes per year by 2026; and (ii) planning, demarcation and UXO removal.

3. Output 3: Livelihoods Improved and Small-Scale Infrastructure Support Provided in Targeted Villages

188. Under Output 3 of the BCC, on-demand livelihood and small scale infrastructure subprojects identified through participatory consultations, with supporting due diligence as required by both ADB and the Government will be supported. Each of the participating villages under the BCC funded grant will receive a block grant allocation [i.e., Village Development Fund (VDF)] for livelihood improvement purposes. The VDF will provide micro credit facilities to households to borrow for approved livelihood activities with repayments to the VDF with interest to generate a revolving mechanism.

189. The VDF is a decentralized financial instrument, managed by the villagers who elect a VDF Management Board or Committee. It operates on the basis of guidelines issued by the national project management office (NPMO). The establishment and sustainability of the revolving fund concept requires capacity development and technical support and the Project has made provision for this.

190. Other livelihood funds are allocated for the use of each village to develop and demonstrate new technologies and support home garden improvements. These funds will support extension and training as well as demonstration support and will be limited to project beneficiaries that will contribute to improved biodiversity in the Project area.

191. Further, the selected communes will receive small scale infrastructure support for each for the participating villages. The small scale infrastructure subprojects will be reprioritized following the mid-term review. The mid-term review found the current arrangement for prioritizing infrastructure projects to be unworkable and agreed with Government on the following change to the process. A more focused set of infrastructure priorities will be developed based on which more detailed design and supporting feasibility studies will be conducted. Special attention will be given to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

192. Under Output 3, the AF will focus on (i) agroforestry with pasture based grazing to remove cattle from forest margins while providing productivity gains and revenues from the agroforestry planting; (ii) agroforestry with cropping that seeks to integrate agroforestry and cropping in a mutually beneficial manner; and (iii) the carbonization of noncommercial wood from forest and land use change concessions for charcoal production. Agroforestry production for livelihood enhancement will be carried out on forest land with insufficient tree cover to regenerate naturally. Livelihood activities will be prioritized at the start of project through a participatory consultative process with due recognition given to considerations of female members and ethnic groups. Activities will be screened based on needs identified in village development plans. 420 additional households will receive cash and technical support to improve productivity and income from livelihoods under the AF.

193. The implementation of the community level livelihood activities will be undertaken through a contracted service providers. AF will not adopt the VDF/block grant modality that is implemented under the BCC grant financing.

4. Output 4: Project Management and Support Services Provided

194. Output 4 provides services for project management. Capacity building for NPMO, provincial project management office (PPMO) and district staff is provided for project administration, procurement, financial management, progress reporting, impact monitoring, social and environmental safeguards and contract management. Some project staff are from provinces and districts, and lack familiarity with ADB and government procedures. Therefore considerable capacity building is necessary to facilitate the smooth implementation of the project. The mid-term review found that the decentralized administrative capacity to be inadequate and after discussion with the Ministry of Finance it was agreed to recentralize the financial management function, whilst also building capacity at the Provincial level and once established enabling a limited step by step financial decentralization to be reintroduced.

195. The project supports the project management structure comprising of supervision by the NPMO based in MONRE in Vientiane, and implemented by provincially based PPMOs established within PONRE offices in participating provinces. The support includes refurbishment of premises, equipping of offices, provision of vehicles, as well as provisions for implementing the Project including travel allowances, per diems and office operational budgets. In addition, the Project finances the recruitment of grant implementation consultants to provide implementation support and access to technical expertise needed in implementing subprojects. This recognizes the current implementation capacity and the general lack of familiarity with ADB procedures particularly among provincial and lower level staff.

196. The AF will further strengthen project management through the provision of additional vehicles and equipment for field monitoring and supervision, technical support for REDD+, additional consultant inputs for identified technical expertise which will be incorporated within BCC grant implementation consultant contract and additional inputs for procurement support – to assist with the use of service providers for implementation of AF activities. These additional inputs will enable GOL to ensure full time commitment of staff to implement the BCC and AF programs.

197. AF will also support scaling up efforts to strengthen provincial and district level capacity, including construction/rehabilitation of the provincial project management offices (PPMOs) in Sekong and Attapeu provinces and district coordination offices (DCOs) in Phouvong and Dakcheung districts respectively. AF supports 1 provincial coordinator per province and two staff positions for each District, along with with REDD+, agro-forestry and small enterprise development specialists; the establishment of Kum Ban level 'working groups' for Forestry/REDD+, livelihood support and village enterprise development; monitoring social and environmental safeguards; and specific initiatives to ensure that the poor and ethnic minority groups participate equitably in subproject benefits.

C. Project Investment and Financing

198. The project is estimated to cost \$12.9 million (Table 15). Detailed cost estimates by expenditure category and detailed cost estimates by financier should be included in the Project Administration Manual (PAM).

Table 15. Project Revised Investment Plan (\$ million)

Item	Current Amount ^a	Additional Financing ^b	Total
A. Base Cost^c			
1. Institutional and community strengthening for biodiversity conservation corridors management and implementation of REDD+	0.94	0.50	1.44
2. Biodiversity corridors restoration, protection, maintenance and REDD+ readiness	3.92	3.85	7.77
3. Livelihoods and small-scale infrastructure	4.58	2.97	7.55
4. Project management and support	8.81	3.74	12.55
Subtotal (A)	18.25	11.06	29.31
B. Contingencies^d	2.20	1.84	4.04
C. Financing Charges During Implementation	0.00	0.00	0.00
Total (A+B+C)	20.45	12.90	33.35

^a Includes \$0.5 million taxes and duties which will be financed through ADB ADF grant funds.

^b Includes taxes and duties of \$1.19 million to be financed by the Strategic Climate Fund in compliance with para 9, OM H3/OP. The following principles were followed in determining the amount of taxes and duties: (i) the amount is within reasonable country thresholds; (ii) the amount does not represent an excessive share of the project investment plan; (iii) taxes and duties apply only to SCF-financed expenditures; and (iv) the financing of taxes and duties is relevant to the success of the project.

^c in mid-2010 for the ongoing Project and mid-2015 for the AF.

^d Physical contingencies for additional financing computed at 5% for civil works, consulting services, training, surveys and studies. Price contingencies for additional financing, taking into account a PPP exchange rate, have been computed at 1.9% in 2016, 2.2% in 2017, 1.9% in 2018 and 1.8% thereafter on foreign exchange costs and at 5.5% in 2016, 5.0% in 2017 and 4.5% thereafter on local currency costs.

Source: Asian Development Bank.

199. The government has requested a grant not exceeding \$12.84 million from the Forestry Investment Program to help finance the project. The government will finance the equivalent of \$0.06 million to cover staff secondments to assist with project implementation and resettlement costs. A portion of taxes and duties on civil works, services and vehicles and equipment will be financed from the ADB loan and grant proceeds. Contributions from beneficiaries will be in-kind in the form of labour for surveys, demarcation, reforestation and routine maintenance of proposed small-scale infrastructure. The revised financing plan is in Table 16.

Table 16. Revised Financing Plan

Source	Current		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank	20.00	97.8	0.00	0.0	20.00	60.0
Strategic Climate Fund ^a	0.00	0.0	12.84	99.5	12.84	38.5
Government	0.27	1.3	0.06	0.5	0.33	0.9
Beneficiaries	0.18	1.0	0.00	0.0	0.18	0.6
Total	20.45	100.0	12.90	100.0	33.35	100.0

^aUnder the Forest Investment Program financed by the Strategic Climate Fund. Administered by ADB.

Note: Bank charges related to operation of the imprest accounts will be financed from the respective grant proceeds.

D. Economic and Financial Performance

1. Project Benefits

200. The AF is designed to complement the four components of the BCC Project including: (i) institutional and community strengthening at village, district and provincial level; (ii) biodiversity corridor restoration and ecosystem services protection through improved forest patrols and reduced emissions from deforestation and forest degradation (REDD+); (iii) livelihood improvement for communities within the corridor through support for improved agricultural systems that reduce the need for slash-and-burn agricultural systems; and (iv) project management and support services.

201. The AF is expected to produce the following benefits:

- (i) A net reduction in emission of carbon dioxide (CO₂) induced by the five key drivers of deforestation and forest degradation to be addressed by the project, on average, in the amount of 97,000 tons per annum for a period of 30 years.
- (ii) About 420 households (1,600 individuals) in 5 Kum Bans will benefit directly from the support for more productive and sustainable agricultural systems, including improved livestock systems, perennial crop production, and non-timber forest products (NTFPs).
- (iii) Direct financial benefits to targeted communities in the form of incremental employment creation, estimated to be 160,000 labor days, for households and local communities from proposed investments in forest protection by patrolling (an estimated area of 50,115 ha), and reforestation (an estimated area of 350 ha), agroforestry combined with crops and livestock management (an estimated area of 1,100 ha).
- (iv) In addition to onsite benefits to the participating villages and village households, downstream communities are expected to benefit from enhanced ecosystem services generated through the actions of the direct beneficiaries. In particular, enhanced quality and quantity of water from the targeted forest areas overtime will benefit downstream users. This will enable them to increase productivity and avoid some of the costs currently incurred as a result of the irregular flow and polluted nature of the water supply.

202. The economic analysis provides a preliminary analysis on the viability of the proposed interventions based on the net emissions of CO₂ induced by addressing these five key drivers of change. The project includes a number of modules aimed at addressing the drivers of deforestation and forest degradation. Support in monitoring of carbon stocks will also be included in the project to serve as a monitoring and evaluation tool for the project in the short term and more importantly benefit long-term national implementation of REDD+ investment planning. The appropriate modules for each village will be decided through a consultative village cluster based assessment process. Descriptions of each module are given below. Individual investments will be selected based on a set of criteria, including financial viability parameters which will be assessed during project implementation.

203. **Agroforestry with livestock support.** Application of this module will demonstrate the use of an agroforestry–pastoral system that seeks to reduce forest degradation due to free range livestock grazing and improve the management of livestock and livestock productivity. The module will also rehabilitate grazing land reallocated to forest through the planting of appropriate multipurpose species that will provide fodder as well soil improvement through

nitrogen fixation and a long run gain in carbon storage. The module will involve: (i) consultation with livestock owners and others interested in participating; (ii) assessment of grazing land; (iii) site development and training; and iv) reforestation of former grazing lands.

204. Agroforestry with crop support. The module will demonstrate the use of an agroforestry – crop intensification system that seeks to restore soil fertility in areas used for rotational agriculture, especially on steep slopes. Each participating village will replace the 50% of its crop output from rotational agriculture with production from a agroforestry system based on economic multipurpose trees that provide fruit, fodder and fuel wood as well as soil stabilization and fertility restoration, together with crop production and livestock organized in alley cropping with a rotation of 1 crop of rice and two seasons of fallow/livestock. The module will involve: (i) a land use and land quality survey of the land used for rotational agriculture based on consultations with households that use rotational agriculture; (ii) preparation of an agroforestry development plan; (iii) implementation of agroforestry development plan; and (iv) rehabilitation of former rotational agriculture lands.

205. Carbonization of non-commercial wood for charcoal production. Non-commercial wood in hydropower and other land concession areas is often flooded by the reservoir or burnt prior to land preparation, resulting in increased carbon emissions. These noncommercial wood resources represent a potential opportunity to local communities with the added benefit of reducing carbon emissions by transforming such non-commercial wood into charcoal as a domestic or commercial fuel. The same applies to the biomass from primary or secondary forest that is cleared for agriculture. Both of these options for sources of woody biomass provide potential benefits for local communities as a source of cash income from selling charcoal. In the future there is the possibility of producing biochar, which can be incorporated into the soil to improve its structure and lock up the carbon, This module will involve: (i) a biomass resource assessment; (ii) identification of charcoal use options and strategy; (iii) retort construction and operation; and (iv) charcoal use and marketing.

206. Afforestation and forest rehabilitation. The module will support afforestation (mainly on land that is severely degraded), enrichment planting or assisted natural regeneration of degraded village forests. The module will cover support for village forests as well as other large forests. The activity will depend on the village agreeing to manage newly enriched forests and other forest areas under their control. The module will involve: (i) a needs assessment which will also include assessment of the potential for large-scale afforestation; (ii) training and preparation for forest enhancement; (iii) implementation of afforestation or rehabilitation; and (iv) monitoring and evaluation. In the case of large-scale forests, the module will also involve arrangements with joint venture partner such as a hydropower operator.

207. Forest Protection. This module will assist villagers to protect and patrol their areas of forest with high carbon stocks and other economic land, and where required, village forest land. The module will involve: (i) needs assessment for village patrols; (ii) training and preparation of patrol teams; and (iii) monitoring and evaluation.

208. The main assumptions for the economic analysis of CO₂ emission reduction include:

- (i) The project life is 30 years including a four-year project implementation period.
- (ii) Carbon sequestration reaches a steady state 10 years after the start of project implementation and is expected to continue beyond the project life. However, the discounted value beyond 30 years will have little, if any, impact on the project's economic viability.

- (iii) Forest rehabilitation and protection is based on participation of the local community in both protection and reforestation with payment from the project for that work. These costs are a financial benefit to the community but an economic cost to the project.
- (iv) Labor inputs provided by the households are charged at the market rate.
- (v) The main output value included the value of the carbon sequestered by the protected and rehabilitated forest, with a value of \$10 per ton of CO₂ equivalent.
- (vi) All values are expressed in constant 2015 prices.
- (vii) All costs and benefits are expressed in the *world price level numeraire*. For non-traded goods and services, a standard conversion factor (SCF) of 0.9 is used for conversion of financial to economic values. For rural labor, a shadow wage rate factor (SWRF) of 0.81 is applied, except for patrolling activities an SWRF of 0.9 is used since the willingness to undertake the patrolling labor is limited (as per the results of stakeholder consultation).
- (viii) Taxes and duties are excluded from the economic prices.
- (ix) A discount rate of 12 percent is used as representing the opportunity cost of capital.

209. The estimated cost of proposed interventions is \$12.84 million in financial prices and \$11.37 million in economic prices. Table 17 outlines the financial and economic cost profile. It is important to note that the economic analysis includes all costs presented in Table 17, except for (i) carbon monitoring and (ii) capacity building and implementation support, from which only 50% and 10% of the line item costs are respectively used. Therefore, in effect total economic costs to be included in the EIRR estimation is \$6.98 million. The key reason for this prorated cost inclusion of these two cost items is to ensure that the economic cost stream only carries those costs that are directly attributable to attaining corresponding benefits. Moreover, a large part of these costs is for capacity development, the benefits of which are not readily quantifiable. Annual operations and maintenance (O&M) cost is estimated at \$0.24 million in financial prices and \$0.21 million in economic prices, based on an estimated 3% of direct investment (financial) cost and its economic cost equivalents.

Table 17. Economic Costs

Items	Financial Budget (\$'000)			Economic Budget (\$'000)					Economic Cost for EIRR Estimation
	Total budget	Rural Labor Component	Non-labor Component	Total budget	Rural Labor Component	SWRF	Non-labor Component	SCF	
Carbon monitoring	2,092.3	418.5	1,673.8	1,845.4	339.0	0.81	1,506.4	0.90	922.7
Planning, boundaries & UXO	441.3	88.3	353.0	389.2	71.5	0.81	317.7	0.90	389.2
Agroforestry and cropping	1,534.9	460.5	1,074.5	1,340.0	373.0	0.81	967.0	0.90	1,340.0
Agroforestry and livestock	2,308.7	692.6	1,616.1	2,015.5	561.0	0.81	1,454.5	0.90	2,015.5
Large-scale afforestation	585.4	292.7	292.7	500.5	237.1	0.81	263.4	0.90	500.5
Community afforestation	154.5	77.3	77.3	132.1	62.6	0.81	69.5	0.90	132.1
Biochar	78.0	31.2	46.8	67.4	25.3	0.81	42.1	0.90	67.4
Patrolling	1,375.1	825.1	550.0	1,237.6	742.6	0.90	495.0	0.90	1,237.6
Capacity building and implementation	4,177.5	0.0	4,177.5	3,759.8	0.0	0.90	3,759.8	0.90	376.0
Total Investment	12,747.8	2,886.1	9,861.8	11,287.5	2,412.0		8,875.6		6,981.1

SCF = standard conversion factor; SWRF = shadow wage rate factor

210. **Quantified Benefits.** The main benefits will be carbon sequestration and climate change mitigation. It is estimated that proposed interventions to address five key drivers of deforestation and forest degradation will generate a net reduction in CO₂ emission of approximately 97,000 ton per year. Using the assumed economic price of \$10 per ton of CO₂, the benefits will be, on average, \$0.97 million per year for the first ten-year period, and \$1.44

million per annum for the thirty-year period. Summary annual CO₂ emission⁷ is outlined in Table 13 and the estimate benefit stream is in Table 18.

211. The economic value of carbon, in many recent studies has been assumed to be its market price as reflected in the well-established carbon markets of Europe. However, recent turmoil in these markets, suggest that the economic value of carbon sequestration is more complex than the simple market price. According to a World Bank study, the price of reducing global warming to within 2°C in 2030 is estimated to be between US\$80/tCO₂ equivalent and US\$120/tCO₂ equivalent.⁸ Nocera and Cavallaro (2012) compared various alternative approaches for estimating the economic value of CO₂ emission reductions including CO₂ market-based prices, and prices based on future consequences through the assessment of either damage costs or avoidance costs.⁹ They conclude that the use of market prices is unsuitable unless very short temporal horizons are being considered since they fail to take account of long-term impacts. Damage cost and avoidance cost approaches provide a more theoretically sound approach and have been used in a range of studies. However, both tend to produce a wide range of estimated values, albeit with a lower bound value of about \$20 per ton of CO₂ equivalent. Therefore for the current analysis, the economic value of CO₂ is taken at a conservative value of just 50% of this lower bound, i.e., \$10 per ton.

212. **Total benefits** will depend on the specific conditions in each area, and could include climate change mitigation and carbon sequestration, NTFP benefits, improved biodiversity, and soil and water conservation. Values for the first two of these can be readily monetized, whereas values for the latter two are more difficult to determine without detailed surveys for such aspects as the willingness-to-pay for ecotourism facilities, and payments for water quality services. Maps of the village areas with contours are not available and so it is not possible to determine the proportion of each village that falls in different slope classes and estimate the magnitude of soil loss with and without the project.

213. **Unquantified Benefits.** Non-timber forest products (NTFP) may include bamboo, rattan, fruit and resins. Other products, such as fuel wood and medicines may not be marketed, but will be used by local communities directly and can therefore be priced at the market value for the product that they substitute. However, their total value is likely to be small in comparison with carbon sequestration benefits unless some specific subprojects are included for promoting NTFPs. They have therefore been excluded from the current estimates. Biodiversity values may be significant. These can be expressed in a number of ways, including reduction in the numbers of endangered species, the levels of threat to important species and possibly the return of species thought to have been locally extinct. In the longer term, these achievements may increase the value of ecotourism which will bring financial returns, as will the possibility of bio-prospecting. Soil and water conservation values are site specific, since they depend on the proportion of an upper river basin that is protected from soil erosion and the current land-use, which determine both the quantity of the soil loss that can be avoided and the scale of the overall impact on the seasonal distribution, quality and quantity of water supply within the river basin.

⁷ Detailed estimates for CO₂ emission reduction is in the Annex to this document.

⁸ World Bank and Ecofys, 2015. State and Trends of Carbon Pricing. Washington D. C.

⁹ Nocera, S. and F. Cavallaro. 2012. *Economic Evaluation of Future Carbon Dioxide Impacts from Italian Highways*. EWGT 2012 15th Edition of the Euro Working Group on Transportation, International Science Conference, Paris.

214. Estimation of the EIRR and ENPV is shown in Table 18. The proposed investments in addressing the five key drivers of deforestation and forest degradation are assessed to be economically viable with an EIRR of 15.1%.

215. **Sensitivity analyses** were conducted to test the robustness of the proposed investment. Tested variables include (i) a 10% cost increase; (ii) a 10% benefit reduction; (iii) a 10% cost increase combined with a 10% benefit reductions; and (iv) a one-year lag in benefits. The results of the sensitivity analyses are also in Table 18. Switching values and sensitivity indexes were also estimated for the key variables. The investment remains economically viable when costs are increased 10% or revenues decreased by 10%, when both of these changes are combined, or with a one-year benefit lag. In particular, EIRRs of the tested sensitive cases are in the range of 12.8-14.3%, above the threshold of 12%. However, the switching values indicate that a 29.0% cost increase or a 22.5% benefit decrease would affect the economic viability of the proposed investments. The sensitivity indexes— 3.4 for cost increases and 4.4 for benefit reduction—suggest that while the proposed investments are fairly robust, the risk of ENPV being reduced to zero or negative is high unless cost efficiency and timely benefit realization are under close monitoring.

Table 18. Estimated EIRR and Sensitivity Analysis

Base Case Analysis						Net Cash Flows in Sensitive Cases				
Year	Costs			Benefits	Net Cash Flow	10% cost increase (1)	10% benefit reduction	(1) and (2) combined	1 year benefit lag	
	Investment	O&M	Total							
2016	0.70	0.00	0.70	0.00	(0.70)	-0.77	-0.70	-0.77	-0.70	
2017	2.09	0.00	2.09	0.11	(1.99)	-2.20	-2.00	-2.21	-2.09	
2018	2.79	0.00	2.79	0.24	(2.56)	-2.84	-2.58	-2.86	-2.69	
2019	1.40	0.00	1.40	0.40	(1.00)	-1.14	-1.04	-1.18	-1.16	
2020	0.00	0.00	0.00	0.61	0.61	0.61	0.55	0.55	0.40	
2021	0.00	0.21	0.21	0.86	0.65	0.63	0.56	0.54	0.40	
2022	0.00	0.21	0.21	1.12	0.91	0.89	0.80	0.78	0.65	
2023	0.00	0.21	0.21	1.38	1.17	1.15	1.03	1.01	0.91	
2024	0.00	0.21	0.21	1.59	1.38	1.36	1.22	1.20	1.17	
2025	0.00	0.21	0.21	1.70	1.49	1.47	1.32	1.30	1.38	
2026	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.49	
2027	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2028	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2029	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2030	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2031	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2032	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2033	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2034	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2035	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2036	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2037	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2038	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2039	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2040	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2041	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2042	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2043	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2044	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
2045	0.00	0.21	0.21	1.72	1.51	1.49	1.33	1.31	1.51	
ENPV	5.17	0.93	6.10	7.59	1.49	0.88	0.73	0.12	0.63	
EIRR					15.1%	13.7%	13.6%	12.2%	13.2%	
						SV	24.5%	19.7%	EIRR reduced by	
						SI	4.1	5.1	18.9%	12.4%

EIRR = economic internal rate of return; ENPV = economic net present value; SI = sensitivity indicator; and SV = switching value.

2. Sustainability Issue

216. Patrolling of the protected forests and maintenance of the replanted areas for the first five years will require ongoing expenditure if the investment is to be sustainable. Responsibility for ensuring that these activities are undertaken, including provision of the necessary finances, will rest with the local government, at provincial, district or Kum Ban level. The costs have been estimated at about \$0.24 million per annum in financial prices although they are likely to reduce slightly once trees reach canopy closure. Discussions with the operators of the hydro-power plants in the project area indicate that protection and restoration of forest cover in the water catchments would bring substantial benefits in terms of reduced siltation of the reservoirs and damage to turbine blades from suspended solids in the water. It is expected that GOL will seek to secure payments for these environmental payments (PES) and the project will provide the opportunity to evaluate the benefits and set payments at an appropriate level, which are expected to be sufficient to cover the on-going O&M costs. It is suggested that a covenant be included in the financing agreement to promote the government to establish a PES mechanism to offset allocations from the State budget for the associated maintenance work.

E. Environmental and Social Impacts

1. Context

217. The purpose of this section is to provide an overview of the status and adequacy of the safeguard policies and measures undertaken for the BCC project, and identify what additional safeguard provisions are required to facilitate the change in scope of the BCC project to accommodate additional financing from the additional FIP project component. The districts identified as priority for the FIP investments are in the upland parts of the provinces and districts and have a very high proportion of ethnic groups in the population.

218. There are clear parallels and similarities between the BCC project and the objectives and activities of the Forest Investment Program. The objective of the BCC project is to enhance the capacity and support specific initiatives of Indigenous Peoples and Local Communities to strengthen their participation in forest management and protection. The intended impact of the BCC Project is sustainable forest ecosystems benefiting local livelihoods in the biodiversity corridors of Lao PDR, while the intended outcome is sustainably managed biodiversity corridors in Lao PDR. The expected outputs from the BBC project include:

- (i) Provision of security of forest access to poor households and ethnic minority groups for collective management of forest resources;
- (ii) The restoration of degraded forest lands with tree planting of natives species and agroforestry models with improved sources of non-timber forest products;
- (iii) Improved livelihoods and in come by enhancing small scale infrastructure; and
- (iv) Institutional and community strengthening for biodiversity corridor management.

219. Whilst it is clear that the activities envisaged for the AF program are to be aligned with the objectives of the BCC project, they must also conform with the FIP Design Document, which specifies that all the activities undertaken under the FIP component of the project will adhere to the following principles:

- (i) respect for Indigenous and local context in the pilot countries;
- (ii) full and effective participation of indigenous peoples groups and local communities (IPLCs);

- (iii) generation of climate mitigation and adaptation benefits in line with improved livelihood opportunities; and
- (iv) streamlined, fast-track and low cost access to grant funding.

220. In this context AF activities should be directly relevant to REDD+ and climate change mitigation/adaptation issues that concern IPLCs at the regional and global levels, and should demonstrate the potential for significant impact on IPLC capacities and networks in the regional. Both the BCC and the AF addresses 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, preferably through agroforestry. Land use planning for village may cater to both initiatives separately or combine them. The idea is to provide more productive and remunerative livelihood and income generation systems to reduce areas used for shifting cultivation and allow secondary forest to continue growing and sequester carbon and restoring forest cover on denuded land where co-benefits from biodiversity, water conservation and carbon sequestration are secured.

221. The BCC project is also working on reforestation of degraded lands. The BCC in the design phase in 2010 envisaged that “activities to identify viable reduced emissions from deforestation and forest degradation and conservation and enhancement of carbon stocks (REDD/REDD+) pilot sites will enable the project to leverage incremental funding for forest protection and restoration (an additional 16,100 ha) from funds specifically set up to promote REDD+.

F. Monitoring and Evaluation

1. Project Performance Monitoring

222. Monitoring and evaluation is an important function intended to improve project management, since it helps to ensure that the project is implemented in accordance with its operation plan and that any slippages are corrected. To this end, upon grant approval, the BCC GIC team will organize a project training workshop to familiarize persons involved in its management with procurement and disbursement procedures, etc.

223. Once the AF project has commenced Department of Forest Resource Management (DFRM) will be responsible for project external monitoring/evaluation, although, initially, the BCC National Coordination Unit will perform this task. A project benefit monitoring and evaluation (PBME) system will be developed and implemented by the NPMO with assistance from the BCC Grant Implementation Consultant (GIC). The PBME will collect information at subproject level to identify the current socio- economic conditions of target beneficiaries and to assess the impact of the subprojects. The PBME will be based on measurable inputs, outputs and outcomes to be collected during baseline surveys and throughout project implementation.

224. The project will also provide support for the development and operational support for a national level Monitoring and Evaluation Section being established within MONRE's DFRM. This will comprise technical support to the design of a project monitoring and information system, equipment and networking facilities to link with the participating districts, and training in planning and performance monitoring. It will also include resources to operate a project impact monitoring system for the numerous development initiatives currently under implementation. Senior DFRM, provincial and district officers from the various departments involved, who will be responsible for project monitoring/evaluation, will receive adequate training, at the end of which DFRM will establish its own monitoring/evaluation arrangement to conduct half-yearly missions.

225. The AF National Coordinator, in collaboration with the BCC GIC, will prepare quarterly and annual progress reports that will indicate the status of physical implementation of the project, procurements made, the level of expenditure execution, difficulties faced in project implementation and recommended corrective measures to improve project management. Likewise, the AF implementation teams at the provincial and district levels will, in collaboration with their BCC counterparts, prepare an annual work plan and budget each year, for submission to DFRM monitoring/evaluation services and the ADB for compliance purposes.

2. Compliance Monitoring

226. The government and MONRE have agreed with ADB on certain covenants for the BCC Project, which will apply to the AF. These are set forth in the grant and project agreements including the following: (i) only subprojects that have been pre-screened either during preparation or by an approved specialist and subsequently approved by ADB shall be financed by ADB grant funds; (ii) the government will ensure that adequate funds are allocated for the periodic maintenance of infrastructure developed under the Project through provincial budgets to maintain the infrastructure in functional order; and (iii) the government will also ensure that a grievance mechanism is established for affected people in the participating districts.

227. ADB will monitor compliance with those covenants throughout project effectiveness and implementation via regular review missions, quarterly progress reports submitted by the NPMO, and review of project accounts and procurement procedures.

3. Safeguards Monitoring

228. The AF will support the recruitment of Safeguard Monitoring entities from domestic universities and institutes, to ensure that all recommendations and mitigation measures under the Environmental Monitoring Plans (EMPs), the Indigenous Peoples Plans (IPPs), and the Resettlement Plans (RPs), of each subproject are being implemented in accordance to the plans – and this includes gender and social dimensions monitoring.

APPENDIX 1: CRITERIA FOR SELECTION OF SITE FOR FIP INVESTMENTS WITHIN THE BIODIVERSITY CORRIDOR

A. Introduction

1. The Forest Investment Program (FIP) Investment plan provides a general concept for the proposed FIP investments, which should be followed as much as possible, since it has been approved by the FIP Steering Committee, the Government of Lao PDR and by the Asian Development Bank (ADB).

2. The proposed sub-project to be financed with FIP funds, entitled Protecting Forests for Ecosystem Services, envisaged the following measures for reducing net emissions:

- about 420 households (about 10% of HH within the corridor) gradually giving up the use of swidden agriculture over the remaining period of the BCC to end 2018 starting with about 80 ha in the first year and increasing by about 80 ha annually over the project to end 2018 with emissions avoided on a total of about 400 ha. Emission reductions would be achieved from reduced burning of forest and sequestration in the secondary forest that would regrow in former cleared forest. These households would be supported to adopt more sedentary farming practices and agroforestry systems to maintain soil fertility;
- about 50,000 ha of forest that is currently under threat, would be protected and any conversion avoided, that would give reductions in emissions from the deforestation and sequestration by the forest that is saved. The protected forest could be either village/community forest areas designated through participatory land-use planning (PLUP) in selected villages and/or state managed Protection Forest areas employing villagers to patrol and protect an area of forest; and
- about 1,450 ha of bare land or very degraded forest (<10% crown cover) would be restored with indigenous species that would sequester increasing amounts of carbon over time and would bring co-benefits of improving habitat connectivity and improving soil and water conservation.

3. These measures combined were estimated to reduce net emissions by about 95,000 tons CO₂eq per year over the duration of the project.

B. Proposed Selection Criteria

4. Criteria for site selection:

- (1) The area(s) should have the potential for emission reductions of around 95,000 tons CO₂eq per year over the period to end 2020.
- (2) The area(s) should have around 1,000 ha of “forest” being used for swidden farming.
- (3) It should have about 10 – 20 villages.
- (4) The areas should have 50,000 ha or more of high value conservation forest under threat from infrastructure, mining and/or agricultural development.
- (5) The area should include at least one hydro-power project.
- (6) The area should have 300 ha or more of heavily degraded forest or grassland that if restored would improve habitat connectivity and improve soil and water conservation.
- (7) The area should have easily defined boundaries.
- (8) The area should be approved/supported or have no objection by the military.

5. It is unlikely that there will be a site that meets all these requirements, but if there are more than one; e.g. parts of Kaleum, Dakcheung or Phouvong Districts seem the most likely, they should be ranked, perhaps on a scale from 0 – 5 for each criterion (0 does not meet, 5 fully meets) and the preferred site would be the one with the highest score.

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