Forest Carbon Partnership Facility (FCPF)

Readiness Preparation Proposal (R-PP)

Lao P.D.R.

Date Submitted: 11 October 2010

Table of Contents

LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AFOLU	Agriculture, Forestry and Land-use
AIT	Asian Institute of Technology
ALOS	Advanced Land Observation Satellite
ANR	Agriculture and Natural Resources
BAU	Business as Usual
BEF	Biomass Extension factor
BCI	Biodiversity Corridor Initiative
CARE	Christian Action Research and Education
CCBA	Climate, Community and Biodiversity Standards
CCO	Climate Change Office
CDM	Clean Development Mechanism
CLiPAD	Climate Protection through Avoided Deforestation
CMP	Conference (serving as) Meeting of the Parties
COP	Conference of Parties
CTA	Chief Technical Adviser
CW	Controlled Wood
DAFO	District Agriculture and Forestry Office
DBH	Diameter at Breast Height
DD	Deforestation and Degradation
DDG	Deputy Director-General
DFID	Department for International Development (UK)
DIMEX	Department of Import and Export, Ministry of Commerce & Industry
DOE	Designated Operational Entities
DOF	Department of Forestry
DOFI	Department of Forest Inspection
ESMF	Environmental and Social Management framework
EU	European Union
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
FAO	Food and Agriculture Organization (of the United Nations)
FCCA	Forest Cover Change Assessment
FCPF	Forest Carbon Partnership Facility
FDD	Forest Deforestation and Degradation

FDI	Foreign Direct Investment
FIDS	Forest Inventory database System
FIMP	Forest Information Management Program
FIPD	Forest Inventory and Planning Division (Department of Forestry)
FIS	Forest Information System
FIRMS	Forest Inventory and Resource Management System
FLEGT	Forest Law Enforcement, Governance and Trade
FM	Frequency Modulated (radio)
FMP	Forest Management Plan
FRA	Forest Resource Assessment
FSC	Forest Stewardship Council
FSIP	Forest Strategy Implementation Project
GHG	Greenhouse Gas
GIS	Geographic Information System
GOL	Government of Lao PDR
GTZ	(Deutsche) Geseitschaft fur Technische Zusammenarbeit
IEC	Information, Education and Communication
IFM	Independent Forest Monitoring
IPCC	Intergovernmental Panel on Climate Change
ISP	Integrated Spatial Planning (Project)
JICA	Japanese International Cooperation Agency
KFW	Kreditanstalt fur Wiederaufbau
LECS	Lao Expenditure and Consumption Survey
LFNC	Lao Front for National Construction
LIDAR	Light Detection and Ranging
LMRP	Land Management and Registration Project
LSFP	Lao Swedish Forestry Program
LULUCF	Land-use, land-use Change and Forestry
LUPLA	Land-use Planning and Land Allocation
MAF	Ministry of Agriculture and Forestry
MEM	Ministry of Energy and Mines
MFA	Ministry of Foreign Affairs (Finland)
MODIS	Moderate Resolution Imaging Spectro-radiometer
MOF	Ministry of Finance
MOIC	Ministry of Industry and Commerce
MRC	Mekong River Commission
NA	National Assembly
NAFES	National Agriculture and Forestry Extension Service
NAFRI	National Agriculture and Forestry Research Institute
NCF	National Conservation Forest
NEC	National Environment Committee
NFI	National Forest Inventory
NGD	National Geography Department
NGO	Non Government Organization
NLMA	National land Management Authority
NPF	National Production Forest
NRM&CC	Natural resources Management & Climate Change
NSCCC	National Steering Committee on Climate Change
NSEDP	National Socio-Economic development Plan
NSO	National Statistics Office
NTFP	Non Timber Forest Product
NT2	Nam Ngeum 2 (Hydro-power plant)
NUOL	National University of Laos
PAFO	Provincial Agriculture and Forest Office
PAREDD	Participatory Land-use and Management for REDD+
PFA	Production Forest Area
PLUP	Participatory Land-use Planning
PM	Prime Minister
PSP	Permanent Sample Plot
RECOFTC	Regional Community Forest Training Centre

REDD+	Reduced Emissions from Deforestation and Degradation
REL	Reference Emission Level
R-PP	Readiness Preparation Proposal
RSC	Remote Sensing Centre
RSR	Root Shoot ratio
SEIA	Social and Environmental Impact Assessment
SEM II	Strengthening Environmental Management (Phase) II (Project)
SIDA	Swedish International Development Agency
SPC(P)	Stakeholder Participation and Consultation (Plan)
SPOT	Satellite Pour l'observation de la Terre
SNRMPEP	Sustainable Natural Resources Management and Productivity Enhancement project
SUFORD	Sustainable Forest and Rural Development (Project)
TF	Task Force
TSC	Technical Service Unit
UAV	Unmanned Aerial Vehicle
URDP	Uplands Rural development project
UNFCCC	United Nations Framework Convention on Climate Change
VFI	Village Focus International
VHR	Very High resolution
VPA	Voluntary Partnership Agreement
WCS	Wildlife Conservation Society
WERI	Water and Environment Research Institute
WREA	Water Resources and Environment Administration
WWF	Worldwide Fund for nature

General Information

1. Contact Information

National REDD+ Focal Point:

Name	Mr. Oupakone Alounsavath
Organization	Planning Division, Department of Forestry
Title	Director of Division
Address	Ban Thaddum, Vientiane, Lao PDR
Telephone	+856 21 219 561
Fax	+856 21 219 561
Email	dofadm@gmail.com
website	

2. R-PP Development Team

Names, organizations of authors and contributors to the R-PP

Name	Organization
Dr. Silavanh Sawathvong	D-G Department of Forestry,
Khamphay Manivong	DD-G Department of Forestry
Oupakone Alounsavath	Director Planning Division, DOF.
Somchay Sanonty	Director, Forest Inventory & Planning Division, DOF
Khamsene Ounekham	Planning Division, DOF
Nori Kitamura	CTA, FSIP, JICA/SIDA
Georg Buchholz	CTA, CLIPAD, GTZ
Majella Clarke	SUFORD Project, WB/MFA Finland
Kirsten Ewers	SUFORD Project, WB/MFA Finland
Noriko Ishitobi	FSIP, JICA/SIDA
Dr. Sithong Thongmanivong	Director, Centre of NRM & CC, FOF, NUOL
Alastair Fraser	Independent R-PP Consultant
Dietmar Brautigam	Independent R-PP Consultant
Alexander Horst	Independent R-PP Consultant
Pete Watt	Independent R-PP Consultant

3. Executive Summary

The current arrangements with a REDD+ Task Force and a REDD+ focal person within DOF have been adequate to bring the process to the current position, but major changes are needed to effectively implement the Readiness Implementation phase. High level cross-sector coordination and policy guidance will be provided by the National Environment Committee, the members of which are at Minister or Vice-Minister level. In order to engage all sectors involved in REDD+ and related Climate Change issues, membership of this Committee will be broadened to include other sectors not currently represented, especially the National Land Management Authority.

The REDD+ TF will be strengthened by additional members from other key ministries, including Finance, Planning and Investment, Mines and Energy and from the Department of Forest Inspection in MAF. The TF will be supported by a new REDD+ Office with full-time staff. This Office will have several tasks; including (i) implementation of the Readiness activities funded by the FCPF, (ii) coordinating and monitoring other REDD+ related activities by maintaining a register of all projects, whether funded by donors or by credits from the voluntary market, (iii) monitoring international negotiations and providing material support for Lao PDR delegates attending international meetings (iv) organizing stakeholder coordination and implementing the SPCP, (v) preparing a draft decree for submission to the TF and NEC on REDD+ , that will lay down, among other things, who can promote REDD+ activities; any conditions that will apply to participation by stakeholder groups; and the principles to be adopted for benefit sharing; (vi) prepare detailed proposals for how different forms of REDD+ related funding will be managed and distributed; (vii) Develop a carbon Registry.. .

The REDD+ Office will be empowered to establish a number of Technical Working Groups, including; REL, MRV, Stakeholder Consultation, Land-use Planning, Carbon Registry, REDD+ Strategy, and others as required. These working groups will provide technical support and advice to the Office as needed and in particular for the preparation of Annual Work Plans to be prepared by the Office, that will be submitted to the Task Force for endorsement to the NEC. The REDD+ Office will also support the establishment of a similar structure at Provincial level, in those Provinces where REDD+ activities are taking place or are planned for the Readiness phase.

Two stakeholder consultation workshops have been held during the preparation of the R-PP and a number of important recommendations were made, in particular that REDD+ should be considered as a mechanism for promoting multiple benefits, Pilot activities should be incorporated into government programmes/ donor projects and should not be “stand-alone”. Awareness raising is essential and later training local communities in monitoring carbon stocks and other indicators necessary for REDD+ + will help to improve awareness and understanding. Capacity building is necessary among all stakeholder groups and should not be restricted to government only while ways need to be found to strengthen cross sector coordination.

The stakeholder participation and consultation plan takes account of the relatively unique circumstances that prevail in Lao PDR, where about 70% of the people live one hour or more travel time from their District town. There are more than 10,000 villages across the country, most quite small and many of which are not accessible by motorized vehicle. The Lao government uses the term Ethnic groups and the Lao Front for National Construction (LFNC) is the organization charged with implementing the Party and Government’s ethnic policy, which recognizes 49 ethnic groups from

four ethno-linguistic families, many of which do not have written language. During the Readiness phase consultation at community and village level will only be feasible for villages where field activities are being piloted.

Each of the four major stakeholder groups, that cover government, civil society, the private sector and donor partners has a very large number of sub-groups with specific interests, and these will be brought into the process through the use of focus groups. An example is mining companies that clear forest, but may need a lot of convincing to take account of the impact of their activities on CO_2 emissions. The **Goal** of the SPCP is to achieve collective ownership of the process to develop strategies that reduce emissions through deforestation and degradation (REDD+) and to support conservation, sustainable forest management, and the enhancement of forest carbon stocks (the + in REDD+ plus). The **Purpose** is to develop a system of consultation to ensure that **all** stakeholder groups have a better understanding of REDD+, how it relates to Lao PDR, what roles, responsibilities and opportunities they have within Lao PDR's efforts and encourage a sense of ownership of the REDD+ measures to be adopted.

The major issues that are foreseen as requiring substantial consultation are; carbon ownership in relation to land-tenure, benefit sharing arrangements, law enforcement and related governance issues, especially concerned with awarding of licenses and concessions and the establishment of credible baselines and RELs. The SPCP links the awareness raising and consultation processes closely to the pilot activities which will provide opportunities to discuss issues in specific circumstances rather than in very general terms.

Chapter 2a discusses recent trends in land-use and points out that there have been massive inflows of FDI in the past few years that have led to high demand for land for cash crops and plantations. The national and provincial governments do not have the capacity to undertake comprehensive social, economic and environmental appraisals of proposals so that concessions have often been awarded in forest areas, which is in contradiction of the law that bans conversion of forest except in special circumstances of national importance.

There is a wide range of forest resource tenure rights, including state property; communal rights, private assigned to individuals, corporate bodies and non profit organizations; and open access. As a result, several different stakeholders may have rights and interests, and consequently entitlements to REDD+ benefits. The entitlement of ethnic groups and local communities to REDD+ benefits presents a particular problem because they typically do not hold registered title and enforceable rights over the land they manage.

The Forest and the Wildlife and Aquatic Resources Laws have recently been revised and promulgated and provide a good regulatory framework, but many officials at lower levels in Province and District are not familiar with the provisions, so that enforcement is generally weak. Illegal logging is a serious problem despite many provisions in the Law that could be used to control it. The government has created a new Department of Forest Inspection charged with dealing with this problem, but the staff are still under training and it suffers from sever budget limitations. The Forest Department is being supported by several donors to implement sustainable management of production and conservation forests and 6 Production Forest Management Units have achieved full FSC certification standards.

The main drivers of deforestation have been identified as conversion to agricultural land and plantation crops (including timber trees and rubber), by commercial

companies and smallholders, and for mining and infrastructure development. There has also been and will continue to be expansion in hydro-power generating capacity, which has resulted in the inundation of substantial areas of forest. The drivers of degradation are primarily illegal logging and shifting cultivation. The latter is considered as degradation so long as it is done on a rotation basis and there is a fallow period with secondary forest, so that forest stock is reduced, but not forest area. The total annual emissions from deforestation and degradation is estimated to be around 51 million tonnes CO_2 annually, split almost equally between deforestation and degradation. (see Chapter 2a Table 2)

The REDD+ strategy will be developed in detail during the Readiness phase, and will include both the instruments that will be used for implementation (institutions, regulations, information and financial) and a wide range of field actions. During the Readiness phase as many as possible of the potential actions will be field tested. In accordance with the recommendations from the stakeholder consultation, these field activities will be either undertaken by large donor funded projects aimed specifically at REDD+ or will be undertaken by providing additional funding to projects that are dealing with closely related issues, that could incorporate REDD+ specific activities within their overall scheme. (An example is a project that is supporting land-use planning, where some additional funding could enable it to assess carbon stocks and incorporate emissions reduction measures into the land-use zoning and planning to avoid the kind of problem referred to above of misallocation of forest for concessions)

The options for REDD+ field activities are discussed for the main drivers of deforestation and for degradation as well as options for regeneration and restoration of degraded forest. The drivers of deforestation and the potential solutions are largely outwith the control of the forest sector and will therefore depend heavily on the support and cooperation of a number of other agencies and departments at national, provincial and district level as well as private sector and local communities, and will primarily focus on land-use planning and the valuation of carbon stocks, with a possible policy measure of charging developers for any carbon stocks that are destroyed. Mining and Hydro-power utilities are bound by Concession Agreements that include environmental safeguards, but these are not enforced at present, and an important option is to establish the degree to which forest loss and emissions can be reduced through the introduction and enforcement of safeguards. The drivers of degradation are more directly under the control of the forest authorities and DOF and DOFI will implement a number of activities aimed at reducing illegal logging and reducing emissions from shifting cultivation through the provision of alternative livelihood systems that also tackle poverty.

The REDD+ Implementation arrangements will develop the instruments needed to support REDD+ activities whenever a new international protocol is agreed. The performance of the institutional arrangements used for the Readiness phase will be evaluated and refined and then rolled out gradually nationally to provinces that have not been involved in pilot activities. A REDD+ Decree will be issued by PM at an early date to provide clarity related to key REDD+ issues, in particular ownership of carbon rights, the obligation to compensate government for carbon stocks that are liquidated, should this be adopted as policy, the benefit sharing system, financial management and distribution mechanism, how REDD+ activities are to be developed and sponsored and which organizations, groups and individuals are eligible to participate in REDD+ activities funded both from national and international sources and the voluntary market. There are a number of options for management of future REDD+ funds, and these will be evaluated to determine the most suitable long-term arrangements bearing in mind the multiple sources of funds, the need for beneficiaries at all levels down to villages to receive their due in a timely manner. The

possibility of establishing a new and special REDD+ fund will be examined in detail at an early stage during implementation through discussions with the Ministry of Finance and other stakeholders. Carbon tenure and benefit sharing are closely related issues and although certain principles have been discussed and generally agreed, the practicality of benefit sharing under different circumstances will need to be thoroughly tested during the pilot activities. The establishment and management of a carbon registry is closely linked to the requirements for MRV. Capacity building is essential and will be undertaken across the full spectrum of stakeholders.

The social and environmental impacts are difficult to enumerate at this stage as no decisions have been taken on what activities will be conducted where, and who will be involved. As the design of specific pilot activities is developed an SEIA will be undertaken and an ESMF developed for each to ensure that any adverse impacts are avoided or adequately mitigated. As a first step a comprehensive stakeholder analysis will be undertaken.

A reference emission level has been developed using a development model to assess the likely changes in emissions from 2011 to 2015. This shows a slow decline in emissions from an estimate of around 51 million tonnes CO_2 in 2010 to around 42 million tonnes in 2015, but it is not a linear decrease as a substantial expansion in the area cleared for hydro-power is expected in the next few years. The model estimates are very dependent on the many assumptions that are made, which have been necessary due to lack of good and complete data. A sensitivity analysis suggests that the estimate of total emissions is most sensitive to the assumed value of the average growing stock at the start of the period (2002), with a 10% change in the assumed value changing the estimated emissions by between 2% for poorly stocked forest and 8% for medium density forest.

The GoL has opted for REDD+ which increases the complexity of the required MRV system since the monitoring system will have to be designed to monitor reduced emissions from deforestation and forest degradation as well as removals from conservation, sustainable management of forests and enhancement of forest carbon stocks in Lao PDR. Of the five carbon pools only above-ground biomass is measured and accounted for in Lao PDR at present. The GoL has already submitted a forest definition to UNFCCC (min. 20% forest cover, min. area 0.5 ha, min tree height 5 m, palm trees and bamboo considered as non-forest). There is an immediate need to provide training on GHG accounting and reporting for Land Use, Land Use Change and Forestry (LULUCF) which will also inform the development of the 2nd Communication. As a matter of priority, a study for developing Lao specific emission and removal factors (Tier 2) for the various emission related activities in regard to LULUCF and AFOLU will be conducted. The forest definition has implications for National GHG monitoring and the MRV system because areas under rotational shifting cultivation change their status from forest to non-forest, making forest cover assessments challenging and a study will be conducted to assess the implications of the forest definition, and recommend the most appropriate definition for Lao PDR national circumstances.

The JICA-supported Program for Forest Information Management (FIMP) will address the problem of inconsistency between forest cover assessments at various times by preparing a nation-wide forest base-map 2010 using ALOS, SPOT-5 and Rapideye imagery and carrying out a nation-wide field survey in 2010 collecting basic information on species, diameter, height and density and will use SPOT4 imagery to prepare a nation-wide forest cover map for 2005. A National Forest Inventory was carried out between 1991 and 1999 and it is proposed that a new inventory will be conducted as soon as possible. PSPs established during the NFI will where possible

be re-measured. Changes in forest biomass and carbon are key issues for REDD+ monitoring and reporting. According to IPCC guidance, carbon stock change assessment shall be done using activity data and emission factors. In Lao PDR, the information base is much better for production forests than for other forest categories. Previous experience in Lao PDR suggests that a combination of ground-based inventories and analyses of remotely sensed data (satellite images, aerial photographs) using multi-phase or multi-stage sampling approaches has to be used to monitor carbon emissions and removals. While already a large amount of relevant data and information for REDD+ has been collected in Lao PDR, a major shortcoming is the proper storage, retrieval and reporting of the very information. Instead of preparing a separate reporting system for forest carbon and REDD+, it is will be incorporated it into the proposed integrated Forest Information System

The nested approach also requires more diversified verification arrangement. For the voluntary market, various carbon standards are under development for REDD+ projects, but most of them require verification by an independent certifier. In the CDM compliance market which may be regarded as a model for future REDD+ compliance market, Designated Operational Entities (DOE) are required.

Broad agreement has been reached at an international conference on a draft framework of three core governance parameters for REDD+ and key considerations (i.e. 'what to monitor'). The framework is comprehensive and can be adapted for Lao PDR taking into account particular national circumstances and governance situations which are described in more detail in component 2a of the R-PP. Among others, it will monitor policy implementation, law enforcement, compliance with environmental laws (e.g. hydropower, mining), illegal logging, land use and carbon rights, equity of benefit-sharing arrangements, corruption, institutional performance, conflict resolution mechanisms. The REDD+ office shall develop country-specific indicators for the governance parameters and principles based on broad consultations with major stakeholders, to be used for measurement, reporting and verification. Right after the start of the R-PP implementation, a baseline survey of pertinent governance factors will be conducted (or commissioned) by the REDD+ office,

Component 1: Organize and Consult

1a: National Readiness Management Arrangements

National REDD+ Task Force

The REDD+ Task Force is currently the government's main instrument for managing REDD+ activities. Official Notice No: 1896/SCG dated 7th November 2007, advised the Ministry of Agriculture and Forestry that the Prime Minister's decision of 1st November had appointed the Ministry as the national member of the Forest Carbon Partnership Facility at the World Bank and delegated responsibility for implementation of all activities related to the facility to the Ministry. The Ministry of Agriculture and Forestry Decree No. 1313 of 3rd November 2008 established the REDD+ TF to be chaired by the Director-General of the Forestry Department. There are currently 12 members, of which seven are from the Ministry of Agriculture and Forestry, (five from the Department of Forestry and one each from NAFRI and NAFES), two from NLMA and one each from WREA, MOIC, and the National University.

Currently all REDD+ activities are coordinated, facilitated and promoted by the REDD+ TF The main tasks include: (1) management of FCPF process, (2) promotion and coordination of planning/ implementation of REDD+ projects/ pilots, (3) participation in and observation of the international climate change dialogue and REDD+ negotiations, (4) capacity building through workshops and seminars. The REDD+ TF is currently supported in administrative matters by a REDD+ coordinator and staff of the Cooperation and Investment Unit under the Planning Division/ DOF and by an Advisory Group including 8 international expatriates of different donor initiatives (e.g. SUFORD, FSIP, CLiPAD, URDP, CIM). A few members of this advisory group from SUFORD/ FSIP/ CliPAD form a working group to provide coordination/ organizational support to the REDD+ TF. Regular (usually once a month) and ad hoc REDD+ TF meetings are the main forum to present, discuss and decide upon REDD+ related issues. During some of the meetings also other stakeholders, such as NGOs, other government agencies, consultants or donor initiatives are invited.

Prior to the second national consultation workshop, the draft R-PP was presented at the task force meeting where several projects and agencies were represented (including MOF, MEM, MPI, DOFI, NLMA, WB, WCS, others),. Further, five thematic meetings with key concerned departments/sectors were organized to discuss the draft of every main component, including reference emission level scenarios, strategy options, institutional framework, financing mechanism and benefit distribution, MRV and SESA and their comments were incorporated into the first draft.

The first draft RPP was then presented and discussed at the second consultation workshop, in which many other Ministries participated (including MOF, MEM, MPI, DOFI, NLMA, Lao National Front for Construction, Representatives from key sectors from 5 provinces, Lao Women Union, Lao Chamber of Commerce, WB, IUCN, WCS, WWF, SNV, CIDSE, Private companies, (and others) . The revised first draft of RPP (the same that is submitted to FCPF) was also sent to key institutions and members of REDD Task Force.

The current arrangements with a REDD+ Task Force and a REDD+ focal person within DOF have been adequate to bring the process to the current position, but major changes are needed to effectively implement a program that will be expanding and diversifying rapidly in the coming months. REDD+ is different from donor funded programs and projects, because there will be multiple sources of funding (projects, compliance and voluntary markets) multiple activities going on throughout the country (pilot field activities, capacity building, consultation at national and the full range of sub-national levels down to villages)) promoted by multiple stakeholders (government, donors, NGOs and private sector). This will require new purpose built institutional arrangements to manage the process effectively that addresses existing weaknesses of inappropriate institutional setup and administrative capacity, cumbersome and time consuming decision making processes and lack of a mechanism that allows stakeholders to have inputs into the policy/ decision making process. In order to establish the new arrangements as soon as possible and minimize confusion and uncertainty existing structures and institutional arrangements will be used and modified as necessary to deal with the new situation.

The REDD+ TF is represented in, linked/connected to, and exchanges information with other relevant technical working groups, such as the TWG on Agriculture, Land Use and Forestry (NSCCC) and the Forestry Sub-working Group under the ANR Working Group of MAF, which was set up in 2006 to coordinate government and donors activities contributing to the implementation of the Forestry Strategy 2020.

For implementation of the Readiness phase (R-PP Implementation) high level cross-sector coordination and policy guidance will be provided by the National Environment Committee, Chaired by the Deputy Prime Minister and the members of which are at Minister or Vice-Minister level. The mandate of this Committee is to provide advice to the Government on decisions relating to environment and Climate Change issues. In order to engage all sectors involved in REDD+ issues, membership of this Committee will be broadened slightly to include other essential sectors not currently represented, especially the National Land Management Authority.

The REDD+ TF will be strengthened by essential additional members from other key ministries, including Finance, Planning and Investment, Mines and Energy and from the Department of Forest Inspection in MAF. In order to limit the number of participants to a manageable number it may be necessary to restrict participation of some stakeholder groups, such as donor projects, NGOs and private sector to a single representative, who would be responsible for soliciting views of other members of the group and reporting back on the outcome of discussions. The TF will be supported by a new REDD+ Office with full-time staff. This Office will have several tasks; including (i) managing implementation of the Readiness activities funded by the FCPF, (ii) coordinating and monitoring other REDD+ related activities by maintaining a register of all projects, whether funded by donors or by credits from the voluntary market, (iii) monitoring international negotiations and providing material support for Lao PDR delegates attending international meetings (iv) organizing stakeholder coordination and implementing the SPCP, (v) preparing a draft regulation for submission to the TF and NEC for consideration; (vi) prepare detailed proposals for how different forms of REDD+ related funding will be managed and distributed; (vii) Develop a carbon Registry, (vii) preparing technical reports and progress reports for the TF and NEC... .

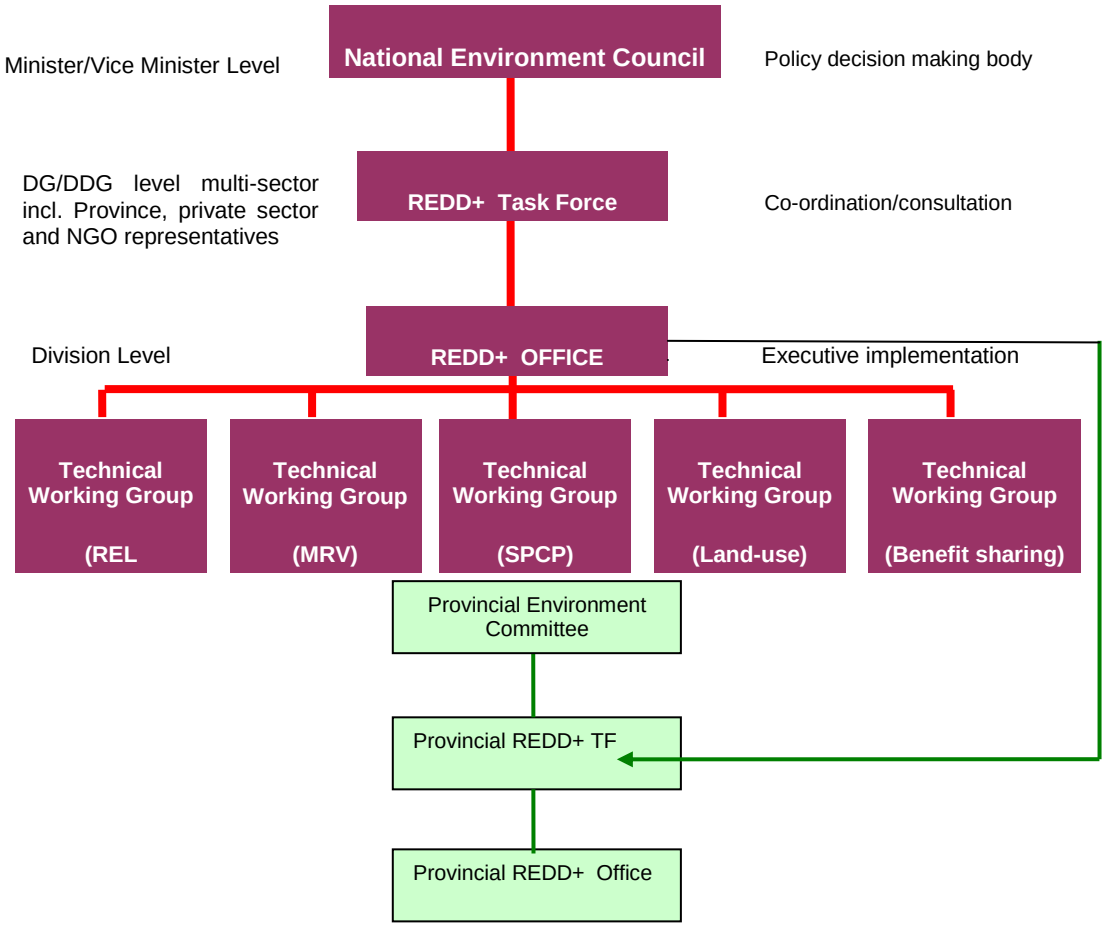
The REDD+ Office will be empowered to establish a number of Technical Working Groups, including; REL, MRV, Stakeholder Consultation, Land-use Planning, Carbon Registry, REDD+ Strategy, and others as required. These working groups will provide technical support and advice to the Office as needed and in particular for the

preparation of Annual Work Plans to be prepared by the Office, that will be submitted to the Task Force for endorsement to the NEC..

The REDD+ Office will also support the establishment of a similar structure at Provincial level, in those Provinces where REDD+ activities are taking place or are planned for the Readiness phase.

The arrangements are shown in Figure 1 below.

Figure 1. Institutional arrangements



The REDD+ TF organized the first Stakeholder Consultation Workshop in May 2010 and a second in August 2010 and until the establishment of a Permanent REDD+ Office, will be responsible for organizing all future workshops, focus group meetings and bi-lateral or multi-lateral meetings with key government agencies and stakeholder groups.

Table 1a:Summary of National REDD+ Management Arrangements Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$'0000)				
		2010	2011	2012	2013	TOTAL
1a.1. REDD Office	1a.1.1. Veh. And Equ		100	20	20	140
	1a.1.2. Operating costs		50	50	50	150
	1a.1.3. Staff costs		44	44	44	132
	1a.1.4. TWG Meetings		20	20	20	60
	1a.1.5. Staff training		50	50		100
	1a.1.6. Consultation W'shops	50	20			70
	1a.1.7. Technical support	150	160	160	160	630
	1a.1.8. Provincial REDD office		32	32	32	96
	1a.1.9. Capacity building		90	60	60	210
	1a.1.10. Attendance at International meetings		40	40	20	100
	Total	200	444	344	294	1,282
Government						0
FCPF						0
UN-REDD Programme						0
GTZ						0
JICA						0
World Bank						0

Other agencies that are providing REDD related funding are shown, however more detailed alignment to RPP, which will determine which donor will support which activity and with what amount, will be undertaken early in the Readiness phase since the allocation of budget to activities in most of the upcoming projects is not yet clear., and additional donors have expressed interest in contributing. The Summary Table in Component 5 provides more detail on the activities being supported by other donors as far as can be confirmed at this stage..

1b. Consultation and Participation

Consultation during R-PP preparation

It was decided by the REDD+ Task Force at a meeting on 9th April that stakeholder consultation and participation during the R-PP preparation phase should focus on the national level representatives, and involve selected provinces where immediate REDD+ Readiness activities are planned. This was done in order to have a constant information flow and not to raise expectation in areas where no REDD+ Demonstration activities on sub-national level are planned. Lao PDR has more than 10,000 villages, most of which are very small with a few hundred households, and many are inaccessible to motorized vehicles, during the rainy season. Some of the challenges to consulting with many communities is discussed in more detail below. At this stage only the GTZ component of CLiPAD project and JICA funded PAREDD project have activities in known locations and they are conducting their own consultations. The location of new activities has not yet been determined. As discussed later, new activities are expected to be incorporated into existing or upcoming government programmes and projects with relevant objectives, such as land-use planning, the on-going SUFORD project and ADB projects such as the Biodiversity Corridor Phase II. Consultation at the community level is built in to all these projects and will form part of the process for selecting the locations. Additionally the number of stakeholders involved at Provincial, District and village level would have been so large that the budget cannot cover full participation and organizing one event would have been too complicated in the limited time available..

All the stakeholders involved in government, civil society, private sector and donors at national level alone come to more than 200 organizations. It was agreed that as many as possible of the stakeholders identified should initially be interviewed to ascertain the general level of awareness of REDD+ related issues, to discuss preliminary findings and seek data that is needed for the analysis and strategic planning. During the period 7th April to 17th May more than 50 stakeholders in four broad stakeholder groups -government, civil society, private sector and donors - have been consulted. The list of those stakeholders directly consulted, is attached as Annex 1.

These meetings with stakeholders revealed a very wide range of levels of awareness and understanding of REDD+ in all four of the stakeholder groups, and a general consensus that REDD+ could be beneficial for Lao PDR. There was strong support among those consulted for the following points:

+ REDD+ should be considered as a mechanism for promoting multiple benefits, such as conserving biodiversity, mitigating climate change and rewarding the government and local communities for protecting the forest
+ Pilot or demonstration activities for REDD+ interventions during the R-PP implementation phase should be incorporated into existing and future government programmes/ donor projects concerned with land use planning and managing production and protection forest and NCFs. They should not be “stand-alone”.
+ An important activity should be the awareness raising through proper Information Education and Communication (IEC) material of local communities as to what REDD+ is. Later training of local communities in monitoring carbon stocks and other indicators necessary for REDD+ shall be

foreseen, so that they can see for themselves what is going on and understand the outcome of their actions

+ Capacity building among all stakeholder groups is necessary and should not be restricted to government only.

+ Ways need to be found to strengthen cross sector coordination as little will be achieved without the strong and active participation of other sectors especially Finance, Agriculture, Environment, Land Management , Energy and Mines, Public Works and Transport, Industry and Commerce and Planning and Investment at national and provincial levels

The first consultation workshop was held on 25th and 26th May, combined with a high level meeting chaired by the Minister of Agriculture at which strategic and policy matters relating to REDD+ were presented and discussed. The high level meeting was attended by about 150 participants and about 100 remained for the Consultation workshop. Six presentations at the workshop were made covering major issues relating to REDD+ and each was then discussed in one of six smaller working groups. The main conclusions of the workshop are given in Annex 2. A

A second stakeholder consultation workshop was held on August 10th and 11th 2010 to discuss the draft R-PP and solicit comments and inputs as well as providing participants with an overview of expected REDD+ related activities in the coming years

Consultation and Participation Plan

As mentioned above, the Lao population is still largely rurally based with about 70% of the people living one hour or more travel time from their District town.. Consequentially standards of education tend to be low and the communities have had little exposure to many of the issues facing global society, in particular climate change. More than half the population is younger than 20 years old. The Lao Front for National Construction (LFNC) is the organization charged with implementing the Party and Government's ethnic policy. They have classified the ethnic groups of the Lao PDR, following international practice, into four ethno-linguistic families: Lao-Tai (Tai-Kadai); Mon-Khmer (Austro-asiatic); Hmong-Mien (Hmong-Yao, Miao-Yao); and Sino-Tibetan (mostly Tibeto-Burman). The LFNC currently recognizes 49 ethnic groups and some 160 seng or subcategories. Many of these ethnic groups do not have written material in their languages. Communicating and consulting with many of the communities will be a challenge to ensure that they can eventually participate with a clear understanding of what is involved in line with the Free Prior Informed Consent process. The political system has consultative mechanisms, through village and district officials that enables grass-root issues and concerns to be the brought to the attention of higher levels. The mechanism also works in reverse. Much depends on the quality and strength of leadership at the village level.

The government has established Technical Service Centres (TSC) at village cluster level, to provide support to villagers relating to agriculture, forestry and aqua-cultural techniques, and where REDD+ activities are to be carried out at village level. The staff from these centres will receive training and will become important channels of communication with villagers, since many speak the local languages.

To achieve REDD+ objectives during the Readiness phase and beyond, multi-stakeholder dialogue processes will be needed at all levels to bring together groups of relevant stakeholders to discuss issues of concern and solicit views and opinions that can inform important decisions that will be needed regarding implementation arrangements and strategy. This process must recognize the importance of achieving equitable representation of stakeholder groups and their views. It is also based on

principles such as transparency and participation, and aims to develop partnerships and strengthened networks between stakeholders. It is recognized that some of the most important stakeholders, the ethnic groups in the remote forest areas, will have difficulties because of illiteracy and unfamiliarity with National language. Preparation of short explanatory audio-visual and written material of REDD+ in local languages must as far as possible, therefore be prepared and disseminated in a proper fashion through suitable IEC materials as reflected in the *Stakeholder Participation and Consultation Plan.*

The '*Stakeholder Participation and Consultation Plan*' (SPCP) will provide the framework for stakeholders to learn about and provide inputs to guide the R-PP implementation. It will also enable the GOL, the REDD+ Task Force and other stakeholders to seek information from lowest to highest level. In this way it will help structure decision making during R-PP implementation and ultimately to develop a REDD+ + Strategy. To support the REDD+ TF and the (to be established) REDD+ Office in implementing the SPCP an **SPC Working Group (or a committee under the Office** (see institutional arrangements and monitoring below) will be established with membership of persons well versed and experienced in REDD+ + issues and the special role of stakeholder groups such as rural communities, Ethnic groups, Women and the private sector. The process of consultation and participation is integral to the REDD+ implementation framework, and to the development of the REDD+ Strategy. The SPCP will include Social and Economic Impact Assessments (SEIA) and application of WB Safeguards (see 2d). Initially, the SEIAs will be carried out in the implementation phase for the pilots linked to ongoing projects.

The key areas identified for awareness raising, consultation and information sharing are:

1. Awareness of REDD+ through differentiated IEC materials, including information in local languages. The awareness creation process will describe what CO_2 is and what it does, and the contribution of forestry and land-use changes to national emissions of CO_2 and how we can avoid climate change and how REDD+ might be applied in Lao PDR
2. Scope and nature of REDD+ (information sharing)
3. Potential Components of REDD+, including REL, MRV systems
4. The Readiness Preparation Process, including

    REDD+ Consultation & Participation Plan

    Consultation Structures with clear responsibilities assigned

5. Coordination with other land-use management programmes' consultation processes, such as forest and land use zoning, PLUP and Climate Change adaptation
6. Cross-cutting Issues including
    - Land Classification, Land Forest Rights / Land Tenure Systems
    - Forest Governance
    - Adaptation of Village Agreements on community forest management to incorporate REDD+.
    - Benefit Sharing systems
7. Coordination with other initiatives by all stakeholders
8. Environmental and Social Safeguards for REDD+

The Consultation and Participation Plan will be the key work plan guiding the Government of Lao PDR, assisted by the REDD+ Task Force and the REDD+ Office and other stakeholders in refining the REDD+ Strategy during R-PP Implementation. Consultations during the R-PP development in other countries have identified some key principles for future REDD+ consultations. For Lao PDR these state that there is a need to:

i. Engage all stakeholders significantly affected by or involved in the implementation of, or otherwise interested in REDD+, regardless of sector

ii. Build on existing consultation & participation achievements and structures . (e.g. the review of the Forest Strategy 2020 and the FWG as well as any civil society platforms established for contribution to the sector.

iii. Be sensitive to stakeholders' needs for time and other resources (including capacity building & feedback processes – effective planning and spearheading of consultations and information sharing are critical in this area)

iv. Be tailored in providing information that is accessible and enables participation

v. Be sensitive to the need for continuous evaluation at multiple levels

vi. Be participatory and focused in the determination of goals

vii. Be sensitive to the need for conflict resolution and management process

viii. Be sensitive to the need to manage expectations

It is intended that these principles be followed by implementing a series of process objectives also identified through consultation and technical discussion. These are:

Increasing Awareness

REDD+ requires extensive information sharing and awareness raising prior to effective consultation. Currently the uncertainty over the scope and shape of REDD+, is a challenge to wide-ranging consultation especially since the failure of the COP-15 meetings in Copenhagen, December 2009. Information needs to be provided in the most appropriate manner for the constituent groups it reaches. As such, REDD+ should be included within existing discussions on forest governance and improved forest management. Early integration and collaboration will facilitate a clear understanding of linkages between different initiatives and reduce the number of information sharing activities conducted. At the village and District level the technical issues behind REDD+ are likely to be confusing, and the emphasis will be on the importance of reducing deforestation and degradation, the need to protect forests and rehabilitate degraded areas, which if done well can attract payments

Participatory approach to decision making

Participatory approaches to local level decision making allow for the integration of inputs received from a wide range of stakeholders, thus increasing levels of ownership of the resulting product.

As outlined above, multiple stakeholders will be represented throughout the decision making process managed by the government. The involvement of these groups will support the dissemination of information as well as provide transparency not only on decisions taken but on how those decisions were made, while permitting the government to retain leadership.

Involvement in implementation

Stakeholder involvement in implementation of REDD+ pilot activities will build knowledge and experience locally, which, combined with the above decision-making process will help to promote a broad sense of ownership. Clear responsibilities will need to be identified and agreed among participants within these forums to ensure that levels of communication and consultation are representative both within groups and between them.

Integration with safeguards measures (SEIA)

Operation of the FCPF Facility must comply with the World Bank's Operational Policies and Procedures, taking into account the need for effective participation of Forest-Dependent Indigenous Peoples and Forest Dwellers in decisions that may affect them, respecting their rights under national law and applicable international obligations. The application of these procedures will be embedded in a Social and Environmental Impact Assessment (SEIA). A SEIA is a tool that applies safeguards (outlined in 2d) and helps assess positive and negative impact of policy options and concrete projects. It addresses primarily concrete initiatives and projects with the aim to avoid doing harm and - where negative social or environmental impact may occur - define socio-economic mitigation measures including fair compensation. A key question relates to when safeguards are triggered in a strategic planning process. In the present R-PP they will first be applied to the pilots to create procedures and learning.

Plan for Consultation and Participation Activities during R-PP Implementation

Goal: To achieve collective ownership of the process to develop strategies that reduce emissions through deforestation and degradation (REDD+) and to support conservation, sustainable forest management, and the enhancement of forest carbon stocks (the + in REDD+ plus).

Purpose: To develop a system of consultation to ensure that **all** stakeholder groups have a better understanding of REDD+, how it relates to Lao PDR, what roles, responsibilities and opportunities they have within Lao PDR's efforts and encourage a sense of ownership of the REDD+ measures to be adopted.

Key Stakeholders:

- Government – State level and statutory level with a focus on cross sectoral linkages
- Private Sector – the timber industry and associations, wood workers associations, those involved in charcoal production, agriculture, tree plantations including rubber, and biofuels and tree planter's association, investors, mining and hydro-power utilities and farmers and farmers' groups
- Civil Society –National Cultural and non-profit organizations and international NGOs were identified for inclusion, with a focus on forest fringe communities
- Local communities/ethnic groups – Laotian organizations with a mandate to represent local communities and ethnic groups interests, Village Forest Organizations
- Development Partners

Content (see also 2d for SEIA):

Areas requiring information sharing and consultation include:

- **Basic information on REDD+:** where does it come from, what are the issues being negotiated internationally, the implications at national level, what are other countries doing on REDD+, what are the incentives from REDD+, how will these be shared, what are the ways for Lao PDR to engage in a REDD+ mechanism, what benefits could be available to different stakeholders
- **Land Use Rights / Land Tenure Systems:** what are the potential implications of REDD+ benefits within the existing legal context on benefit sharing (see below), land allocation, land concession policy and implementation
- **Forest Governance**: The design of REDD+ must support existing initiatives in forest governance, the importance of law enforcement, especially to deal with ill-considered (often illegal) allocation of land for concessions, illegal logging,
- **Benefit Sharing and distribution systems**: Evaluation of existing benefit sharing systems is needed to determine if REDD+ could make use of any existing agreements, assess what systems of benefit sharing could be appropriate and provide maximum benefits
- **REL and MRV systems:** Key questions to addressed include: How can REL be defined? What are the implications of various approaches for defining RELs on the expected future benefits? What methodologies are used for MRV? What are the roles and responsibilities of different stakeholders in MRV?
- **Potential REDD+ projects and activities:** to include dealing with the drivers of DD, providing a geographical spread, different stakeholders involved, different forest management regimes (production forest, protection forest, conservation forests, community managed forest, plantations)

The selection of REDD + activities, including capacity building and field activities is discussed in detail under Component 2b (REDD Strategy Options) and the outcome will provide the starting point for the consultation process at Province, District and Community level. The selection of locations for field activities will allow for work in different major forest types, (e.g. Evergreen, Dry deciduous, dry dipterocarp etc), different forest categories (Conservation, Protection and Production) and will ensure geographical coverage. Field activities to address shifting cultivation will be in the uplands and will involve various ethnic groups, which, as mentioned earlier often do not use the Lao language and so time will be required for consultation to ensure that the communities fully understand what is involved and confirm that they wish to participate. The consultations will involve exploring different ways in which these communities can contribute to reducing emissions and ensuring that any changes to their farming practices result in improved livelihoods.

Institutional Arrangement for Future Consultations:

The Government of Lao PDR through the REDD+ TF is the responsible entity for ensuring that the SPCP Plan is followed during the R-PP Implementation. Roles and interactions with other groups, who can participate in ensuring the SCPP is followed, are further described in component 1a, and 2b and 2c. These should support open

consultation platforms at community, district, regional, and national levels as part of the overall sector management and governance.

Further progress is required particularly with regard to coordination within the Forestry Department and across sectors as well as strengthening of existing structures including REDD+ TF and the (to be established) REDD+ Office (see section 1a) and the setting up of a SCP Working Group.

Tools and Methods to be used in Consultation and Participation during R-PP Implementation

To conduct effective information sharing and consultation, a range of tools will be used to ensure a broad reach and effective engagement. Such tools include:

- Maintain & continuously update DOF and other websites to post information & solicit input
- Production of policy briefs and information notes appropriate to different audiences that can be distributed in both hard and soft copy
- News bulletin of the DOF
- Propagate news through local FM & Community Radio
- Develop audio material in local languages
- Stakeholder group managed information sharing
- Through the village TSC

For these tools to be effective, particular attention will be paid to the planning of consultation and participation processes to ensure that: i) information is available for participants sufficiently in advance of consultation, ii) participants are aware of upcoming dates so that they can organize their constituencies, iii) information sharing and consultation processes can be coordinated with other existing processes such as land-use planning or climate change..

Consultation

Consultations will occur at different levels from small scale beneficiary group consultations to broader national consultations. Key tools within this process will include:

- Formal and Semi Structured Interviews
- Focus Group Meetings with Stakeholder groups
- Self Administered questionnaires that anyone can complete and submit
- Workshops
- Stakeholder group managed consultation

Sequencing of Consultation Processes during R-PP Implementation

The sequencing of consultation processes during R-PP Implementation will be very important. Experience in other countries emphasizes the importance of all stakeholders having prior, well informed and realistic understanding of REDD+ and the relationship with both international (UNFCCC) and national (e.g. Forest Strategy 2020) consultation processes. It also revealed the need for strengthening of the capacity of both the National body with overall responsibility for REDD+ policy matters (for Lao PDR this will be the National Environment Committee) as well as the body responsible for REDD+ implementation (in Lao PDR this will be the REDD+ Office (to be established) . The NEC will provide links to Climate Change initiatives and support the oversight and management of effective consultation processes (as proposed in Component 1a).

The consultation and participation plan for the Readiness Preparation Phase is expected to focus around three major steps outlined below. These steps will allow for knowledge to be developed, consolidated and shared, for gaps to be filled and understanding to be furthered and then for decisions to be made based on a strong understanding of the interactions between potential REDD+ mechanisms, and the broader Lao PDR context at both local and national levels.

Stage 1: Analysis, Preparation and Consultation

Awareness Raising: A broad range of stakeholders will be engaged with the REDD+ process as it develops within Lao PDR. In order for this to occur, levels of awareness of REDD+ + must be increased. It is anticipated that this will be undertaken mainly through stakeholder owned and managed processes.

Analysis of Existing Knowledge: There exists considerable knowledge and expertise on tackling deforestation and degradation within Lao PDR. This knowledge is currently held in a wide number of institutions and groups both within the sector and beyond. It is important that this knowledge be brought together and developed in relation to the challenges presented by REDD+. As such a process of Consultation for Strategy Option development should occur. This would encompass both issue based Working Groups and broader National Expert Consultations on timber supply and carbon rights allocation (expanded within Component 2b).

Stage 2: Piloting and Testing

Before pilot activities and demonstration activities commence it will be necessary to describe the whole process of selecting the pilots, mention the projects and mention WHAT exactly will be tested in each particular pilot and that it will give opportunity to test the measures of REDD+ Strategy, including benefit sharing mechanisms to be defined. The pilots are the only way to provide tangible means for thought and gain results.

Ongoing information sharing and consultation is required during Step 2. This would include:

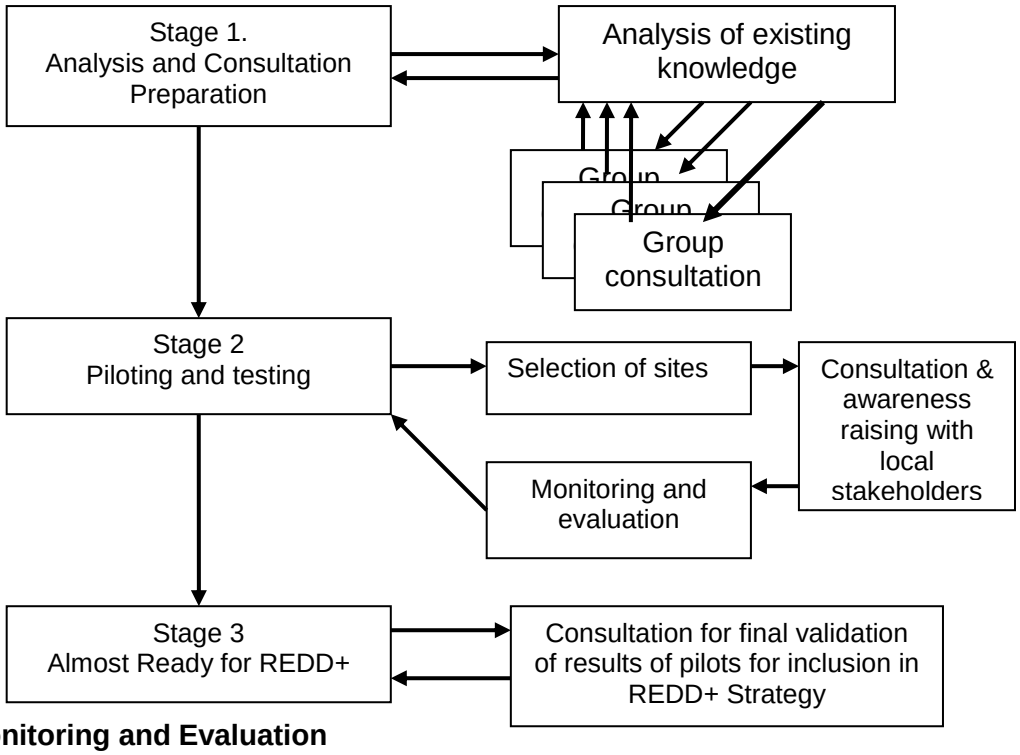
- Awareness raising concerning the draft National REDD+ Strategy
- Focused consultation on specific aspects (eg. RELs, Implementation arrangements, MRV of a National REDD+ Strategy within stakeholder groups, including revisions to legislation and institutional structures
- Continuous review and update on pilot activities to relevant stakeholders
- Consultation on lessons learned from pilot projects developed as part of the national preparation activities

Implementation of Pilots will feed into the development of a REDD+ Strategy

Stage 3: Becoming Ready

The final step of the SPCP process further consultation to validate the process and the comprehensive operational plan for REDD+. Built on the outcomes of previous stages of consultation and the results of pilot projects, sufficient time and resources will be allocated for a validation process engaging both senior government figures as well as community and private sector representatives. The capacity of organizations to participate effectively in it should have been developed during the previous steps but support in transferring information and developing responses should still be provided.

Figure 2. Stages in consultation and knowledge sharing process



Monitoring and Evaluation

It is important that activities undertaken for communication and consultation are also monitored and evaluated to ensure that they are effectively supporting continued learning and improvements in decision making and implementation processes. One of the tasks of the REDD+ Office **will be to design effective monitoring mechanisms,** so that it can determine for itself if the SPCP is working effectively. These mechanisms should include indicators that will assess the extent to which information has reached the intended audiences, whether the audience has been able to make use of it and integrate the learning into their behavior and actions. The success of the REDD+ processes depends on the ability of groups to provide feedback into the process and the requisite response from decision makers to the feedback.

Initial Activities

Activity 1b-1: **Establishment of a SPC Working Group Under the REDD+ Office.** This should include a dedicated member of staff from the Forestry Department representing the REDD+ Office, as well as key members from Government, the private sector and civil society. This group will be responsible for:

- development of a detailed work plan for REDD+ readiness preparations,
- identification of partner organizations to conduct Stakeholder led information sharing and consultation
- development and dissemination of effective awareness raising / training materials

Activity 1b-2: Broad information sharing on REDD+ through stakeholder based information sharing and consultation. The REDD+ Office will be funded to provide financial and technical support to stakeholder groups to enable them to undertake this. Training courses on communicating REDD+ and climate change will be developed to help broaden understanding of the process and improve its

communication within stakeholder groups. The SCP Working Group will coordinate this process and ensure that different stakeholder groups are well informed and prepared for the process.

Activity 1b-3: Expert and Focused Consultation through Working Groups and National Expert Consultations. Existing knowledge and lessons learned from past approaches needs to be consolidated and synthesized to ensure that REDD+ strategies are appropriate and effective.

Activity 1b-4: Stakeholder based consultation on key pilot projects and legal / institutional changes. A number of pilot projects and demonstration activities will need to be run to test aspects of Lao PDR's evolving national REDD+ strategy. Feed back on these projects will need to be obtained and their potential application in new areas consulted upon. Discussions with key stakeholder groups will also be necessary in the development of the legal and institutional structures needed to implement REDD+ at the national scale.

Activity 1b-5: Validation: Prior to full engagement with a mechanism for REDD+ a process of in-depth stakeholder consultation will be required to validate the manner of engagement. The exact nature of this process will depend on the outcome of the assessment processes during the prior years, but is foreseen as being undertaken by stakeholder groups.

Table 1b: Summary of Stakeholder Participation and Consultation Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$'000)				
		2010	2011	2012	2013	Total
1b.1. Awareness raising	1b1.1 Estab. SCP WG		50	50	50	200
	1b1.2 Stakeholder info sharing		20	20	20	80
1b.2. Focus groups	1b2.1 Synthesis of experience		20	20	20	80
	1b2,2 Pilot projects		50	50	50	200
1b.3. Validation	1b3.1 Consultation		50	50	50	200
Total		0	190	190	190	760
Government						
FCPF						
UN-REDD+ Programme						
GTZ						
JICA						
World Bank						

Component 2: Prepare the REDD+ Strategy

2a: Land-use, Forest Policy and Governance Quick Assessment

Major land-use trends

There have been massive changes in land-use over the past two decades driven mainly by demand for land from neighbouring countries for growing a wide range of cash crops. The data on historic and current land-use is incomplete and inconsistent, since it is compiled and archived by several different institutions at national level. Most provinces also hold data on land-use, which frequently differs from that held centrally. The most important source of historic data is the Assessment of Forest Cover and Land-use change 1992-2002, published by the Forestry Department in 2005 and referred to in detail in Section 3 in relation to REL and 4a in relation to MRV.

In addition to the reductions in the area of forest recorded by the stud**y** there has been a steady fragmentation of the forest blocks and a decline in the average growing stock within the residual forest which have both reduced carbon values and had a negative impact on biodiversity through the loss of connectivity that **promote**s species dispersal**.**

The forest cover changes suggest that during the 1990s the annual loss of forest cover was around 1.4% annually giving an average annual loss of forest cover of about 134,000 ha. The available data does not distinguish between forest that has been lost from the denser classes through deforestation and forest that has degraded from a denser class to a less dense one. It is likely that both processes have been taking place. There is at present no more recent data, but eclectic information from various sources, including national and provincial records and reports suggests that the rate of decline has continued at a similar rate until the present day**.**

While the Forest Law (2007) and the Land Law are clear about the status of land, they place restrictions on the area of degraded and barren forestland that can be approved for conversion by district, provincial and national authorities. Conversion of stocked forest (>20% crown closure) is only allowed under special circumstances and must be provided for in the NSEDP and approved by the National Assembly. By implication all other conversion of forest is illegal although large areas have been approved for conversion in recent years. Land-use plans only map areas with forest cover and do not include information on the quality of the forest. so that approval may be given for the use of a specific area without any information as to whether it carries forest and if so in what condition. Many concessions appear to be granted on the basis of rough boundaries drawn on maps. The Law is frequently disregarded for a variety of reasons.

Land tenure

Tenure rights over forest land are defined by the Forestry Law (2007), whereby natural forest and forestland is the property of the national community/ managed by the State and user rights can be granted by State. Trees planted by people or planted by an organization in designated areas shall become their property, if their

labor and/or funds have been used. Rights to use natural forest, planted forest and forestland areas can be allocated by the State to village administration authorities for long term sustainable use according to the management plan and laws and regulations (Art. 90). The right to use natural forest can not be transferred through inheritance (Art 91**).**

Customary utilization of forests is recognized and Village forests are established to allow the use of timber and harvest of forest products household utilization so long as it is in accordance with a designed plan and with village regulations and laws and regulations on forests (Art. 42). Forest tenure also very much depends on the definition of forests. Forests have been defined here as 'areas suitable for forest production and having a tree cover with a crown density of at least 20%, and supporting trees with dbh more than 10cm, covering at least 0,5 ha (LSFP, 92)', which fit currently available international requirements (in line with COP 7 forest definition). Degraded forests are not clearly defined in the Law, being 'forest areas that have been heavily damaged', but the classification used for the national forest inventory defines degraded forests as having crown cover <20%.

There is a wide range of forest resource tenure rights, including state property; communal rights that may be shared by members of the community; private assigned to individuals, corporate bodies and non profit organizations; and open access. As a result, several different stakeholders may have rights and interests, and consequently entitlements to REDD+ benefits. The entitlement of ethnic groups and local communities to REDD+ benefits presents a particular problem because they typically do not hold registered title and enforceable rights over the land they manage. During the PLUP process, agriculture and forest land is delineated and may be followed up with Allocation as Village forests or for Community management according to local circumstances.

Forest policy

The four priority policy goals for the agriculture and natural resources sector are:

(i) food security,
(ii) commercialization of agriculture**,**
(iii) stabilisation of shifting cultivation and
(iv) sustainable forest management

but there is a certain contradiction between the commercialization of agriculture and the others. The recent influx of FDI, mainly into the agriculture sector is threatening both food security by taking land needed by local communities for food production, and sustainable forest management through clearing and converting much forest, which even though somewhat degraded has the potential to regenerate with minimal intervention other than protection.

The major targets for the forestry sector which must be achieved to contribute to poverty eradication, that are set out in the Forestry Strategy 2020 are:

1) To improve quality of existing forested area, which is about 70% of the total land area, by naturally regenerating up to 6 million ha and planting trees up to 500,000 ha in unstocked forest area as an integral part of a rural livelihood support system encompassing stable water supplies and prevention of natural disasters**.**

2) To provide a sustainable flow of forest products for domestic consumption and generate household income through sale and export, thus contributing to livelihood improvement, fiscal revenue and foreign exchange earnings whilst increasing direct and indirect employment.

3) To preserve the many species and unique habitats, which are, for different reasons, threatened both within the country and elsewhere.

4) To conserve environment including protection of soil, conservation of watershed and climate.

Many important steps have been taken towards achieving these targets, such as the establishment of National Conservation Forests (NCF) and Production Forest Areas where sustainable management is being practiced and timber originating from these areas can be "Certified". The Forest and the Wildlife and Aquatic Laws and subsidiary Decrees on Production Forest Management have recently been promulgated as well as a National Biodiversity Strategy and Action Plan. The Decree o**n** Protection Forest has recently been approved in principle by the Prime Minister's Office and is expected to be signed shortly.

Forest Governance

By and large these Laws and Decrees provide an adequate regulatory framework for the management of the nation's forest resources, but problems with implementation and enforcement of the laws means that the situation on the ground is generally quite different from that intended. The Forest Law is generally clear, though there are some ambiguities and sections that lack clarity, and the role of communities in forest resource management that still need clarification. The recent establishment of the new Department of Forest Inspection within MAF to improve Law enforcement in all forest related activities including illegal logging, is also a step towards improving monitoring and governance in the sector. Progress, however, is severely hampered by inadequate allocation of funds in relation to the magnitude of the tasks and by lack of experienced staff to implement the measures, especially at Province and District level. The REDD+ concept is highly relevant for Lao PDR, since it will provide some of the essential funding as well as some motivation to stakeholders to commit to forest conservation and sustainable management.

For the future, REDD+ will need strict verification of actual reductions in CO_2 emissions, and there is a risk that the lack of control over what is happening on the ground will mean that actual reductions achieved in some areas may be offset by additional emissions elsewhere. This would suggest that a series of local level initiatives that could be monitored and verified would be more likely to meet REDD+ requirements than national monitoring.

The Forest Law has many provisions concerned with degradation of the forest resource. Arts. 7 and 97. place responsibility for preventing degradation on all citizens. Art. 20 provides for all forest harvesting and transport machinery to be approved by MAF and to be registered with the PAFO. Arts. 23 and 24 place restrictions on cutting and other activities in specified part of protection forest and Protected Areas and Art 25 requires all harvesting in Production forest to be in accordance with an approved management plan. Art. 27 provides for specified species to be protected and Art 29 provides specifically for the prevention of illegal logging (although it does not define what is considered illegal logging). Arts. 40, 41 and 42 allow for limited harvesting of wood for village, household purposes and in accordance with traditional practices, but it requires the approval of the DAFO and must not have a negative environmental impact. Art. 49 restricts the harvesting of forest products to production forest. Article 52 allows the government to authorize the export of logs from natural forest, (but it does not specify who or which Department is empowered to take such decisions). Art. 100 prohibits forest staff and inspectors from being involved in a number of activities including anything that causes a loss in state benefits from the forest. Arts. 101, 102 and 103 prevent business persons and

everybody from conducting a number of activities including harvesting and storing logs without a permit and especially listed protected species and offering bribes to forestry staff.

The main issues in relation to REDD+ Readiness are (i) to improve the dissemination of the laws and supporting regulations to both field staff within the sector and investors and other stakeholders that seek changes in land-use and (ii) to improve application and enforcement of the laws and regulations by Provincial, District and Village officials. Decisions at Provincial and District level on changes in land use are generally taken without a full appraisal of the social, environmental or economic impact, because of a serious lack of capacity at these lower levels to undertake such appraisals. As a result there are many examples of land being awarded as concessions that have had serious negative social, environmental and economic consequences.

A number of projects, such as the ADB funded SRNMPEP in the five southern provinces are attempting to address this issue, and advantage should be taken of this to incorporate Carbon management into the investment appraisal process. This will need additional capacity building during the REDD+ Readiness implementation. Lao PDR has recently been approached by the EU regarding the FLEGT process and it has been proposed that the process of negotiating a VPA should be begun. If an agreement is reached before the Draft R-PP is finalized the implications of this will be incorporated**.**

In Lao PDR, it has been concluded that to speed up creation of market links, it would be beneficial to work towards establishing certified sources of controlled wood by certifying Production Forest Areas using FSC-STD-30-010 FSC Controlled Wood standard (CW). This standard has been designed to allow companies to avoid trading in illegally harvested wood, wood harvested in violation of traditional and civil rights, wood harvested in forests where high conservation values are threatened by management activities, wood harvested in forests being converted to plantations or non-forest use, wood from forests in which genetically modified trees are planted. Compliance with this standard allows companies to supply FSC Controlled Wood to FSC certified chain of custody companies for the purpose of mixing with FSC certified material.

It allows companies to demonstrate that they are implementing best efforts to avoid the trade in illegally harvested timber, in support of the international Forest Law Enforcement, Governance and Trade (FLEGT) program. It allows companies to start implementing their own responsible sourcing policies. There is a need to build considerable capacity within DOF and at provincial, district and village level to manage the certification process and maintenance.

Table 2a.1. The current and potential for forest certification in Lao PDR.

Full FSC Certification		
Year	Nr of FMUs	Total Area (ha)
2010	6	86 304
2012	6 5	86 304 50 000
Potential FSC CW Certification		
2010	3	188 002
2012	5	253 002

Underlying causes of deforestation and forest degradation

In this proposal, the term deforestation is used to refer to a situation where forest is cleared and the land-use changed more or less permanently to some other use so that in the short to medium term it will not revert to forest. Deforestation that results in fragmentation of the forest degrades biodiversity and soil and water conservation functions, but is here considered as deforestation. Degradation is used to refer to a situation where the land remains as forest but the density and quality of the forest is decreased. This can be either in the form of unregulated harvesting which reduces the growing stock or in such land-use as shifting cultivation which means a temporary reduction in the growing stock followed by a fallow period when secondary forest grows back until cut again after a few years. There are situations where land becomes so degraded after repeated cycles of shifting cultivation, or where fire spreads from adjoining clearances, that the forest has become so degraded that it cannot regenerate and the land becomes grassland. At this point, degradation becomes deforestation.

A recent land use and forest cover change study included the analysis of more recent/ current drivers of FDD in Lao PDR (Mekong Map, 2010) based on a review of secondary data sources, consultations of resource persons and field investigations in three selected districts, each representing one of the Lao PDR's regions. This study identified nine sources, (fire, unsustainable wood extraction, pioneering shifting cultivation, agricultural expansion, industrial tree plantation, mining, hydropower, infrastructure development and urban expansion) and a combination of them that have caused FDD in recent years, involving different actors, such as farmers, shifting cultivators, logging companies and contractors, local and foreign investors, unspecified individuals (e.g. business persons), construction companies and government authorities. Their decisions to be engaged in FDD are influenced by multiple immediate interlinked underlying drivers, which are often site specific and change over time.

Forest degradation is mainly cause**d by unsustainable wood extraction, which** currently is largely the result of illegal logging activities, and poorly regulated timber harvesting by rural households for domestic consumption. Pioneering shifting cultivation, which is the clearance of primary forest, that may or may not have been logged previously, contributes to degradation, initially but may eventually cause deforestation as mentioned above and is generally practiced by ethnic groups who favor steeply sloping land. **Deforestation** is caused by all other sources including agricultural expansion**,** by both individual farmers and commercial companies, industrial tree plantation development, hydropower, mining, infrastructure and urban expansion. The smallholder agricultural expansion may be similar to shifting cultivation, but the farmer plants cash crops such as corn or cassava or perennial crops such as rubber, generally on more accessible land, and uses the land permanently so that it does not revert to forest.

Unsustainable wood extraction (especially illegal logging), and agricultural expansion/industrial tree plantation development have increased recently and are likely to have the most pronounced impacts. Hydropower, mining and infrastructure development wil**l** also increasingly contribute, however only indirect impacts leading to FDD can be addressed through REDD+ efforts. The magnitude of their CO_2 emission will be one criterion among others such as so called co-benefits to prioritize sources to be addressed **t**hrough REDD+ strategic options.

Although official logging quota has been reduced significantly since 2001, there are indications that wood extraction has actually increased in recent years as a result of

increased illegal logging, which has become a matter of serious national concern and a hot topic discussed at the NA. Agents involved in illegal logging and closely related timber trade include domestic and foreign business men from neighbouring countries, the military, local people and sometimes government officials. The central and southern regions and especially forests near the national borders are mainly affected and NCF's, which still harbor the majority of better stocked forests including many valuable tree species that attract agents that remove timber illegally.

Important **immediate drivers** include: the high profitability of illegal logging and the timber trade due to high demand and high prices, weak law enforcement and control, forest resource conditions - existence of high value species, good accessibility, insufficient awareness (importance of forests, legislation) and infrastructure/ hydropower developments. Important underlying drivers include: weak control and monitoring (forest management activities, illegal logging/ timber trade), growing domestic/ international demand, weak governance, insufficient capacities of local authorities, inadequate extension services, inadequate budget allocation[28], insufficient availability of information and appropriate technologies, consumption pattern especially in neighboring countries and overseas, as well as weaknesses in regional/ international rules and cooperation.

Pioneering shifting cultivation, where primary forest is cleared is still responsible for some forest destruction, although the scale of its nationwide impact declined gradually during the last two decades. Rural households carry out pioneering shifting cultivation, which is often linked to their cultural traditions and ethnic affiliation to secure their livelihood and seldom as a means to generate cash income. Rotational shifting cultivation generally involves clearing only secondary forest that has recovered from previous use, but land pressure is tending to result in the fallow periods being shortened, which has negative impact for agro-biodiversity conservation and for REDD+.

In contrast to the unsustainable wood extraction, pioneering shifting cultivation is not driven by profitability, but mainly by productivity and food security and the livelihood of involved households. However some underlying drivers also include market driven elements, especially as cash crops gained increased importance in recent years. Main **immediate drivers** in**clude:** suitable site conditions, insufficient land access, household needs especially food security requirements, no or inappropriate alternative livelihood options also due to a lack of information due to inappropriate extension services (e.g. on alternative livelihood options), values and beliefs linked to different cultural identities, insufficient/ absent incentives to protect forests and insufficient awareness. Major contributory factors are: insecure land tenure, often insufficient demarcation of boundaries (NCF's, NPF's), increasing extent of concessions and cash crop cultivation such as rubber, exotic timber trees, maize and cassava, and the inadequate implementation of GOL's policies.

These various drivers of deforestation and degradation are not so much a result of policy failures but of lack of monitoring and enforcement,due very largely to lack of trained and qualified manpower and funding.

Agricultural expansion and the establishment of industrial tree plantations share many common features and drivers, and can be subdivided into three categories; large to medium scale investments mainly as concessions based on the lease of state land, small scale investment and household based agricultural activities mainly on private land. They emerged in recent years as a main source of LUFC. Large and medium-size investment in agricultural cash crop cultivation and industrial tree plantations has grown substantially during recent years. However, due

to a land concession moratorium announced by the PM in 2007 and new legislations, development has slowed down. Especially in the context of large scale concessions there are many cases where the conversion of forests has been reported for example including village forest**s,** NCF's and PFA's (Mekong Maps, 2010). A key problem related to concessions include the inappropriate selection and allocation of land, using very small-scale maps for the land classification, whereby often fallow of swidden agricultural land and village forests, which are incorrectly classified as 'degraded' or 'un-stocked' are selected without proper participation and representation of villages concerned in the selection process and without verification as to their actual condition..

Although large scale concessions have been and still are subject to criticism, the impact of smaller investment and household based activities should not be underestimated, as they have become very dynamic and gaining more ground. Investors and farmers are increasingly engaged in cash crop and industrial tree cultivation. They have their own livelihood strategies, maximize their welfare and base their decisions regarding land use on the extent to which potential alternatives fulfill their household objectives including food security needs. The main immediate drivers include: favorable site conditions such as soil fertility and depth (promising high productivity), high profitability (promising high economic returns/ cash income), good accessibility (increases profitability), weak enforcement of laws, regulations and concession agreements by local authorities, absent economic incentives that could contribute to make the management/ protection of forests competitive (economically attractive) compared to other land uses, very limited awareness of resource users on rights to use land and forest resources, misinterpretation of forest categories as defined by LUP/ LA, inappropriate land identification methods for concessions, ruthless site clearing by concessionaires and peoples fears to loose land to investors. Contributory factors include: weak control and monitoring of concessions by local authorities due to inappropriate capacities and available financial resources[36], ignorance of regulations, laws and agreements by investors, insufficient availability of technologies (e.g. for monitoring) and information (e.g. for appropriate land selection), insecure land tenure security, inadequate extension services resulting in insufficient awareness on land use rights, insufficient demarcation of boundaries (e.g. village forests, NPF's**,** NCF's), inappropriate or absent implementation of LUP, misuse of power (e.g. ill-conceived granting of concessions) and investment incentives.

In order to develop a strategy and prioritize actions for effectively reducing emissions of CO_2 from LULUCF in Lao PDR, it is necessary to have a method for both estimating the sources and magnitudes of current emissions and for examining the likely impact of measures that could possibly be implemented to reduce emissions in the future. A model has been developed to do this that takes as its starting point the distribution of forest cover according to the four crown density classes used in the 1982-1992-2002 Land cover assessment. (Well stocked (>70%), Medium stocked regenerating forest (40- 70%), Low stocked forest (20-39%) and Forest < 20% crown closure) The NFI was implemented during the period 1993-97, more or less in the middle of the second 10 year period for the forest cover mapping. The NFI gives estimates of the mean stocking for each of the five forest types mapped (evergreen, mixed broadleaf/coniferous, mixed deciduous, dry Dipterocarp and coniferous) in forest with more than 20% crown closure, and the weighted overall mean is 91 m^3/ha. The use of the model for developing reference emission levels is discussed in Section 3.

The Table 2a.2 below gives the estimates of the total emissions projected over the next five years (2011-2015) and the distribution of the emissions among the various

drivers, on the assumption that about 3% of the forest area converted annually is from dense forest, 25% from medium forest and 11.5% from low density forest, The balance is from unstocked land categories.

Table 2a.2: Estimate of average yearly emissions of CO_2 from 2012-2020 using the baseline settings

RESULTS WITH DEFAULT SETTINGS				
Est. emmissions/sequestration of CO_2 in Lao PDR (mil. tCO_{2eq})		**RESULTS**		
		Average annual area affected ('000ha)	Average annual emissions (mil.tCO_{2eq})	Percent of total emissions of CO_2
Total annual emissions from C stock change in natural forest (2011-15)			-46.84	100.00%
Total annual emissions by shifting cultivation (2011-15)		57.3	-9.95	21.25%
Total annual emissions due to land clearance (2011-15)		67.2	-9.28	19.82%
of which:	Commercial concessions	34.2	-4.72	10.08%
of which:	Smallholder cash crops	14.7	-2.02	4.32%
of which:	Hydro-power	13.1	-1.81	3.87%
of which:	Mining	5.1	-0.70	1.50%
of which:	Infrastructure	0.2	-0.02	0.05%
Total annual emissions due to degradation (2011-15)		9,776.7	-23.34	49.83%
Total annual emissions net of sequestration plantations (2011-15)		67.2	-4.26	9.10%
Total annual net emissions (adjusted for sequestration)			-51.10	

Analysis of past efforts to reduce deforestation and forest degradation

While it has been government policy for some time to stop the continued loss of forest area and quality and restore forest cover to historic levels of around 70%, it has proved impossible in practice to achieve these goals. Efforts to tackle the problem have been mainly institutional, with first the bringing together of several departments in different ministries concerned with land into a National Land Management Authority in the Prime Minister's Office. This authority is charged with conducting land-use planning at the national and provincial levels and to provide support to Districts and villages for planning at their respective levels. A major outcome of this initiative has been the production of a comprehensive Participatory Land-Use Planning (PLUP) Manual for use by local authorities at village level. Village level LUP and land titling has been completed for 16 of the poorest Districts with around 1000 villages. The Standing Committee of the National Assembly has issued an Instruction No. 65 to the Government to solve conflict issues relating to land use. One limitation, with regard to REDD+ is that there is as yet no reference in the manual to the need to assess carbon stocks and take them into account when identifying land within village boundaries that could be allocated for concessions of one kind or another. This will be the subject of attention during the R-PP implementation phase.

The Forestry Law limits the harvesting of logs to production forest in accordance with an approved sustainable management plan, with the exception of special cases where land must be cleared for infrastructure projects. Local communities are allowed to harvest small quantities for their own needs subject to approval by the local authorities. Any other harvesting, for example in Conservation Areas or Protection forest is considered as illegal, but such logging is still being done on a

significant scale**,** sometimes with special permission and often by or with the support of nationals from neighbouring countries.

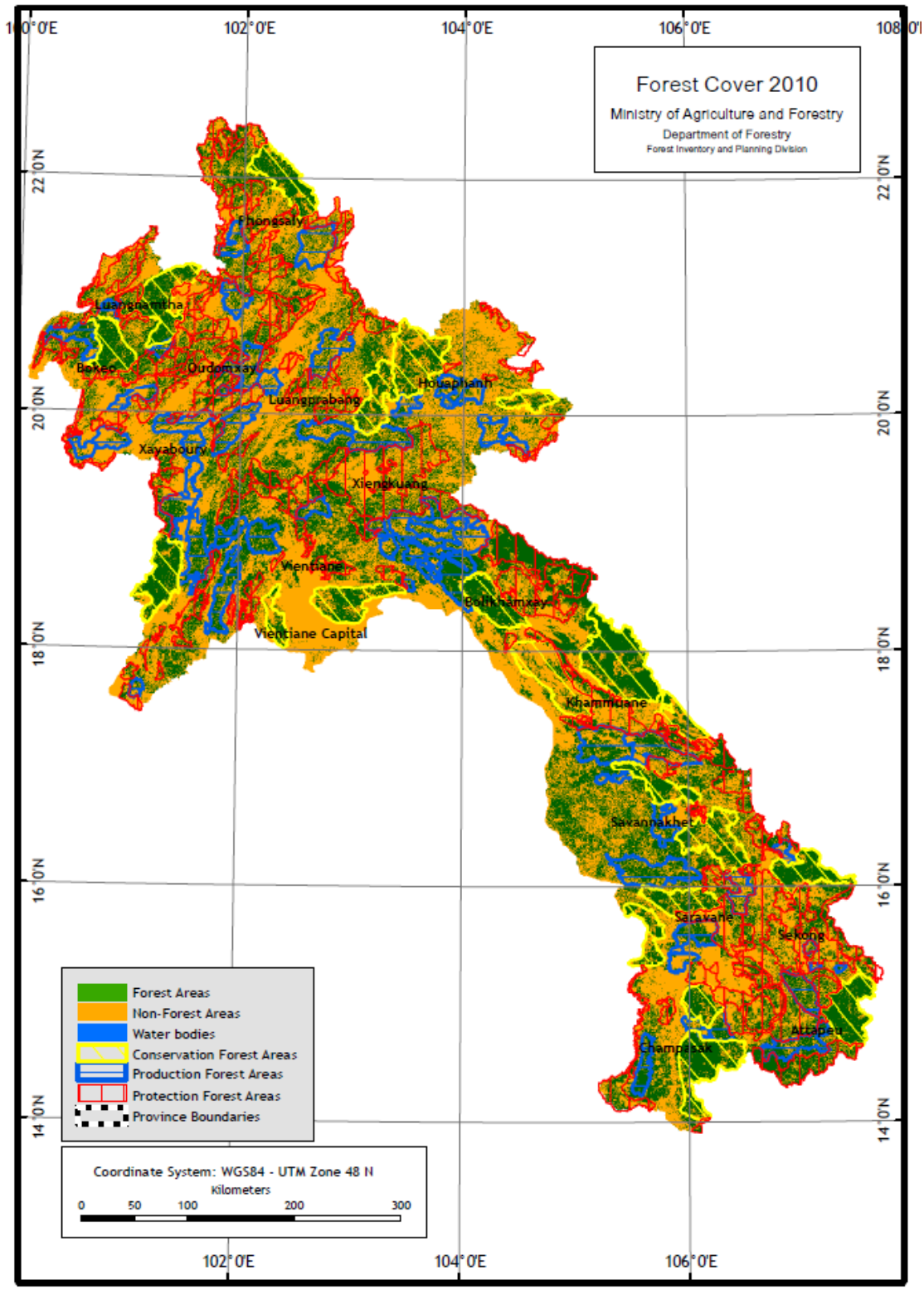
According to the Forest Law, DOF has been identifying and demarcating areas of three forest categories i.e. Protection forest, Conservation forest and Production forest (see map 1). National Conservation forest with total area of 3.2 million ha has all been officially established, but only a few areas have boundaries demarcated on the ground and management plans. Production forest has also all been officially established with a total area of 3.4 million ha and with SUFORD assistance ground demarcation and management plan formulation has been steadily progressing. As for protection forest the potential area of 4.3 million ha are already identified and agreed with local authorities, but are still waiting issuance of a PM Decree for official establishment and management. Management of these forests has just started and due to lack of human and financial resources, illegal logging and encroachment is still going on.

A major aim of forest policy has been the stabilization of shifting cultivation. This has had some success, but is still widely practiced and continued serious efforts are needed to deal with it.

Major potential deforestation reduction approaches

All the major National programmes for the forest sector as laid out in the Forestry Strategy to 2020 will contribute to net reductions in emissions in the long-term, mainly through increasing sequestration as forest cover is gradually restored. However, in order to reduce emission in the short-term more intensive efforts are required to address the various drivers of deforestation and degradation discussed above. The broad strategic options available for REDD+ are on the one hand, to concentrate on one or two major drivers where serious reductions could be achieved, and on the other hand to attempt to tackle all the drivers. There are various combinations between these extremes. The advantage of concentrating is that transaction costs can be minimized and human resources can be trained to deal with very specific issues. Human and financial resources that may be limited can be focused on to tasks where results can be achieved. However, it means that no experience is gained in dealing with other drivers that may be less serious but could get out of control. The advantage of spreading resources over all drivers is that some progress can be made on many fronts, but probably at a higher cost and so the total reduction in emissions for the same investment may be less than a more focused approach. Specific approaches for each driver are discussed under the strategy options.

Map 1: Forest Categories Map of Lao PDR 2010



2a.3: Summary of Quick Assessment Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$'000)				
		2010	2011	2012	2013	TOTAL
2a.1. Updating emissions forecasts	Update model data		10	10	10	30
	Coordinate with CC Office		10	10	10	30
						0
						0
						0
						0
Total		0	20	20	20	60
Government						0
FCPF						0
UN-REDD Programme						0
GTZ						0
JICA						0
World Bank						0

2b: REDD+ Strategy options

Organizations that will prepare and coordinate REDD+ strategy

The (to be established) REDD+ Office will be responsible for finalizing the REDD+ Strategy with guidance from the REDD+ Task Force and will submit it for approval to the NEC

Strategy options

A detailed strategy for REDD+ will be developed during Readiness implementation to deal with the various drivers of DD that have been identified during the R-PP preparation. Part of the strategy must be the early implementation of measures to increase sequestration in the future, as non-commercial tree plantations and regenerated forest take time to build up levels of sequestration that will be needed to compensate for the reducing scope for emission reductions This is in line with government policy to increase forest cover, but implementation requires many measures to be put in place, including identifying the land, training the people and finding the funds.

The REDD+ Strategy will develop and put in place the necessary **instruments (**institutional, regulatory, information and financial) to implement activities that will bring Lao PDR credits for emission reductions. During the Readiness Phase it will test and pilot a range of both policy measures and field activities that are expected to achieve significant emission reductions. The strategy options for the institutional, regulatory and financial instruments are dealt with under Implementation Framework (2c) and the options for information collection and management are covered under MRV (4)

The government has already decided that it will adopt a hybrid approach that will aim to attract fund-based credits in the short-term, while accessing the compliance market in due course, when international protocols have been agreed and at the same time allow participation in the voluntary market. Thus, a wide range of stakeholders will be involved and activities will also vary in scale from small local community based activities to larger government, donor and private sector sponsored activities. The analysis of the likely contribution of each of the drivers of deforestation and forest degradation discussed in Section 2a suggests that around half the emissions from LULUCF in Lao PDR are mainly under the control of the forest authorities; ie the degradation, and the other half is highly dependent on decisions and actions by other sectors that require land for other purposes.

A. DEFORESTATION

Deforestation, as discussed in Section 2a, is in large part driven by the need for land for investment in cash crops and tree plantations and minerals extraction and hydro-power, mainly FDI. It is also driven by expansion of smallholder agriculture for household and communal based land use, sometimes as a result of loss of land to FDI projects. Influencing these decisions will require a combination of better enforcement of the law and concession agreements and increasing awareness in government responsible for the respective sectors of the importance of minimizing further conversion of forest.

A fiscal policy option for influencing land use decisions would be the imposition of a tax or levy on forest land that reflected the value of the carbon stocks. This would make the clearance of forest much less attractive for many uses, but would compensate the government in situations where the value of the alternative is much higher, such as most mining operations. It would have the effect of forcing a proper socio-economic and environmental assessment of land-use decisions.

Field based activities to tackle the various drivers of deforestation as described below will be implemented in the three Forest management types (Production, protection and conservation) in order to find out whether different approaches will be needed in the future:

A1. Establish regulatory framework for carbon-sensitive Mining and Hydro Power development

The estimated annual CO_2 emissions from these two sectors are around 2.5 million tonnes or about 5.3% of the total emissions from LULUCF, (see Table 2 in section 2a above), which if reduced by 10% would bring REDD+ payments of about US$1.4 million. This would probably cover the costs of monitoring and law enforcement. However, the exploitation of the country's mineral resources and hydro-power potential has high priority in the government's development policy, and will therefore be difficult to influence.

Options for reducing emissions

There are two main ways in which emissions from necessary land clearance for mining and hydro-power can be tackled. The first is through the planning process where the promoters need to take note of forest carbon stocks within their concession areas and take steps to avoid unnecessary clearance of good forest. The second is by proper implementation of the obligatory Biomass Removal Plan (BMP) so that emissions from cleared biomass are minimized. The regulations relating to Concession Agreements for Hydro-power projects already make provision for this, as biomass left in the inundated area not only has a negative impact on water quality, but also results in emissions of CO_2 and CH_4 (methane) which is a more serious GHG.

These will be enforced in selected projects to assess the scale of emission reductions that can be achieved. The Department of Forestry, MAF, is responsible to manage and control the cutting and Biomass Removal Plan.

The main thrust of the strategy for dealing with these sectors must initially be **increasing awareness of their impact on CO_2 emissions** through focus group discussions with the companies involved. . (see 1b)

Activities

A study will be conducted to assess the carbon footprint of selected mining and hydro-power projects to determine the costs of actions required to reduce emissions from the biomass that must be disposed of. The study will also investigate the possibility of legislating for the developers to compensate or pay for emissions of CO_2 and methane resulting from their operations. Measures to offset as much as possible of the emissions through restoration of forest cover as required by the National Policy on the Environmental and Social Sustainability of the Hydro-power sector will be enforced. The NT2 dam project already conforms with these guidelines and is monitoring GHG emissions and water quality and will provide a benchmark for other

projects in the future. The REDD+ office will maintain close contacts with the NT2 operator and assess the results as they are published. The operator may be able to provide information on the costs and benefits associated with the preparation and implementation of the BMP and the impact on subsequent GHG emissions.

A2. Expansion of cash crops and tree plantations

The Conversion of forest to agricultural concessions and smallholder cash crops accounts for about 40% of the estimated total emissions from the LULUCF sector and is therefore the major contributor to CO_2 emissions from deforestation. Expansion of tree plantations including fast growing species and rubber also makes a net contribution of about 4.3 million tonnes CO_2, although this will decline in the next few years as growth and sequestration offset the emissions from the land clearance. Growing population, economic development and globalization are all driving demand for land for a wide range of purposes, and with "forest land" accounting for about 70% of the land area of Lao PDR, it is inevitable that some must be converted but it must be done in accordance with the Forest Law Art. 70, which requires that such conversion is specifically scheduled in the NSEDP. However, only a little over a half of that "forest land" still carries forest cover with >20% crown closure, and the strategy will **focus on preventing any further loss of this remaining forest**. Success in this will have a major impact on CO_2 emission reductions if conversion can be restricted to already degraded forest with <20% crown closure, since the carbon stocks on such areas are very low. If such land is converted to rubber or commercial tree plantations there may even be a small net increase in average carbon stocks in time.

Options for reducing emissions

A2a). Improving land-use planning and incorporating carbon stocks into an assessment of land values

The NLMA, Ministry of Agriculture officials, Provincial Governors and the Ministry of Planning and Investment staff and their staff at Provincial and District level, that are involved in identifying or approving the allocation of land for concessions need to be aware of the financial, environmental and economic consequences of allowing the conversion of forest to alternative land uses.

The Forest law also requires that entities approved to undertake forestland conversion are responsible for paying fees for technical service, royalties and conversion fees. In the case of temporary conversion such as mining exploitation and other production activities, the land must be restored and trees must be replanted.

The value of the carbon stocks on a hectare of forest, based on the value of the CO_2 released if the forest is cleared, ranges from over US$3,800 for well stocked forest to around US$ 360 for unstocked forest (see figure 1 below for typical carbon stocks in various forest categories). If the clearance of well or medium stocked forest can be avoided, the potential REDD+ payments will be substantial. If carbon value is applied it is more likely that commercial developers would opt for land with the lowest possible carbon stock.

High-stock (>70%)	Medium stock (40-70%)	Low stock (20-40%)	Fallow /unstocked	Plantation (Teak/6 yrs)
~220 t C/ha	~62 t C/ha	~20 t C/ha	~32 t C/ha	~51 t C/ha
~792 t CO_2/ha	~223 t CO_2/ha	~72 t CO_2/ha	~115 t CO_2/ha	~184 t CO_2/ha

Stakeholders must work together to raise awareness on the issue and decide on how and where to put it in to practice on a pilot scale.

There are a number of on-going projects that are involved in land-use planning at different levels and in different parts of the country that will provide vehicles, to which REDD+ funds can be added to incorporate assessment of forest quality and carbon stocks into their work in selected villages, district and provinces to pilot the planning work needed and to later assess the reduction in emissions achieved. Such projects include the GTZ funded LMRP, the ADB funded SRNMPEP which is supporting land-use planning in 5 southern provinces, and the ISP Project funded by Finland and supporting WREA to develop integrated spatial plans for the selected Provinces.

Activities

The additional funding to these projects would be to cover the additional costs of undertaking a base-line assessment of emissions in the selected administrative unit, undertaking appropriate sampling to measure the carbon stocks, preparing an emission reduction plan and then monitoring changes in carbon stocks on an annual or biennial basis to assess the impact of the planning on land allocation and land-use and CO_2 emissions.

Providing additional funding to one or more of these projects to incorporate the necessary additional work into the planning process will be a very cost effective as the additional funding required to incorporate assessment of carbon stocks into LUP could be saved by the avoidance of the clearance of a few hundred hectares of forest. The costs would include the cost of establishing the baseline and monitoring the results.

Costs and benefits

The average value of current emissions at the different administrative levels (national emissions divided by the number of units) is around:

- Average provincial emissions ~ 400,000 tonnes CO_2 Value ~ $2 million
- Average district emissions ~ 45,000 tonnes CO_2 Value ~$ 225,000
- Average village emissions ~ 650 tonnes CO_2 Value ~ $ 3,250

In practice there will be big variation with some having much more and others much less and so it is important to select the units for piloting REDD+ activities with care. The above figures suggest that the District is the most appropriate level to do such land-use planning, since it will be easier to establish a baseline for a District and the work can be done in sufficient detail to have reliable and verifiable results.

The likely additional costs to meet REDD+ requirements covering a baseline assessment, carbon stock assessment and mapping, awareness raising among district and provincial staff and monitoring and reporting for LUP at a District if it is incorporated into existing or planned work, is estimated to be around US$ 30,000.

A2b). Reducing deforestation and promoting forest protection, regeneration and restoration by smallholders

This will be tackled initially in a similar way at the local level through the PLUP but will also include an assessment of the scope for community based forest protection, regeneration and restoration in the forests that lie within the village administrative boundary. Such forest may be part of a state forest management unit, or it may be designated as Community or village forest. An assessment of carbon stocks within the village boundary will be undertaken by members of the village, given suitable training that will provide some initial cash income, raise awareness and provide the community with the skills to monitor the situation in the future. Land for expansion of agricultural and other activities should then be allocated in degraded forest land with little capacity to regenerate naturally. An emission reduction plan will be developed as part of the community forest management plan and areas with high carbon stocks will be identified for protection by the community whether village forests of parts of provincial or national forests, which will trigger some REDD+ payments. Other areas of degraded forest that are not needed for agriculture will be identified and designated for rehabilitation and natural regeneration for REDD+ funding.

Additional land needed for agriculture is a function of the agricultural productivity and the DAFOs will assess the scope for increasing agricultural productivity through improved cultural techniques, increased inputs and better extension services as an alternative to clearing more forest. Again there is the possibility to use REDD+ funds to support such actions if they can achieve measurable net reductions in CO_2 emissions.

On-going and planned Activities

Activities in support of this option are already being piloted in Conservation Forest by GTZ and KfW in the north and in former Shifting Cultivation areas by JICA funded PAREDD also in the north. Additional activities will need to be piloted in other forest management types and in other regions of the country. This will be done through cooperation with other on-going or planned donor supported projects such as SUFORD, LMRP, BCI, SRNMPEP, ISP.

Identification of villages for piloting: At the village level the value of CO_2 emissions avoided will be subject to much higher variation than at district and provincial levels, since forest is not distributed evenly across the country. The average land area per village is around 2,200 ha. (though some have much larger territories) and the average village has around 950 ha of forest, of which 5% may be dense forest, some or all of which may be within an NCF, PFA or Protection forest area. There may be a similar area of degraded forest, secondary forest or bare land within the village boundary which can potentially be restored or just protected to allow it to re-grow naturally. Deforestation within a village territory may be the result of the

community's own activities or an outsider's activities while other villages may have had little or no deforestation recently. It will therefore be necessary to prioritize villages where intervention will achieve significant emission reductions based on the extent of forest within the village boundary and the level of threat by the local community. The incidence of forest clearance by smallholders to grow cash crops is generally higher in the more accessible areas, since the farmers are often encouraged by traders and the National census shows that about 75% of the population lives within 1 hour travel time from a District town. This data will be overlaid with forest cover maps to identify those forest areas that are highly accessible and are in or near areas with high population density and are therefore likely to be under serious threat. Villages that are within or adjacent to these accessible forests will be identified, and a selection of those that are located within the geographical area covered by NLMA's PLUP program or one or more donor funded projects undertaking PLUP will be selected for piloting REDD+ activities.

Village planning: the activities will include the establishment of a baseline, assessment of carbon stocks, the preparation of an emission avoidance plan, awareness raising among the community members and the village authorities and regular monitoring of the outcome. A **community forest management and emission avoidance plan** will be prepared that covers **protecting areas of good forest and secondary forest** that has the capacity to regenerate naturally as well the enrichment planting or restocking of forest that is degraded to the extent that there are no seed sources for important species. Based on the estimates of the net reduction in emissions in the coming years, the likely level of REDD+ payments can be calculated. The forest management plan will also put the collection of NTFPs onto a sustainable basis as this will have no measurable impact on carbon stocks and can contribute to livelihoods. The opportunity cost to the community associated with refraining from clearing good forest and using land where forest is already degraded as well as restrictions on the cutting of timber for local domestic use, and in some cases participating in illegal logging will be estimated and will **need to be resolved in the consultation process**. In the longer term the aim should be to meet the local demand for timber from community plantations, but these will take time to become productive, and so transitional arrangements will need to be developed.

Benefit sharing: Villagers who have been clearing forest will have an opportunity cost if they forego it, that may be as much as US$ 2-3,000 per ha if they have been growing corn or cassava. The question of who should get paid or compensated for ceasing this activity is likely to be very contentious. If the whole community is compensated the average household will have relatively small benefit, and certainly not enough to compensate those that have been clearing forest to grow corn. If on the other hand, only those doing the clearing are compensated, this will provide an incentive to other farmers to start clearing. There is also the question of who pays for the transaction costs necessary to access the REDD+ funds. Holding discussions with villagers on various ways of dealing with the issue, testing their response when they are more aware of the issues, and arriving at an acceptable benefit sharing arrangement, will need to be piloted in a range of villages across the country that represent the range of conditions that exist.

Costs and benefits

The transaction costs of working at village level are likely to be high in relation to the value of the emissions avoided, but an important aspect of the piloting work will be to determine what these costs are, and identify ways of minimizing them. According to NLMA the current direct costs of PLUP are around US$ 2,800 per village and it is estimated that the addition of the REDD+ activities will increase the cost to around

US$ 8,000, including the cost of third party validation. This total includes temporary wage payments totaling about US$ 680 to villagers involved in the field surveys and monitoring.

The GTZ/KfW funded CLiPAD project is supporting such a process with villages where the forest is under extreme threat. The results will provide valuable information on the potential for REDD+ + in due course and similar activities will be undertaken in other regions of the country in production and protection forest with varying levels of threat to determine the conditions under which REDD+ can be successfully applied to reduce emissions.

As indicated above the value of the carbon stocks on a hectare of forest will range between US$ 380 and US$ 3,800 per ha,, depending on its condition. Assuming that this work will focus on villages with reasonable remaining areas of forest and a high threat and that the clearance of 10-12 ha of medium to dense forest is avoided, the REDD+ payments for emission reductions could be anywhere between 1,000 to 8,000 tonnes CO_2 worth US$ 5,000 - 40,000. In addition to payments for the avoidance of emissions from deforestation at the community level there is also the possibility to pay villagers to replant areas of forest that have been cleared under REDD+ provisions. This will focus primarily on Protected Areas and on Protection forest. It will also be important to support a range of livelihood activities that will provide alternative income sources that are less environmentally destructive.

In the long-term, such activities could achieve substantial reductions in CO_2 emissions from LULUCF nationally, but first they need to be piloted in 4-5 villages in 3-4 Districts across the country, representative of a range of forest types and conditions, during the Readiness phase over the next three years. Success for the approach would result in reducing emissions by between 15,000 and 120,000 tonnes annually with a total value of between US$ 75,000 and US$ 600,000 depending on the quality of the forest saved.

B. FOREST DEGRADATION

Forest degradation has been taking place for many years for many reasons, and the strategy will address both the avoidance of further degradation of the forests and the regeneration and restoration of degraded areas. The latter is the main focus of government policy. In recent years there has been substantial investment in tree plantations that will have a short-term impact on net emissions of CO_2 in the next few years, but as they are harvested and replanted the net effect will decline. Rubber plantations will have a longer-term impact on net emissions. Under the Option A2 above reducing emissions due to land clearance for commercial plantations, which will be classed as Production forest will be addressed, while measures to tackle forest degradation will include restoration of degraded conservation and protection forest. Restoration of degraded Village forests or areas managed by Communities is dealt with as part of the 2b above

Reducing CO_2 emissions from forest degradation is primarily an issue for the forest sector, although the underlying drivers are closely linked to the demand for timber both nationally and regionally, which drives unsustainable and illegal logging. Traditional (pioneering) shifting cultivation with a longish fallow period can be considered as a driver of forest degradation, since it results in a permanent reduction in carbon stocks, but not in total loss of forested area. This is different from the smallholder expansion referred to under deforestation, where forest is cleared for the cultivation of cash crops and will need to be tackled in a different way. Being a traditional way of life, it is mainly practiced by the ethnic group communities that are

mostly located in remote areas and are not so subject to pressure from traders and others promoting cash crops. It is mostly practiced on steep sloping land in the mountainous parts of the country and therefore has implications for soil and water conservation as well as biodiversity.

B1 Forest Harvesting

B1a. Sustainable Forest Management

At the present time about 14% of the area of Production forest is being managed in accordance with FSC principles for Sustainable Forest Management with the support of the SUFORD project. The DOF will be applying these principles to the remainder of the 3.1 million ha of Production Forest Areas in the coming years. The experience from SUFORD is that the introduction of SFM results in a reduction of emissions as a result of the delineation of the forest boundaries and the participation of local communities in protection of the forest. These emission reductions can be achieved by extending the SFM to all Production Forest. Studies in the SUFORD Production Forest Areas show that current harvesting techniques result in substantial quantities of residues being left in the forest in the form of high stumps, split and crooked logs and branchwood that could be utilised. Efforts to minimise the quantity of residues and collateral damage to standing trees that can result in death or decay will also have a positive impact on reducing emissions and will be tested and evaluated to assess the potential reductions. The recently issued Harvesting Codes of Practice require the application of Reduced Impact Logging in Production Forest Areas, and in Infrastructure projects and these will be applied in all PFAs and infrastructure logging operations as an important measure for reducing emissions from legal logging operations. Studies by Putz and Pinard (1993)[1] in Malaysia suggest that emissions could be reduced by around 30% with improved management of harvesting operations.

B1b. Unregulated and illegal logging

The true scale of illegal logging is unknown but it is widely recognized and acknowledged as an important problem. Data on the changes in growing stock in the forest indicate that the mean growing stock has declined at a rate of 2-3% per year over the past two decades. This is reflected in both a decline in the mean stocking of the different forest canopy density classes and in a shift in area from the denser canopy classes to less dense classes. The reduction in growing stock nationally appears to be around 18 million m^3 per year, of which about 10 million can be accounted for, either due to forest clearance or harvesting. This level of illegal logging represents about 1 tree in every 20 ha of forest (>20% CC) every year.

The Forest Law, discussed under governance in section 2a above provides the legal basis for tackling the issue from the supply side where DOF and DOFI need to improve detection of illegal logging and enforcement of the Law**,** and there are several ways in which this can be done. DOFI will have a new five year plan for 2011-2015 that includes many measures to improve performance as more staff are employed and trained. The REDD+ strategic options for dealing with illegal logging will be undertaken in support of DOFI's five year plan. The government's second target for the forestry sector of a sustainable supply of logs for local processing, is becoming increasingly difficult to achieve as a result of the prolonged degradation of

[1] Putz, F.E. and M.A. Pinard, (1993) Reduced impact logging as a carbon offset method, *Conservation Biology* Vol.4 No4. Blackwell:Oxford

the forest resources in the past.. If the problem of illegal logging can be successfully addressed with the help of REDD+ funding it will be a major step towards providing the basis for a sustainable wood processing industry.

Options for reducing emissions

B1b.1 Improved law enforcement

There are three levels at which most illegal logging is conducted: the first is organized and relatively large scale, whereby harvesting contractors cut more trees than allowed by the quota: the second is also organized and relatively large scale using heavy machinery and involves (mainly foreign) operators who tend to target Protected Areas and Protection forest; the third is small scale conducted by villagers that usually involves chain-sawing felled logs into planks for easy transport from the forest.

Activities

The first approach is to enforce the provision in the Forest Law Art 49 harvesting is only allowed in Production Forest Areas that has a Sustainable Management Plan and in infrastructure development areas. Art. 55 allows the government to establish logging units and all logging and harvesting equipment belonging to the unit must be registered and all logging must conform with the Code of Harvesting Practice for both PFAs and infrastructure projects. This would enable the government to restrict the harvesting capacity to a level consistent with the authorized quota. Any chainsaw, haulage truck or other machinery that is not registered should be impounded. This would enable the authorities to improve monitoring of harvesting activities. For REDD+ Readiness registration of harvesting machinery should be enforced in at least one District in order to assess the success or not of the measure.

In order to establish a baseline in the selected District, a survey will be undertaken to assess the numbers of 6WD winch logging trucks (Sa Loe) and other harvesting machinery operating, the average daily capacity of a truck and the number of operating days in a year in order to derive an estimate of the total harvesting capacity in the District. A sample survey of the forest areas to count and measure the numbers of recently cut stumps would provide a comparison to judge the reliability of the estimates.

The major reason for illegal logging being so damaging is the collateral damage to other trees and to poles and saplings that are so essential for the recovery of the forest. The baseline survey will therefore also attempt to measure the extent of this damage and the quantities of residues associated with illegal logging.

Costs and benefits

The baseline surveys are additional tasks to those performed routinely by DOFI and they need to be piloted in order to demonstrate how effective such measures can be in controlling illegal logging. Both surveys (harvesting machinery and illegal logging baseline) could be contracted out to consultants or NGOs. Taking the area of forest (>20% crown closure) in a District as about 100,000 ha the baseline survey will cost around US$50,000 and the machinery survey about US$2,000. Based on the estimate of illegal logging above it could be expected that around 5,000 trees with a volume of about 12,500 m^3 are being harvested illegally in a typical District

B1b.2 Analyzing and monitoring wood consumption

A second approach is to obtain a reliable measure of the scale of the problem so that sufficient resources can be allocated to dealing with it. The best way to achieve this is to have an accurate and reliable measure of the domestic demand and imports and exports of wood products. This provides a measure of the total consumption of wood that can be compared with the officially sanctioned harvest production under SFM and special licenses for clearance for infrastructure projects. The difference is a measure of the volume being harvested illegally. In order to develop this information it is important for the MOIC, Department of Import and Export and the Customs Department to record and publish data on ALL exports of wood products. At the same time DOF needs to ensure that all sanctioned log harvesting from PFAs and from infrastructure projects is recorded and published and the NSO should be supported to carry out a national survey of wood consumption along the lines of the periodic Lao Expenditure and Consumption Survey (LECS).

Cooperation will be needed from the MOIC and the Customs Department of MOF to tackle the demand side. The policy of MOIC is to restructure the wood industry in Lao PDR to increase the value added in the country, and a number of measures have been put in place to do this, and others are currently under investigation. Large volumes of chainsaw squared timber are transported across national borders. Some of this is covered by special agreements and barter deals agreed at government to government level. However, there are also substantial volumes smuggled out of the country, and this is having a very harmful effect on both the forests and the wood industry of Lao PDR, which is deprived of raw material to which it could add considerable value and increase employment opportunities for the increasing number of educated school leavers.

Activities

Incorporate consumption of all wood products, including wood for house construction and maintenance, furniture, household and agricultural materials and utensils into the upcoming LECS V, due in 2012/13 carried out by NSO. This will give the consumption by households but will not include use of wood in construction and industry. This latter will need a separate survey, but can be done by stratified sampling of sectors, regions and urban/rural

Data on exports is recorded at border crossings, but currently data is incomplete and not reported. The Customs Department (MOF) and DIMEX (MOIC) and DOFI will need to collaborate to ensure that the data is collected continuously and is recorded and copies are sent to DOF for incorporation into strategic plans for the sector. Combining the domestic consumption data and the export data will give a measure of the total demand, which together with net exports must be equal to the current actual supply. The scale of illegal logging can then be assessed by difference from the officially authorized supply.

Costs and benefits

The additional costs will be minimal, since the additional information required from the LECS should add little to the overall cost. The survey of industry and construction may also be incorporated into surveys planned by NSO and DOF will have discussions on the most cost-effective way of obtaining the information. Similarly, with the export data the main requirement is ensuring that the data is recorded, published and distributed to DOF. This may need some additional training of staff at border posts.

B1b.3 Surveillance

A third approach is monitoring and surveillance of forest areas to spot illegal logging which is extremely difficult due to the area to be covered and the poor access conditions. DOFI (being a new department) has been focusing on staff recruitment and training and at present has few vehicles. In accordance with the DOFI Strategic Pan to 2020 Intelligence Gathering is to be strengthened and a Rapid Response Team is to be established to launch more intensive campaigns to monitor illegal activities. Technology to strengthen DOFI's capacity for surveillance will be investigated to strengthen DOFI's ability to detect any unauthorized logging while it was actually taking place and move quickly to catch the perpetrators "red handed".

Activities

This activity will be combined with the Law enforcement and equipment registration in the same District in order to minimize the costs of deploying staff and avoid the need for additional baseline emission levels and measurements of the extent of illegal logging to be made. Trial will be needed to assess the best operational system, and discussions between DOFI and the military will be needed in order to get clearance for working in the selected area.

Costs and benefits

The cost of surveillance will need to be investigated as part of the evaluation of appropriate technology and should take account of the other benefits in terms of reducing the negative impact on biodiversity, soil and water conservation and government revenue from illegal activities.

B2. Shifting Cultivation

The traditional shifting (rotational) cultivation practiced by ethnic groups is almost entirely in the uplands and remoter parts of the country and changing the traditional practices will need careful and sustained support. Two essential ingredients will be the consultation and awareness raising process (see section 1b)(in the community language) to raise understanding of the reasons for changing and the development of acceptable alternative and improved livelihood opportunities that will contribute to poverty reduction and local food security. Studies have shown that a number of agroforestry systems meet these requirements and are readily adopted by ethnic group communities.

Options for reducing emissions

B2a): Improved extension to ethnic group communities on agroforestry

There have been a number of projects run by NGOs and research undertaken by NAFRI aimed at decreasing dependency of ethnic communities on upland rice production and diversification of the crops and NTFPs through the use of agroforestry systems. Projects have typically provided occupational training, developed agricultural production areas and sustainable farming systems, improved sanitation facilities and water supply, provided primary health care, including village pharmacies, education and communication facilities, community-based savings and credit schemes; and strengthened capacity of project staff and village institutions through participatory planning and implementation processes. An evaluation of one such project in 2006 found that many farmers had ceased growing upland rice and

had planted all the sloping former swidden fields to mixtures of long-term forest trees and medium-term fruit trees, together with tuber and fodder crops and cash crops.

The agroforestry model introduced on the sloped lands is one that the farmers designed themselves, largely based on their experiences with NTFPs. They are familiar with the crops planted and are certain that they can consume the output harvested --- thus contributing to family and community food security --- and can sell surplus output in local markets and to traders. Such projects provides a model that can be used elsewhere to restore degraded former shifting cultivation land and allow the secondary forest to gradually revert to a high forest condition.

Activities

In a representative selection of Districts where PLUP is being implemented as described under option A2b above, and where shifting cultivation is the main agricultural system, NAFRI and NAFES will be engaged in discussions of agroforestry based livelihood systems the same as or similar to those developed by the *Community Based Rural Development Project* referred to above, with the communities concerned during the PLUP stage. Advantage will be taken of development projects such as SRNMPEP and BCI that are supporting livelihood improvement in upland areas, to incorporate a REDD+ component, so that transaction and management costs are shared. The potential emission reductions will be determined by the emission reduction plan produced as part of the enhanced PLUP. The value of the sequestration potential from the regrowth of secondary forest, protected and saved from further clearing, together with emission reductions from protecting good natural forest and restoring degraded areas will be estimated and a benefit sharing arrangement negotiated.

Costs and benefits

The main additional costs will be for the assessment of carbon stocks and the development of an emission reduction plan, which would be more or less the same as the PLUP costs for dealing with smallholder forest clearance. Some additional costs will be incurred for training of the extension staff in agroforestry systems that are appropriate for the particular conditions where the activity will be piloted

B2b) Private sector support for agroforestry and improved livelihoods and rehabilitation/restoration

In Savannakhet and Salavane Provinces, a multi-national company has successfully developed a plantation model using PLUP to identify suitable land and then an agroforestry system that allows local farmers to cultivate between the trees planted in rows at 10m spacing. Working on a rotation basis, a family always has access to the land between the rows of trees during their first and second years. The company reports that 85 families (all the residents in one village) have completely given up shifting cultivation as they can grow all their needs on the land allocated in the plantations. If these families would have cleared 1 ha each of secondary forest with shifting cultivation, had they not joined with the company they would have generated around 9,500 tonnes of CO_2 with a current value of about US$47,500. Developing a case study of this activity was proposed at the consultation workshop, and could provide a valuable model for tackling shifting cultivation in many parts of the country, by providing a better alternative livelihood opportunity for communities that traditionally rely on shifting cultivation. In addition to the immediate reductions in emissions from the reduced forest clearance, the secondary forest will grow and sequester increasing quantities of CO_2.

Costs and benefits

The main additional costs will be for the assessment of carbon stocks and the development of an emission reduction plan, which would be incorporated into the PLUP that is currently undertaken by the company. There will also be monitoring costs

B2c) Research and development of improved livelihood systems as alternative to shifting cultivation

In 2004 a Workshop was held in Luang Prabang on poverty reduction through stabilization of shifting cultivation during which about 18 agroforestry technologies that were being tested or evaluated in the uplands of Lao PDR were described[2]. Many of these were at a preliminary stage and the descriptions of most contained little quantitative information on costs, yields and returns. Follow-up research into the systems described and any others that have been adopted will provide invaluable information for NAFES, PAFES and district extension staff, and needs to be collated and published, and research initiated into any gaps that become apparent.

B3). Carbon sequestration through forest regeneration and reforestation.

A major sector target set by the Forestry strategy 2020 is to naturally regenerate up to 6 million ha and plant up to 500,000 ha in badly degraded forest areas as an integral part of rural livelihood improvement. About 40% of the 3.1 million ha of Production Forest Areas is badly degraded, but has sufficient stock that with protection and management it will re-grow and sequester substantial quantities of carbon. Other areas of production forest and parts of Protection and Conservation forest areas are too degraded to regenerate naturally and require substantial investment for enrichment planting or re-stocking. In the longer-term it is anticipated that REDD+ funds will become available. During the Readiness Phase, some pilot work will be undertaken in restoration of forests in different states of degradation. Much of this work will be funded by government through the Forest Development Fund and current projects such as SUFORD, CLIPAD and PAREDD and where possible further pilots will be incorporated into projects currently under preparation such as BCI. During the Readiness Phase the REDD+ Office will review all the initiatives, and determine whether there are important gaps in the coverage, for example, regionally or in forest management types, that need to be filled with additional funding to build comprehensive experience for the future.

Implementation of REDD+ pilot activities

During the REDD+ readiness phase the activities described above will be **implemented at pilot and demonstration scale** in priority areas and will be incorporated into existing or planned projects. The aim will be to have demonstration activities that address one or more drivers in each of the forest function categories, in different regions and with different stakeholders such as Government authorities of different sectors (with and without donor support), NGO's, the private sector168, civil society and communities (including different ethnic groups).

The **spatial focus of pilot initiatives** to avoid forest degradation will be undertaken in Districts selected for the high level of threat and disturbance from illegal logging

[2] Bounthong Bouaham *et.al.* Eds. (2005) Poverty reduction and shifting cultivation stabilisation in the uplands of Lao PDR, National Agriculture and Forestry Research Institute, Vientiane, Lao PDR.

and shifting cultivation, taking account of practicalities, particularly access. The on-going PAREDD project is piloting activities related to shifting cultivation and CLIPAD is piloting a range of activities to address both deforestation and degradation within NCFs and will provide important information in due course The focus of pilot initiatives to avoid deforestation will be in **Districts and villages with a combination of substantial remaining areas of forest and a high level of threat,** in provinces where there are on-going related activities such as the SUFORD, SNRMPEP, BCI and ISP projects. Three of these projects are in southern provinces and the scope for incorporating REDD+ pilot activities into projects in the central and northern regions will need to be investigated early in the implementation phase. Districts in the NLMA PLUP program may also be included if they meet the criteria above and provide geographical coverage

The **support for the implementation of preliminary REDD+ strategy options** and related measures using FCPF funds will be limited to demonstration and pilot interventions and especially to REDD+ 'added value' measures in the context of planned initiatives of the government, donor agencies, NGO's and the private sector[1]. The focus will be placed on "REDD+ core topics" including institutional development, regulatory framework development for REDD+ strategic options, financial management, benefit sharing, information management, carbon registry and capacity building. Procedures and rules on how FCPF money can be accessed and used in the context of REDD+ pilot interventions will be developed. It is important in the context of the RPP implementation that lessons and experiences generated through the different REDD+ pilot initiatives will be capitalized, documented, appropriately stored and made accessible.

Results of these evaluation efforts and up-to-date information on the status quo of international negotiations on REDD+ are required to formulate a REDD+ Strategy during the last year of the RPP implementation period to provide guidance for further REDD+ developments in Lao PDR (during implementation phase and beyond). This strategy has to build upon relevant sector strategies and needs to be based on decisions related to the REDD+ key topics taken during the readiness phase. To prepare for larger scale application of REDD+ efforts it has to be integrated into relevant sector and therefore overall socio-economic development planning.

Capacity Building

Capacity building is needed at all levels among all national stakeholders and will be prioritized to support the implementation of the pilot activities. Where the activities are supported by donor projects it is anticipated that capacity building will be part of the package, so that the main emphasis will be on strengthening MAFs, DOFs and DOFI's capacity to plan and implement those actions where donor support is not expected in the immediate future. The REDD+ Office will carry out a needs assessment early in the Readiness phase so that training and other measures can be targeted.

Risks

The consultation process conducted so far with the main sectors that are stakeholders in REDD+ has been at the national technical level, and has shown there to be strong support for the measures needed to address the high level of emissions from LULUCF at present. However, there is widespread awareness that there are strong vested interests in all the activities that drive deforestation and degradation, especially illegal logging and land clearance for agricultural and forestry concessions. These vested interests are at national and provincial level, and in some cases are driven as much by international political agreements as by the prospects of personal

gain. The success of REDD+ will depend as much on the REDD+ Task Force's ability to convey the message that the environmental, social and economic costs of Business as Usual are very high in terms of potential revenue foregone, resource depletion, environmental destruction and livelihood disruption as it will on the outcomes of the various measures to be implemented during REDD+ iness implementation..

Institutional capacity is currently a serious constraint that will take time to overcome as the problem is deeper than just lack of experience. Departments do not yet have strength in depth and depend heavily on a few overworked (and underpaid) senior staff who do not have the time or the back-up necessary to understand and apply the vast amount of information being generated both nationally and internationally.

A concern that has been expressed frequently during the consultation process relates to the perceived high level of risk that funds will not reach the intended beneficiaries, or will be diluted or delayed as a result of various bureaucratic interventions. The benefit sharing and fund flow issues have not yet been discussed at length and in depth with all concerned stakeholders, and the Ministry of Finance has not yet provided guidance on what it considers as the best way to handle money from funds and the compliance markets, and whether money from the voluntary market will go directly to the promoters of the activities or will also be handled centrally.

There will inevitably be leakage from the areas where emission reduction activities are being piloted during the Readiness phase and it will be important during implementation to monitor any leakage that may be taking place, in order to determine whether it is a real problem and one that needs special measures to control. Local leakage, resulting from activities being displaced within a province may be detected by monitoring emissions from Districts contiguous with the one in which the REDD+ activities are taking place. During the establishment of REDD activities stakeholders who will change their actions (e.g. agree to moving or restricting their concession or land-use practices) will be monitored to ensure that they comply with their agreement and do not continue at another location.

Table 2b Summary of REDD+ Strategy Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$ '000)				
		2010	2011	2012	2013	Total
2b.1. Mining and Hydro-power	2b1.1. Monitoring		50	50		100
	2b2.1. Province		120	60		180
	2b2.2. PLUP Protected Area		100	100	100	300
2b.2. Land use planning	2b2.3. PLUP Protection forest †		100	100	100	300
	2b2.4. PLUP Production forest		100	100	100	300
	2b2.5. Community forest protection [a]		150	150	150	450
	2b2.6. Forest restoration		300	600	600	1,500
	2b3.2. Law enforcement		120			120
	2b3.2.Wood consumption		100			100
2b.3. Illegal logging	2b3.2. Surveillance		165	100	100	365
	2b4.1. Extension		100	100		200
	2.4.2. Private sector		100	100		200
2b.4. Shifting cultivation	2.4.3. R & D		100			100
	2.5.1.1. Prov/Dist/Vill level		100	100	100	300
2b.5. Capacity building						
	Total	0	1,705	1,560	1,250	4,515
Government						
FCPF						
UN-REDD Programme						
GTZ						
JICA						
World Bank						

2c. REDD+ Strategy Implementation Framework

The **REDD+ implementation framework** is to provide for the appropriate institutional, financial, regulatory and technical capacities required to successfully implement REDD+ in Lao PDR in accordance with international requirements for future REDD+ efforts. It has to ensure credibility and provide for transparent, equitable, efficient and effective decision making, implementation and monitoring of REDD+ efforts. Its purpose is to set out institutional, financial, legal and governance arrangements that are necessary to enable Lao PDR to implement the REDD+ Strategy, when formulated and meet obligations under an anticipated future REDD+ regime. The desired REDD+ implementation framework will be developed and established during the readiness phase based on further analytical inputs, intensive consultations, as well as evaluation and synthesis of experiences gained during testing different approaches in the context of REDD+ pilot/ demonstration initiatives.

The three main instruments that government will use for REDD+ implementation are institutions, fiscal measures and the regulatory framework. Together with information management, these will form the basis of the Implementation framework. For effective implementation each of these instruments need to be designed for the tasks that will need to be undertaken. Important issues that must be resolved during the Readiness phase are: financial management, benefit sharing system, information and knowledge management and the establishment and operation of a carbon registry. Complementary analytical and design inputs, stakeholder participation and consultation, as well as capacity building are the main means to make well informed decisions, and so there needs to be flexibility and responsiveness to allow the integration of experiences, by promoting joint learning and decision making, as well as emerging requirements resulting from future REDD+ related negotiations at international level such as COP 16.

Success or failure of REDD+ efforts will depend very much on how institutions actually lead and coordinate across sectors and stakeholder groups, how benefits are shared and how various interests are satisfied or mediated. During the readiness preparation phase **the process to make required decision jointly will be the key** to secure transparency and participation, but also efficiency and equity. Based on experiences from the region and beyond it will be necessary to build technical understanding among stakeholders on key issues before making decisions and to provide sufficient time to make decisions.

Institutional arrangements

It is anticipated that the institutional arrangements described in Section 1a will be established early in the Readiness phase, and the effectiveness of the arrangements will be tested over the next 2-3 years. It is likely that some modifications will be needed as experience is gained and towards the end of the Readiness phase a review will be undertaken to inform a decision on the long-term arrangements. It is possible that REDD+ becomes mainstreamed into forest management practices and land-use decisions and that a modest REDD+ office is all that is required at national level, mainly to coordinate activities, maintain the consultation process and a carbon register, and undertake MRV.

.At the sub-national and local level, it will inevitably take longer for REDD+ to become mainstreamed, and there will be some provinces that have not participated in any of

the piloting activities. During the Readiness phase the proposed provincial arrangements will be tested and refined and will then be rolled out in all provinces. In order to ensure the participation of all stakeholders and maintain consultation, Provincial REDD+ Coordination Committees that include relevant government agencies, NGO's, private sector and civil society representatives chaired by the governor's office will be required, eventually in all provinces.

Regulatory Framework

REDD+ readiness requires a **regulatory framework** that ensures transparent, effective and efficient implementation of REDD+ strategic options. Although regulations relevant to implementation of REDD+ strategies for tackling the drivers of DD are generally in place, there are important new issues that require a special **REDD+ Regulation** issued by the government at an early date. The type and degree of the regulation will be identified during R-PP implementation. This will provide clarity related to key REDD+ issues, in particular ownership of carbon rights, the obligation to compensate government for carbon stocks that are liquidated, should this be adopted as policy, the benefit sharing system, financial management and distribution mechanism, how REDD+ activities are to be developed and sponsored and which organizations, groups and individuals are eligible to participate in REDD+ activities funded both from national and international sources and the voluntary market. This is necessary to control the speculators and brokers who are offering to help communities to obtain REDD+ funds. It will also be necessary to legalize the institutional arrangements outlined above, including roles and responsibilities among government authorities and other involved stakeholders. This will contribute to harmonizing diverging interests among involved stakeholders. It will require a sequenced approach to ensure that decisions related to key issues have sufficient time and needs intensive stakeholder consultation. Based on this, more specific sectoral instructions will be formulated and enacted by relevant Ministries, most likely towards the end of the readiness phase or beyond. Beside this, a separate regulation may be required to establish a separate REDD+ fund, or in case of using an existing fund, the related/ existing PM decree would need to be amended.

Financial arrangements

In line with the strategic decision to apply the hybrid approach in Lao PDR, funding for REDD+ will come from different international funding sources, such as bilateral and multilateral projects and relevant funds, and eventually also from voluntary carbon markets and ultimately from the anticipated future compliance market mechanism, expected to be a part of a post-Kyoto arrangement in 2012. The REDD+ Readiness phase will be used to establish appropriate **financial management arrangements** that can deal with the multiple funding sources and ensure that funds get to the intended beneficiaries. Unlike project funds, those payments that are performance based and stakeholders that perform, must have their due payments honored. The financial management also needs to ensure appropriate mechanism and procedures to efficiently and transparently disburse FCPF funds to implement the RPP to ensure accountability and due diligence. Preliminary discussions have been held with the Ministry of Finance and with the heads of current special funds such as the Environment protection fund, and these discussions will be continued and intensified in order to determine the possibility of establishing a new and special REDD+ fund at an early stage during implementation through these discussions with the Ministry of Finance and other stakeholders. There are operational funds at present in Lao PDR that provide some precedents, but none have the funding complexity that REDD+ will entail.

The funding arrangements will have to cope with the disbursement of REDD+ benefits to sub-national and local level and ensure accessibility by rural communities while also taking the international requirements and expectations into account, to ensure credibility, transparency, accountability, inclusiveness and efficiency. To allow a well informed decision, further analytical and design work, as well as stakeholder consultation is required. *FCPF funds* to implement the RPP will be based on financial management and disbursement procedures and rules as provided in existing guidelines and as practiced by SUFORD. However, to ensure timely release of funds and smooth implementation it is required to resolve and clarify outstanding issues between MOF and the WB.

Benefit sharing

Payments from international REDD+ funding sources will have to be shared among eligible stakeholders, with a transparent, efficient, effective and equal benefit sharing system**.** The benefit sharing system will be extremely complex because of the number of stakeholders involved and the relatively high costs of achieving emission reductions at current carbon values. During the Readiness phase various simple benefit sharing arrangements can be tested, but eventually a more complex system will need to be designed and legalized based on experience gained, that allows for scaling up of REDD+ efforts during the implementation phase and ultimately accommodates a nationwide approach. Beside this it has to (a) accommodate the vertical and horizontal nature of benefit sharing, (b) include appropriate forms of benefits such as direct cash payments and in kind contributions, (c) include risk minimization and conflict/ dispute resolution mechanism and (d) consider opportunity costs of other land uses.

Carbon ownership

Carbon tenure is linked to who owns or manages the forests. In Lao PDR, forests are considered as a national asset, but the law has provision for forests to be allocated to villages to provide a local source of forest products, and Communities can be assigned responsibility for managing local areas of state forest. Carbon stocks differ from timber, in that their value on the carbon being conserved while timber's value depends on its utilization. Under present arrangements for timber, the government collects the major part of the stumpage value and only a very small proportion is allocated to local communities. In the case of carbon, the government will receive payments if the carbon stock in state forests is conserved, but in principle, the villagers should receive the payments if their carbon stocks are conserved.. Forest tenure determines *who* can use what resource, for *how long* and under *what conditions*. Therefore the REDD+ Regulation will address insecure tenure and e.g. establish clear tenure rights for forest resources so that users feel that their obligations for managing and maintaining the resources are matched by corresponding rights. Of critical importance to the entitlement to benefits as they define rights and responsibility under REDD+ is the legal framework related to land and forests ownership. Eligibility to receive benefits is determined by considering carbon tenure/ ownership and contributions of stakeholders in being involved in REDD+ efforts. Three main beneficiaries were identified during the first RPP stakeholder consultation workshop, which include communities of different ethnic groups, government agencies at national and sub-national level, as well as the private sector and NGO's to compensate them for their efforts in the context of implementing REDD+ strategies. Planned measures and activities and further analytical work and design of revenue allocation mechanism and payment structures will contribute to develop a preliminary BSS to be applied at pilot scale in selected locations where different stakeholders are involved. Experiences gained and

eventually additional requirements evolving at international level will have to be used to refine it towards the end of the readiness phase.

Information sharing and carbon registry

Information and knowledge are undoubtedly key factors for development and determine the success of initiatives and programs, and are of central importance for REDD+ and related efforts. Thereby, the concern is not only the use of technology to manage information, but appropriate information contents and the way they are presented are crucial. Relevant and up to date information are required as a basis for well-informed decision making, which requires that such are tailored according to the needs of different stakeholders involved in REDD+. They have to be disseminated, requiring appropriate information platforms and procedures. During the readiness phase **information and knowledge management** will ensure accessibility of REDD+ related information to relevant stakeholders and the public, fill knowledge gaps through knowledge capitalization and the synthesis of information, as well as facilitate transparency of decision making and monitoring processes. To achieve this the gradual establishment of **a "REDD+ clearing house" mechanism** is envisaged during the readiness phase and beyond by refining, harmonizing and strengthening existing information management related arrangements and efforts, such as the one related to the establishment of a Management Information and Document Management System supported by SUFORD. The host of this clearing house will be DOF/ MAF to be linked gradually with relevant data bases of MAF's line agencies such as FIPD, DOFI and NAFRI, but also in the medium term to 'external' data hub's such as in WREA and NLMA. A so-called 'REDD+ registry/ portal' will be established initially in close cooperation with the University of Bern, which will provide information on all REDD+ related projects and initiatives in Lao PDR.

The strategic decision to follow a nested approach in Lao PDR, which aims to implement REDD+ at a national level, but initially includes REDD+ projects and initiatives limited to defined areas, requires a **carbon registry**, which initially has to facilitate carbon accounting related to REDD+ pilot efforts, but ultimately to allow carbon accounting at national scale based on a standardized protocol. Such a nested approach has the potential to address many of the limitations of a pure national or sub-national approach by accounting for domestic leakage, engaging national governments, motivate sub-national actors to participate in REDD+ and attract private investment. However, a nested approach requires a more complex carbon accounting methodologies. Under a nested approach the government has to set up a national accounting and monitoring system (see section 4a for more detail), whereby the carbon accounting should include (a) a clear national reference emission level, (b) defined sub-national reference regions and (c) nested projects whose reference emission levels add up to the reference region and hence the national REL. For a defined interim period crediting sub-national activities outside of the national accounting framework will take place. During this period crediting sub-national activities would need to ensure that the emissions reductions are real and verifiable and are not double-counted under the future national accounting system. Beside this sub-national interventions would be required to account and discount for leakage according to agreed standards. During interim period proxy indicators such as land use/ forest cover change can be used to verify success of REDD+ interventions.

Capacity building

Capacities of relevant government agencies at different levels and other involved stakeholders including communities will have to be built up gradually. **Capacity building measures** will have to gradually advance in terms of number of persons

involved, but also in terms of the degree of detail delivered. A variety of training, capacity building, and knowledge transfer measures are necessary to meet the needs of all agencies and individuals required to create a comprehensive REDD+ program. It will include (a) a series of sequenced awareness creation measures to create basic understanding and interest in REDD+ as a basis for subsequent more specific training measures, (b) the provision of technical information on key REDD+ topics such as financial management/ funds, benefit sharing, carbon registry to stakeholders as a basis for well-informed decision making, and (c) the implementation of initial and advanced technical training. A analysis of training needs will provide the basis for targeted training measures. As there is a high interest of various donor organizations and NGO's to contribute/ get involved into capacity building and awareness creation a capacity building roadmap needs to be formulated to facilitate the coordination of inputs of different donor initiatives.

To establish the above outlined REDD+ implementation framework, suggested measures and activities related to the different components have to be implemented during the readiness phase. For each of them **budget estimations** (in thousand US$) are provided, whereby a budget summary for the components (main activities) are provided in the table below. More details, going down into sub-activities are provided in the respective Chapters. Throughout the Readiness Phase the outcome of the various arrangements will be closely monitored and decisions made as to whether modifications are required or the arrangements have proved to be effective and can be adopted as standard practice. This will include all the instruments discussed above as well as the effectiveness of the capacity building.

Table 2c: Summary of REDD+ Implementation Framework Activities and Budget

Main Activity	Estimated Cost (US$'000)				
	2010	2011	2012	2013	TOTAL
2c.1. Develop regulatory framework		80	60	100	240
2c.2. Establish financial mgmt. arr.		100	323	301	724
2c.3. Develop Benefit sharing arr.		190	0	70	260
2c.4. Information & knowledge mgmt		40	200	120	360
2c.5. Capacity building		70	100	50	220
Total		480	683	641	1,804
Government		14	20	26	60
FCPF		466	663	615	1,744
UN-REDD Programme					
GTZ					

2d: Social and Environmental Impacts

Introduction

The REDD+ Strategy options will generally have positive environmental impacts, although care will need to be exercised when piloting alternative farming systems to reduce emissions from shifting cultivation to avoid potential negative impacts from bad soil management practices and the use of chemicals, including artificial fertilizers. The social impacts may be positive or negative. It is expected that pilot activities on REDD+ will either be independently donor funded and managed projects designed specifically to pilot REDD+ for which the social and environmental safeguards will be the responsibility of the donor concerned or they will be REDD+ activities incorporated into ongoing, planned or future projects that are addressing relevant general issues such as forest management or land-use planning, but do not have a specific REDD+ sub-component. For the latter, an SEIA will be undertaken for each pilot activity prior to implementation to assess possible the social and environmental impact of the additional REDD+ activities, and an Environment and Social Management Framework (ESMF) will be developed.

Recent studies have documented positive impacts of REDD+.[3] A Social and Environmental Impact Assessment (SEIA) is a key component of Lao PDR's R-PP to the World Bank Forest Carbon Partnership Facility (FCPF) to assess the likely or potential positive and negative impacts of Lao PDR's REDD+ strategy options and implementation framework.[4] It will be operationally linked to the Consultation and Participation Plan process and feed into this process by undertaking an SEIA of the policy options being discussed. The SEIA, however, is most effective in concrete terms, when there is an agreed coherent set of REDD+ strategies and policies following a multiple stakeholder planning process.

The environmental impact assessment will address ecosystem and biodiversity concerns and is linked to section 2b and will address existing initiatives impacting on Physical Cultural Resources, forest areas and land-use planning, especially the Integrated Sector Planning Project that will follow-on from the SEM II and the ADB funded SNRMPEP that is working with five Provinces in the south to incorporate social, economic and environmental considerations into land use planning and land allocation decisions by provincial authorities. An integrated approach will enable more rapid development and assessment of REDD+ strategies as well as ensure that the impacts of these strategies are assessed within the context of an evolving forest sector.

The social impact assessment will give special consideration to ethnic groups' and other local communities' livelihoods, rights, governance, vulnerability, gender concerns and capacity building. It will address a number of issues that are outlined below in the section on Objectives.

[3] Reducing Emissions from Deforestation and Degradation (REDD+): A Casebook of On-the-Ground Experience. © 2010 The Nature Conservancy, Conservation International and Wildlife Conservation Society

[4] In parallel with the SEIA tool, the R-PP will be subjected to the Environmental Impact Assessment1 (EIA) or Strategic Environmental Assessment (SEA) procedures developed by Lao PDR's Department of Environment.

Application of WB Safeguards

The application of WB Safeguards, such as OP 4.10 for Indigenous Peoples (2005) will be applicable for the SEIA. The GOL has endorsed the UN Declaration on the Rights of Indigenous Peoples in 2007, but prefers to use the term Ethnic Groups rather than indigenous peoples. The Ethnic Groups in Lao PDR would, however, be covered by the generic sense in which the WB OP 4.10 uses the term indigenous peoples to refer to distinct, vulnerable, social and cultural groups possessing the following characteristics:

> (a) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
>
> (b) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
>
> (c) customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
>
> (d) an indigenous language, often different from the official language of the country or region.

Most ethnic groups in Lao PDR would match these characteristics and their collective attachment to ancestral territories, primarily the forests, makes them the primary stakeholders in the REDD+ Strategy development. The REDD+ Strategy will ensure that the process of free, prior and informed consultation with the relevant ethnic groups is carried out as part of a broader public consultation (Section 1b Consultation and participation)

Application of OP 4.12 - Involuntary Resettlement may be relevant. Involuntary resettlement gives rise to severe economic, social, and environmental risks because production systems are dismantled and people face impoverishment when their productive assets or income sources are lost. Cultural identity, traditional authority, and the potential for mutual help are diminished or lost. The policy includes safeguards to address and mitigate these impoverishment risks. None of the options for practical measures to reduce net emissions will involve resettlement, but those aimed at tackling illegal logging may have an impact on income where villagers are currently doing it. The SEIA will need to assess the impact in such circumstances and ensure that alternative sources of livelihood proposed will adequately compensate. Similarly, measures intended to deal with shifting cultivation also focus on the provision of alternatives that provide improved livelihoods. One difficulty that will need to be addressed in the design of such activities is the long delay before there is a revenue stream, where perennial crops are involved. In order not to have a short-term negative impact on livelihoods, a financing model needs to be used that provides cash “up-front” for villagers until a full revenue stream is achieved,

Application of the WB OP 4.36 – Forests (2002) is similarly relevant. To be acceptable to the Bank the interventions must recognize and respect any legally documented or customary land tenure and use rights as well as the rights of indigenous peoples and workers. It must include measures to maintain or enhance sound and effective community relations and ensure conservation of biological diversity and ecological functions. A forest certification system must have standards for meaningful participation of local people and communities; indigenous peoples; non-governmental organizations representing consumer, producer, and conservation interests; and other members of civil society, including the private sector. The decision-making procedures of the certification system must be fair, transparent, independent, and designed to avoid conflicts of interest.

Aims of Subcomponent 2d

The overall aim of this component includes, but is not limited to the promotion of due diligence in the determination of the REDD+ strategy and inform the design of the national REDD+ strategy so that it encourages positive impact and avoids or mitigates negative social/environmental impacts. A strong SEIA analysis at the systemic level when policy options are discussed and later at the concrete level may subsequently feed the upstream policy-making process, thereby promoting more sustainable and equitable REDD+ activities and increase effectiveness and sustainability.

Likely socio-economic and governance issues susceptible to an initial SEIA and discussion of policy and strategy options would include but not be limited to, the different themes and scenarios under the headings below:

- The structuring of the information sharing activities regarding policy options prior to consultation and SEIA proper that will allow forest fringe communities to take part. Scenarios are linked to the degree local communities understand Lao language and are literate.
- **Ensure assigning responsibility for adapting SEIA and consultation procedures to Ethnic Groups' cultures and their languages according to local conditions with more support to the southern part of Lao PDR.**
- Effectively disseminate information to ethnic group stakeholders about the WB requirement for free, prior and informed consultation for any activities affecting their rights to lands, territories and resources
- Assess communities' understanding of REDD+ and the development of carbon rights. This must give particular attention to ethnic groups' statutory and customary rights to the lands, territories and resources that generate the greenhouse gas emission reductions and removals
- Identify and use a process for effective resolution of any disputes over rights to lands, territories and resources related to the program and in relation to different scenarios
- Define potential activities or instruments for mitigating possible adverse environmental and social impacts under different scenarios
- Defining instruments for presentation and resolution of grievances and complaints under different scenarios
- Addressing Who i.e. which agency (national, sub-national, community level) is authorized to participate in domestic and international transactions based on GHG emission reductions following reduction of DD
- Assessment of projected costs, potential revenues and other benefits and associated risks for each relevant rights holder and stakeholder groups at all levels using a participatory process for different scenarios

Based on outcomes from the SEIA, social safeguard instruments such as Resettlement Policy Framework and Ethnic Group Development Framework may be required to provide the impact mitigation measures for REDD activities. These policy framework can be incorporated as integral parts of the Environmental and Social Management Framework (ESMF).

Activities in Subcomponent 2d

Initial (largely desk-based) diagnostic analysis

During the R-PP preparation phase stakeholder consultation is limited to mainly national level representatives (see 1b). There are therefore limited opportunities for community participation based on a prior information dissemination and consultation process. The initial SEIA analysis will therefore build on the results from 2a and 2b to glean issues that must be subject SEIA in order to design institutional, economic, legal and governance arrangements.

Tentative SEIA issues emerging out of 2a and 2b are

- land- and forest tenure, including customary rights, leading to a definition of who owns carbon and with what implications to be spelled out under different scenarios of reduced emissions from DD
- land pressure in local communities shortens fallow or promotes pioneering shifting cultivation. If communities are deprived of their lands food security is at stake. Mitigating measures and compensation to be discussed under different scenarios.
- land pressure promotes land use changes towards e.g. rubber plantations in degraded fallow land. Will this tendency be acceptable?
- revenue forgone from not converting forest to other land use => compensation or PES
- SEIA to assess transaction costs to communities for getting a REDD+ payment
- FDI concessions are given out by GOL/local government without any SEIA being done and communities lose control over land management and protection. SEIA of scenarios with controlled and regulated FDI and scenarios with uncontrolled FDI
- SEIA of LUP and concrete LULUCF initiatives on site with communities must assess carbon stocks and define options for local communities' role in MRV
- capacity development required by different scenarios to be assessed. Community capacity building around REDD+ should be made to the REDD+ Task Force for appropriate action prior to the implementation phase.

Development of generic process and outcome indicators linked to the different SEIA themes above must be prepared initially and turned into time-bound and concrete indicators in implementation phase.

Pilots

Pilots are carried out during implementation. The issues and solutions reached for different scenarios will inform entry points for SEIA of the pilots. It is noted that the pilots encompass not only DD scenarios but also situations of good natural forest of high biodiversity and carbon stock. Protection of these and monitoring for leakage will rest with communities to a high degree.

Implementation Arrangements for the SEIA

GOL, the REDD+ Task Force and the National Environment Committee will have overall but differential role and responsibility to facilitate the SEIA process. The specialists to facilitate the process will come from government, university, NGO and civil society organizations supported by national and international technical assistance. The day to day assessment may be coordinated by the SPC WG.

Possible professional profiles for the SEIA facilitators should be multi-disciplinary including social science and forestry background. Lao as well as international facilitators will be needed. One international or national consultant may have specialist skills to design in detail the methodology and work schedule to be implemented. S/he should also provide a mentoring role with the aim of building

national capacity in social and environmental impact assessment in the Government of Lao PDR.

The strategic SEIA team of facilitators will report to the REDD+ Task Force and the National Environment Committee. A national SEIA Sub-Working Group may form part of the SPC WG.

SEIA monitoring

SEIA monitoring will address two stages. The first stage of SEIA is by nature theoretical and linked to different scenarios and themes as no detailed concrete activities are yet on the table. Once the on-the-ground implementation starts effectiveness, equity, and mitigation impacts of REDD+ policies must be monitored.

Table 2d: Summary of Social and Environmental Impacts Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$'000)				
		2010	2011	2012	2013	TOTAL
2d.1. Diagnostic analysis			50			50
2d.2. Stakeholder analysis			100			100
2d.3. Analysis of WB SES			50			50
2d.4. National SEIA WG			20	20	20	60
2d.5. SEIA for each pilot activity			200	100	100	400
Total		0	420	120	120	660
Government						0
FCPF						0
UN-REDD Programme						0
GTZ						0
JICA						0
World Bank						0

Component 3: Develop a Reference Scenario

The reference scenario defines an expected or business as usual (BAU) level of carbon emissions from deforestation and degradation should no action be taken to avoid such emissions. The objective being to provide a credible benchmark against which emissions reduction can be calculated.

A recognized approach is to use past trends of deforestation and degradation as determined from remote sensing and forest inventories and using this as a basis to project future emissions. An alternative approach forecasts likely change in forest cover and carbon density due to macroeconomic trends, plans and policies in relevant sectors, and this may give a slightly different result if there is reason to believe that the rate of conversion is slowing down

Land Cover and Inventory Assessment

To calculate the reference scenario for Lao PDR the land cover assessments from 1982 to 2002 and the national NFI 1992-1999 were used. Differences in the reported rate of land cover change and forest degradation (activity data) were observed between different periods and datasets. Between datasets these were caused by differences in determining the forest cover thresholds - between forest and non-forest and within forest. Another contributing factor was the use of different analysis methods with the 2002 data being based on sampling. Consequently, a range of deforestation rates (0.5 to 1.4%/yr) were returned. For the purpose of the modeling an average rate of 0.8%/yr was used. It should be noted that the rate of change varies across the country. An average degradation rate was also assumed of 1.12%/yr calculated over the remainder of the growing stock.

More consistency in these estimates could be achieved by analysis of historical Landsat images from 1990, 2000 and 2005 which are freely available, to provide rates of change by the main drivers of change. Ultimately this information could be used to develop reference levels for sub-national projects. The NFI dataset as processed by Vesa (2010) was used to provide estimates of carbon stock by forest type and strata.

Emission Levels

The national reference emission level (REL) was estimated using historical rates of change and inventory data and factoring in national development objectives.

In formulating the reference emission Levels (REL) several assumptions have been made. These relate to:

- historical rates of forest change
- rate of forest degradation
- national development plans and economic growth

Historical values of deforestation and degradation are used up to the last measurement point 2002. Post 2002 national development plans are modelled to show their impact on emissions levels. Greater uncertainty centres around some activities and economic growth. As a result incomplete information or inconclusive

information mean that further work is required to formulate a future trend for certain areas.

The percent that comes from the different forest cover types: current forest and potential forest is indicated for each variable. In the default REL 30% of the development is assumed to come from forest cover >20% with the remaining development occurring in forest cover <20%. Greater uncertainty centres around some activities and economic growth. As a result incomplete information or inconclusive information means that further work is required to formulate a future trend for certain areas. This shows a decline in emissions over time, caused partly by the expected continual reduction in the remaining growing stock, partly by a gradual reduction in deforestation, and partly as a result of sequestration from the plantations established in the past 5-10 years.. This net sequestration will primarily be from rubber and teak plantations which will be on rotations of 30-50 years while that from fast growing commercial timber plantations will be relatively modest due to the short rotation.

In 1982 annual emissions were estimated at 95.3 million tCO2e declining to 60.6 million tCO2e by 2010. From 2010-20 the average annual emission is estimated at 51.1 million tCO2e (see Table 2a.2 above).. If development trends are factored in the post 2002 level peak in 2008-2009 and then decline as the number of projects (especially hydropower) decrease. The average increase from 2010-2020 above the historical REL is approximately 10 million tCO2e.

If REL and additional emissions from development are combined then the annual emission for the 2010-20 period is estimated at 65 million tCO2e

.

3.1. National Reference scenarion settings

Base Reference Emission Level	**Variable/ Driver**	**Units**	**Min**	**Max**	**Model**	**CF: PF Ratio**
	Deforestation rate	ha/yr	46,000	134,000	90,000	
	Degradation rate	m^3/ha/yr	0.6	1.67	1.12	
Post 2002 Development	Hydropower	ha/yr	10,000	16,500	Varies[5]	30:70%
	Mining sector	ha/yr			14,100	30:70%
	Infrastructure	ha/yr			1,000	30:70%
	Plantations	ha/yr			Varies	30:70%
	Shifting Agriculture	ha/yr	Trend suggests not increasing			
	Agriculture area	ha/yr	Permanent agriculture considered stable			
	Fuel wood demand	m^3/ha/yr	Information incomplete			
	Forestry	m^3/ha/yr	Information on illegal logging incomplete			

Figure 3 shows the estimated trend from 1982-2002 based on available historical data projected to 2020, and the projected trend to 2020 based on the model assumptions in Table 3.1 above, This shows a decline in emissions over time, caused partly by the expected continual reduction in the remaining growing stock, partly by a gradual reduction in deforestation, and partly as a result of sequestration from the plantations established in the past 5-10 years.. This net sequestration will primarily be from rubber and teak plantations which will be on rotations of 30-50

[5] Varies according to areas under development

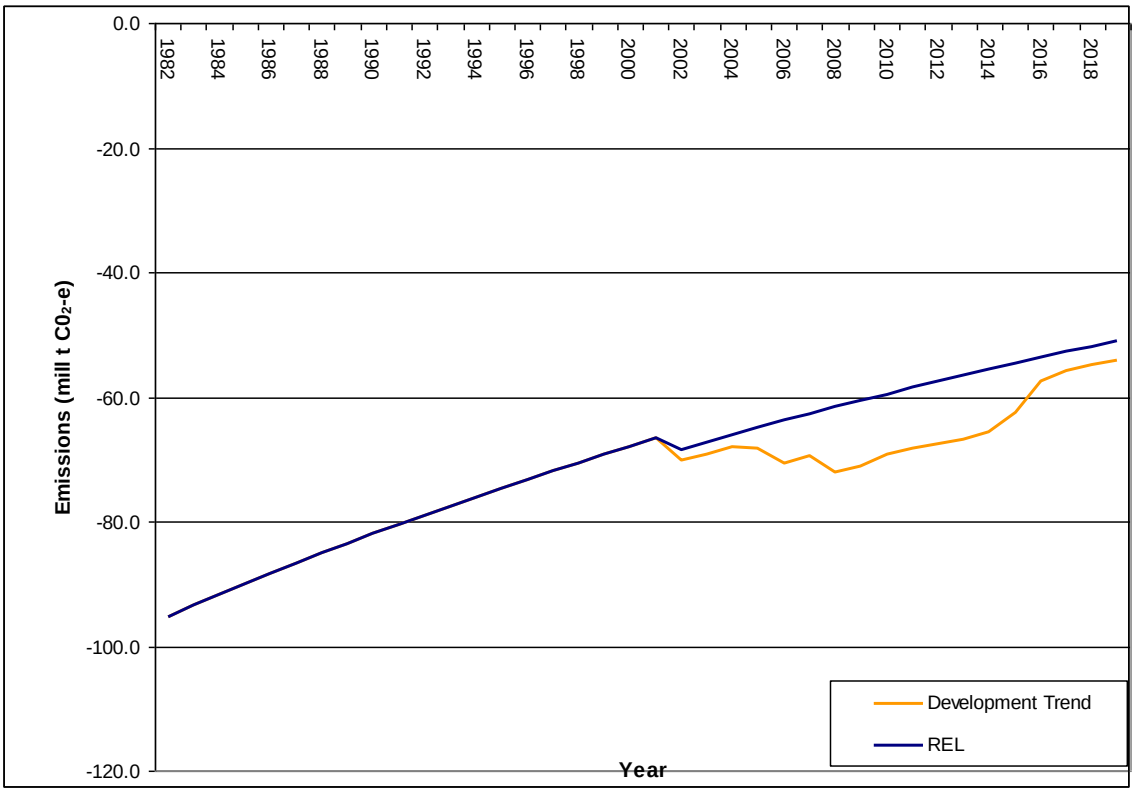
years while that from fast growing commercial timber plantations will be relatively modest due to the short rotation.

In 1982 annual emissions were estimated at 95.3 million tCO_2e declining to 60.6 million tCO_2e by 2010. From 2010-20 the average annual emission is estimated at 51.1 million tCO_2e (see Table 2a.2 above). If development trends are factored in the post 2002 level peak in 2008-2009 and then decline as the number of projects (especially hydropower) decrease. The average increase from 2010-2020 above the historical REL is approximately 10 million tCO_2e.

If REL and additional emissions from development are combined then the annual emission for the 2010-20 period is estimated at 65 million tCO_2e

.

Figure 3. Modelled Carbon REL and Expected Development Trend



Changing the assumed values of selected variables in the model provides an indication of the sensitivity of the estimate of total emissions to each of the assumptions and Table 3.2 shows the change in the estimated total emissions with changes in some of the more important variables. With total emissions estimated to be around 51 million tonnes CO_2 annually, most of the changes are relatively small. The assumed growing stock at the start of the period for each of the forest density classes has the biggest impact on the overall emissions. A 10% increase in the proportion of the area converted that is taken from each of the forest density classes has a relatively small impact on the estimated total emissions. The estimate of total emissions is far more sensitive to changes that affect the moderately dense forest, because the area of dense forest is relatively small, and the stock density in the low density forest is so low. While the absolute values of the emissions may differ somewhat in reality, this conclusion is still valid and gives emphasis to the need to

secure all forest with canopy closure >20%, but especially the medium density forest, which is where the bulk of the remaining carbon stocks are found.

Staff from DOF have been trained in the design and use of the model and will be able to advise the Department of the likely impact of changes in policy or actual events on the overall emissions. Funds have been allocated under Component 2a for further work on the model, updating it as better data becomes available, and testing it for use in establishing sub-national RELs. It will also enable the model to be further refined to incorporate soil carbon and the possible effect of climate change as and when data becomes available.

Table 3.1: Sensitivity of total Emissions to changes in selected assumed values

Forest type	Variable	Change in estimated total emissions ('000 tonnes CO_2 per an)
Low density forest (20-40% cc)	Initial growing stock reduced 10%	-1,070
	Rate of growing stock degradation reduced 10%	-520
	Increase of 10% in proportion area converted from this forest type:	
	-Tree plantations	220
	-Agricultural concessions	50
	-Small holder	20
	-Hydro-power	20
	-Mining	-
Medium density forest (40-70% cc)	Initial growing stock reduced 10%	-4,180
	Rate of growing stock degradation reduced 10%	-2,070
	Increase of 10% in proportion area converted from this forest type:	
	-Tree plantations	900
	-Agricultural concessions	230
	-Small holder	100
	-Hydro-power	110
	-Mining	30
Dense forest (>70% cc)	Initial growing stock reduced 10%	-1,060
	Rate of growing stock degradation reduced 10%	-520
	Increase of 10% in proportion area converted from this forest type:	
	-Tree plantations	200
	-Agricultural concessions	50
	-Small holder	20
	-Hydro-power	20
	-Mining	-

Early in the REDD+ Readiness implementation phase, when the latest forest cover assessment is published, the REL will be revised and made more relevant after some of core spatial datasets have been assembled and further analysis has been conducted on historical and current forest cover changes. This should include creation of REL models at provincial level.

Capacity Building & Investment Requirements

Several areas have been identified in terms of additional investment and capacity building based on the REL sensitivity analysis and a review of existing datasets and anticipated work programs.

Of particular note is the JICA- FRIC initiative which covers an extensive infrastructure and capacity building program from 2010-12. This may in itself be considered ample in terms of providing technical assistance as long coordination between pilot and project activities are coordinated.

These have been divided into four themes covering national and pilot levels. In some cases programs are already in place and the objective is to supplement these efforts. Approximate costs are given in the table 3 below.

Potential benefits of a regional REL

In the medium term there is scope for regional cooperation in REDD+ monitoring, e.g. the Greater Mekong Area, since some of the pertinent drivers (e.g. illegal logging) are of trans-boundary nature. Moreover, a regional monitoring system is probably more cost-effective. Vietnam receives support from UN-REDD+, and Winrock and RECOFTC are involved in regional activities, incl. capacity building in monitoring. Mekong River Commission is doing monitoring as well. Before such regional cooperation can be implemented there will need to be negotiations and agreement on definitions, classification systems and technologies to harmonize. This is discussed further in Section 4a on MRV.

Link with MRV system

The activities discussed in section 4a on the MRV system covering the need for and the approach to forest cover assessment, forest inventory and carbon stock assessment will all generate the data required to revise the REL, which should be done before the end of the REDD+ Readiness phase and thereafter at about five yearly intervals.

Table 3.2: Summary of Reference Emission Levels Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$'000)				
		2010	2011	2012	2013	TOTAL
3.1. National Land Mgmt	3.3.1. Aq. Satellite. imagery.		100	100		200
	3.1.2. LIDAR sampling		125	125		250
	3.1.3. QC satellite. imagery		25	6		31
	3.1.4. For. Classif. standards		30	15		45
	3.1.5. Dev. Mapping standards		30	15		45
	3.1.6. Analyse drivers by Prov.		81			81
	3.1.7. Develop national GIS data repository		90			90
3.2. REL	3.2.1. Model prov. REL baselines		45			45
3.3. Inventory & processing	3.3.1.Evaluate methods for C assessment.		40			40
	3.1.2. Impl. Field inventory of C		850	850		1700
3.4. Sub-national	3.4.1. Cab. Bdg for forest inv. within PLUP		46			46
3.5. TA	3.5.1. GIS/RS		120	120		240
	3.5.2. Inventory design		120	120		240
Total		0	1,702	1,351		3,053
Government						
FCPF						
UN-REDD Programme						
GTZ		x	x	x	x	X
JICA		x	x	x	x	X
World Bank		x	x	x	x	X

Component 4: Monitoring, Reporting and Validation

4a. Emissions and Removals

Background

Forest cover has been assessed in 1982, 1992 and 2002 using Landsat and the data has been used for monitoring changes in forest cover and as a basis for the model used to determine current emissions and the REL as discussed in Components 2a and 3 (see section on FCCA below). In addition a National Forest Inventory was carried out during the mid 1990s, although it was not closely correlated with the forest cover assessment. The FIPD under DOF has been responsible for these assessments and has staff experienced in forest mapping and inventory. Another rapid forest cover assessment has recently been completed, but the data is not yet fully analysed and verified and so cannot been used for the current assessment, but will be used to update RELs and the model, once available. The NFI was designed to give an estimate of the growing stock nationally and is based on the forest type (evergreen, deciduous etc) and so cannot be used to assess or compare the different forest management categories (Conservation, protection, production).

Scope of MRV system

The GOL has opted for REDD+ which increases the complexity of the required MRV system since the monitoring system will have to be designed to monitor reduced emissions from deforestation and forest degradation as well as removals from conservation, sustainable management of forests and enhancement of forest carbon stocks in Lao PDR. Such a wide scope supports the Forest Strategy 2020 and the 5 year plan of the Ministry of Agriculture and Forestry. It also supports the ambitious target of achieving 70% forest coverage of land area in Lao PDR by 2020.

Three tier levels have been defined by IPCC for determining emission factors from changes in carbon stocks. At present, Lao uses Tier 1 (IPCC default values) for its national Greenhouse Gas Reporting, but has already country-specific information (Tier 2) for some parameters. Tier 3 uses actual inventories with repeated direct measurements of changes in forest biomass on permanent plots, and is thus well suited for monitoring forest degradation. Tier 3 is the most rigorous approach, thus provides the most accurate data, but also increases monitoring costs and complexity. The GOL intends to gradually progress to Tier 3 within the next 3-5 years.

There are five carbon pools which can be distinguished: above-ground biomass, below-ground biomass, litter, deadwood and soil organic carbon. So far, only above-ground biomass is measured and accounted for in Lao PDR. Pools can be excluded if it can be proven that they are a carbon sink, not a source under conservative assumptions. The GoL is committed to eventually monitor and report on all five carbon pools at the appropriate level of detail. GOL is fully committed to using the latest UNFCCC methodological guidance in regard to MRV.

Transparency, Consistency, Comparability, Completeness, Accuracy are general principles for MRV which will be followed, but difficult to achieve in the short-term. Continuous improvements will be sought.

The GOL has already submitted a forest definition to UNFCCC (min. 20% forest cover, min. area 0.5 ha, min tree height 5 m, palm trees and bamboo considered as non-forest).

National GHG Accounting and Reporting on LULUCF/AFOLU

The Climate Change Office (CCO) under the Water Resources and Environment Agency (WREA) is currently in the process of preparing the 2nd National Communication on Climate Change to the United Nations Framework Convention on Climate Change (UNFCCC), which will be based on the reference year 2000. It will take until early 2012 to finalize it, due to limited capacity within WREA. The 1st National Communication on Climate Change was submitted in October 2000. For both Communications, Tier 1 (IPCC default values) has been used since there is a lack of Lao specific emission factors for the various emission related activities incl. LULUCF and limited capacity and resources to generate information on emission factors specific to the Lao PDR. During the preparation of the 1st Communication, carbon emissions from LULUCF were substantially underestimated due to using inappropriate default factors for natural forests (i.e. using IPCC growth values for fast-growing plantations), assuming small carbon densities for converted forests and not considering forest degradation at all.

There is an immediate need to provide training on GHG accounting and reporting for Land Use, Land Use Change and Forestry (LULUCF) which will also inform the development of the 2nd Communication. Some training was already provided (e.g. in April 2010 by Academics from Thailand) but this is not considered sufficient. Participants should include staff of the CCO/WREA and FIPD/DOF as well as national consultants. Topics to be covered shall include the IPCC Good practice guidance for LULUCF (2003), IPCC Guidelines for National Greenhouse Gas Inventories – Volume 4: Agriculture, Land Use and Forestry (GL-AFOLU) as well as Guidelines on Land Use, Land-Use Change, and Forestry Guidance for GHG Project Accounting prepared by World Resources Institute in 2006 and the GOFC-GOLD sourcebook. It is further proposed to cover the participation of 5 staff on an online-course on “GHG Accounting for Forest Inventories” offered by the GHG Institute.

It is further proposed to conduct as a matter of priority a study for developing Lao specific emission and removal factors (Tier 2) for the various emission related activities in regard to LULUCF and AFOLU. This study should be either prepared by consultants or a competent research institute.

The adopted forest definition has important implications for National GHG monitoring for LULUCF, as well as for the MRV system and forest cover assessments. Areas which are under rotational shifting cultivation permanently change their status from forest to non-forest, making forest cover assessments challenging. Therefore, a study will be conducted to assess the implications of the forest definition, and recommend the most appropriate definition for Lao PDR national circumstances.

Forest Cover Change Assessment (FCCA)

Since the 1970s, various FCCAs have been carried out in Lao PDR, some however only on sub-national level (e.g. MRC 1970 & 1990, Lao-Canada 1974, Lao-Russia Forest Reconnaissance Survey 1982, LAO-SIDA 1st (1985-89) and 2nd Nationwide Reconnaissance Survey (1989-92), LAO-MRC-GTZ Forest Cover Monitoring Project 1997, LAO-SIDA-JICA 2002 Assessment of Forest Cover and Land Use during 1982-1992-2002, SUFORD 2010). Yet, the results are often not directly comparable due to the use of different definitions, methodologies, imagery and technologies and the results are sometimes even contradictory. As a consequence, a consistent, recent

FCCA which can be used for establishing a credible reference emission scenario is still lacking.

The JICA-supported Program for Forest Information Management (FIMP) will address this shortcoming by preparing a nation-wide forest base-map 2010 using ALOS, SPOT-5 and Rapideye imagery and carrying out a nation-wide field survey in 2010 collecting basic info on species, diameter, height and density. Furthermore, the project will use SPOT-5 10m color imagery to prepare a nation-wide forest cover map for 2005. It is further foreseen to use available imagery from 1990 (Landsat TM) and 2000 (Landsat ETM+) for training purposes with the aim to produce as part of the training baseline maps for 1990 and 2000. The forest base-map 2010 is scheduled to be finalized at the end of the readiness phase in 2012. In the future, at least every 5 years a nation-wide FCCA shall be conducted.

Remote sensing data for FCCAs is widely available. In 2009, SUFORD commissioned Aruna Technology Ltd to prepare an inventory and analysis of existing satellite imagery. All of the above-mentioned projects acquired their own imagery. For the FCCA 2010, SUFORD and FSIP procured 112 ALOS AVNIR scenes in 2008-2010; 2 SPOT scenes in 2007 and 2 LANDSAT 5 in 2009. The recently started FIMP will acquire ALOS AVNIR-2, ALOS PRISM and ALOS PALSAR as well as Spot, Rapideye and Quickbird images for 2010. It will moreover procure a significant number of RS (Erdas Imagine Professional, eCognition) and GIS software licences (ArcGIS(ArcInfo&ArcView), with Spatial Analyst, 3-D Analyst) as well as hardware. Moreover, the GTZ funded Land Management Project (LMRP) has procured high-resolution Quickbird data for Xayaboury and Bokeo or Louang Namtha which it intends to make available for DOF. The National Geographic Department (NGD) supported by a Finnish-funded Integrated Spatial Planning (ISP) project will conduct an aerial photographic survey covering all areas south of Khammouane province and half of Khammouane starting late 2010. The outputs will be **aerial photos and orthophotos** of the whole area and ultimately a new topographic map in scale 1:50000. The strategy is to offer mapping products based on demand. Aerial photographs are clearly the best available remote sensing data and thus DOF shall make sincere efforts to use these aerial photographs for its MRV system. Finally, it is suggested to take proper stock of all available remote sensing data incl. metadata on a continuous basis. The Remote Sensing Centre (RSC) of the Water and Environment Research Institute of WREA has prepared in 2009 a very useful "Overview of Databases and RS/GIS Resources within the Natural Resources and Environment Sector in Lao PDR" which should be continuously updated.

In 2009, SUFORD prepared a capacity building plan for FIPD/DOF. Many FIPD staff have been involved in various past and on-going projects and received training, both in-service as well as through participation in specialized training courses, sometimes abroad. In regard to FCCA, main training needs are in change detection approaches, specific applications of Erdas software, use of VHR, ALOS and ALS data, and biomass assessments, modeling and calculations. The recently started FIMP project will provide significant capacity building support, both in-service, as well as through training activities offered by a regional provider in Thailand (AIT Geoinformatics Center) and through exchange visits organized by the Japanese consultant. It will enhance the basic knowledge in RS/GIS/DB through lectures provided by AIT and practical trainings supported by Japanese consultant. For increasing the understanding and concepts of base-map development, FIPD leading technicians will receive 2-months training in Japan as well as support from local consultants. In terms of increasing the capacity for nation-wide forest inventory survey, it is foreseen to measure about 2,400 plots between November 2010 and March 2011. More than 25 staffs will practically be involved in data collection and analysis, FIMP will further increase the capacity for database management and develop standards and quality

control procedures. At the final stage in 2012-13, the project attempts to integrate the experience gained from REDD+ pilot projects into monitoring design. The FIMP will also construct a Forest Resource Information Centre which will also include a database system and the procurement of hardware (server etc).

National Forest Inventory

With support of the Lao-Swedish Forest Program, the first National Forest Inventory (NFI) in Lao PDR was carried out from 1991 to 1999. It was based on a two-phased, stratified, and systematic cluster sampling for the entire country, resulting in well controlled and representative national level statistics. The NFI dataset contains almost 4000 temporary field plots and provides an excellent source for estimating forest attributes of satellite image based classes in each province. It is still the main and best information source in regard to forest stocks and increment on a national level. Besides, it is an extremely valuable dataset for inventory planning up to forest type level.

Ideally, a NFI shall be conducted every 10 years. They are an important information source for forest area, timber and biomass stock and increment, health and productivity of forests as well as NTFP. Repeated measurements of sample plots as part of the NFI would provide extremely valuable data on biomass and carbon increment or decline. The results of the NFI will be instrumental in monitoring forest degradation.

SUFORD funded a design study for a national Forest Resource Assessment (FRA) in 2009-10, but unfortunately does not have funds to finance the implementation of a NFI. The study outlines a comprehensive NFI methodology which builds on the first one, covering among others the FRA design process and methodologies, required remote sensing materials, stratification, cluster and plot design, appropriate number of sample plots, costs for sample measurements, change and carbon estimation, developing biometric models, required remote sensing techniques and software.

Furthermore, SUFORD supported a consultancy on NFI data processing that introduced new models (stump diameter model, taper curve model for computing upper diameter etc) and parameters (such as tree density factor, biomass expansion factor, root-shoot ratio, carbon conversion factor) in the NFI database which are important for carbon monitoring.

What is left is to enter the development and operational phases of the NFI. Many FIPD/DOF staff were involved in the conduct of the 1st NFI, therefore some capacity at national level remains and refreshing training is required for those staff involved previously that are still with FIPD while new staff will require more in-depth training, to explain the methodology to be used and for harmonise the approach and ensure consistency. At provincial level, there is however a lack of vehicles, equipment and trained staff. The 2nd NFI will be conducted as described above with the measurement of 2,400 plots nationwide in 2011 and 2012. This will provide improved quality of data and data coverage to allow progression to Tier 3.

By combining the results of the latest satellite interpretation and the results of the first NFI, SUFORD provided country level statistics on forest growing stock and carbon 1982-2010. It was assumed that forest characteristics within “Forest Cover Classes” can be estimated within one province using field data collected during 1991-1999. However, some inconsistencies with the results of earlier studies were detected and cannot be resolved at present stage. This analysis could be updated and improved using the results of the 2nd NFI.

Integrated Forest Information System

FIPD needs an integrated, multi-purpose information system for forests, biodiversity and carbon. SUFORD carried out a preliminary needs assessment and system design for a Forest Inventory Database System (FIDS) for FIPD which is basically a GIS based forest information system, combining NFI, FIMP and GIS databases. A provisional logical design for the FIDS was developed, incl. a new tabular database structure, design and test of report and map layouts etc. A pilot system was implemented with MapServer technology and data delivery based on a Web-interface. Although carbon and REDD+ functionalities also received some attention, the focus of the FIDS design has been on production forests. The functionality of system still needs to be improved (testing data input procedures and calculation procedures, data backup and maintenance, translation into Lao language). Moreover, the system has to be installed on a new server and personnel need to be trained in the use of the system.

Based on the situation above an idea of System development on “forest Information Network” which could include following contents are now under negotiation between DOF and Japan side, as Grant Aid Assistance “Forest Preservation Program”,

- Integration among existing databases and “Base map and inventory” from FIMP which would be developed to be integrated with other potential database
- Expansion of FIMP to Conservation forest and Protection forest
- Development of forest management system in Provincial level
- Development of network system between the main building of Department of Forestry and Forest Inventory and Planning Division
- Procurement of necessary hardware and software and training on the system

Detail needs assessment and designing whole picture for above system development to make those integrated easier are also intended

Monitoring of Drivers of Deforestation and Degradation

Apart from fire, which is discussed separately below, monitoring of the drivers of deforestation, covers clearance for agriculture, by commercial companies and smallholders, mining, hydro-power development and infrastructure. Monitoring of these drivers will need to comprise two elements: (i) acquisition of information from the responsible agencies (Ministries and Provinces) on where concessions and PLUPs have been approved, so that the locations can be identified and regular monitoring by RS carried out. This will be coordinated with monitoring (if any) by the responsible agencies and (ii) detection and monitoring of uncontrolled or illegal clearance will be undertaken by a random sampling across the country to estimate the extent and distribution of such forest conversion.

Monitoring of degradation is more difficult, and will be piloted as described under Component 2b, by a combination of surveillance by various forms of RS. The distribution of shifting cultivation is expected to be relatively straightforward as the cleared patches are easily recognizable from satellite and annual monitoring of sample District will give information on the numbers and extent of annual clearance and over time an indication of the average rotation and trend in the practice. Illegal logging will be more difficult since changes in forest density will not be detectable from satellite within a time frame of one or two years. Therefore the possibility of a more intensive form of surveillance using various modern technologies will be explored with the authorities concerned with national security,

Fire Monitoring

Detection of forest fires should be done almost at real time, also to allow DOFI to take rapid response measures. AIT in Thailand uses MODIS data for continuous fire assessment in the Greater Mekong Region incl. Lao PDR. It produces a fire map on a daily basis which is available free-of-charge. This fire information will be integrated into the MRV system.

Besides, GTZ is currently preparing a concept for a remote sensing based impact monitoring system for reducing vegetation fires and shifting cultivation, based on the Fire Information for Resource Management System (FIRMS) which integrates remote sensing and GIS technologies to deliver global MODIS hotspot/fire locations to natural resource managers and other stakeholders around the World. If the technical and financial feasibility of a FIRMS based fire monitoring system can be proven by the study, it would be worthwhile to consider a nation-wide application.

Carbon Stock Change Assessment

Terrestrial forest and carbon inventories will play a prominent role, since particularly forest degradation cannot be accurately detected with low and medium-resolution satellite imagery and high-resolution imagery is first still too expensive for large-scale implementation and second its interpretation requires high technical skills which are presently not available in Laos.

Changes in forest biomass and carbon are key issues for REDD+ monitoring and reporting. According to IPCC guidance, carbon stock change assessment shall be done using activity data and emission factors. In Lao PDR, the information base is much better for production forests than for other forest categories. SUFORD has supported Forest Management Planning in production forest, which resulted in a vast amount of information and DOF plans to carry out FMP in protection and conservation forests in the near future which will provide more data especially on above-ground vegetation. However, in order to derive at local emission factors, data from terrestrial measurements, especially from permanent sample plots will be used. NAFRI has established about 200 permanent sample plots (PSP) in production forests, but there seems to be challenges with relocating them. PSPs established by SUFORD should be mre easily re-located and will be used for monitoring changes in carbon stocks in production forest. Where Conservation forest management is supported by donors carbon stock assessment and monitoring will be combined with monitoring of biodiversity. In case the proposed NFI (see 4a.19) will not be undertaken or does not foresee PSP measurements, a system of PSP should be set-up by FIPD or NAFRI covering all forest categories in all 17 provinces.

As part of biomass removal plans, some hydropower projects have done biomass assessments, determined biomass density and developed locally-derived expansion factors. In achieving Tier 2/3 for Lao PDR, the following parameters need more attention and special surveys: species or species group specific volume equations, dry weight conversion factors for species (and probably on different land/vegetation types), age-dependent biomass expansion factor (BEF), root-shoot ratios (RSR), and carbon conversion factors. For developing allometric functions, destructive sampling is suggested, which can possibly be done during harvest activities in production forests. It is also important to come-up with a suitable vegetation classification as well as accuracy assessments. A study by a reputable international / regional research institute or consultancy firm will be carried out in close cooperation with NAFRI and the Forestry Faculty of NUOL.

At present, soil carbon is not routinely measured and excluded from the calculation of GHG emissions and removals in Lao PDR. During the first NFI, a soil survey has

been conducted, but the data still needs to analyzed and tested for its suitability for soil carbon assessment. NAFRI has some experience in doing soil analyses for agricultural land. A methodology for monitoring soil carbon shall be developed in cooperation with NAFRI, using international best practices. Currently, soil samples have to be sent abroad for analysis, therefore it is suggested to install a soil laboratory at NAFRI/NUOL. It would be best if the actual soil sampling could be integrated in the NFI, otherwise costs for a separate soil survey shall be budgeted.

During the assessment of the country capacities, it was found that FIPD has over 50 field survey staff which have sufficient capacity and experience to perform traditional forest inventories. What is however lacking in Lao PDR is capacity and experience with carbon monitoring, modeling, biometrics as well as the derivation and use of local biomass expansion factors, root-shoot ratios, wood densities and allometric functions for key tree species. The FIMP project does not foresee special trainings on setting reference (emission) levels and biomass and carbon monitoring and reporting. Therefore complementary training measures will be conducted for DoF, NAFRI and NUOL staff.

Pilot Studies on REDD+ Monitoring Methodologies

Previous experience in Lao PDR suggests that a combination of ground-based inventories and analyses of remotely sensed data (satellite images, aerial photographs) using multi-phase or multi-stage sampling approaches has to be used to monitor carbon emissions and removals. Based on current understanding, country-wide coverage of medium-resolution satellite imagery (Landsat, ALOS) combined with sample measurements either using terrestrial forest inventories or high-resolution imagery (e.g. Quickbird) or LIDAR is the best methodological choice.

Lately, many pilot studies have been carried out, focusing on methodologies for monitoring deforestation and forest degradation using remote sensing technology, sometimes combined with ground-based forest carbon inventory approaches (e.g. Forest and Forest Products Research Institute 2008-10, VTT 2009, Finnmap/Arbonaut 2009, Mekong Maps Co Ltd 2009-10, Asia Air Survey 2009-10). While care shall be taken with generalizations, some common conclusions and recommendations have been made. Firstly, the terrain and cloud conditions in Lao PDR are not conducive for pure remote sensing applications. In land use classifications with low to medium resolutions, Analysts face frequently problems in distinguishing certain land use classes, e.g. degraded forest, shifting cultivation, bamboo forest or young rubber plantations. Furthermore, it is often challenging to acquire a complete set of satellite images for a specified time interval due to clouds and haze. Almost all studies mention the need to do ground truthing, testing of interpretation results and field measurements. High resolution imagery or LIDAR is generally still too expensive for large-scale implementation, requires more processing time and human capacity which is lacking in Lao PDR for these new technologies. They can be only used for multi-stage or multi-phase sampling approaches as a substitute (or in combination with) terrestrial measurements in situations where the latter are too expensive or not feasible, e.g. due to the remoteness of the area. It will therefore be an important task for the REDD+ Office to systematically assess the experience and document lessons-learned of the pilot projects and select those methodologies which are practically applicable and feasible in the Lao PDR context. Some further pilot studies may be undertaken especially for monitoring forest degradation, particularly as new technological developments or opportunities arise.

Multi-country, Regional Monitoring

There appears to be scope for regional cooperation in REDD+ monitoring, e.g. the Greater Mekong Area, since some of the pertinent drivers (e.g. illegal logging) are of

trans-boundary nature. Moreover, a regional monitoring system is probably more cost-effective. Vietnam receives support from UN-REDD+, and Winrock and RECOFTC are involved in regional activities, incl. capacity building in monitoring. Mekong River Commission is doing monitoring as well. However, countries are still using different definitions, classification systems and technologies; as a result there is significant requirement for harmonization whose achievement will require time. Individual governments may also not be willing to give their authority on measuring, monitoring and reporting. Therefore, a study is needed that looks into the potential scope of multi-country monitoring, harmonization requirements and possible implementation arrangements.

Sub-national Monitoring

Lao PDR supports the nested approach in which the overall aim is to implement REDD+ at a national level. However, having a sub-national approach nested within a national framework is the most realistic option as it takes into account the national circumstances and capacities of the country, which differ by province, and supports project related REDD+ activities, as well as national level strategies, programs and action plans. Having a sub-national approach also means that REDD+ demonstration activities can start very quickly, and have the option of access to the voluntary carbon market. However, a nested approach requires more complex carbon accounting methodologies. The government has to set up a monitoring and accounting system, whereby the carbon monitoring should include (a) a clear national reference emission level, (b) defined sub-national reference regions and REL and (c) nested projects whose reference emission levels add up to the reference region and hence the national REL. At the moment, it is not entirely clear how the sub-national monitoring will be nested in the national monitoring system. Therefore, a consultancy is suggested which devises a mechanism to link the national monitoring system with sub-national and project-type monitoring systems. The study should also prescribe the necessary systems, design, methodologies and parameters for implementing carbon monitoring on sub-national level-b

Necessary capacities for sub-national monitoring need to be set-up, as it ultimately improves the quality of the entire monitoring system. So far, capacity building for forest and carbon monitoring has focused on the national level. SUFORD recently started to prepare baselines for eight production forests covering about 600,000 ha, but does not have budget for doing much capacity building. RECOFTC provided lately some short training on REDD+ on provincial level. Yet, there is an urgent to cover entire provinces including other forest categories and to physically set-up monitoring systems (hardware, software) and communication networks at provincial levels, also to monitor leakage. As an indication, regional offices possess currently only 4 Erdas Imagine licences and 1 ArcView licence. Moreover, PAFO/DAFO staff and other local stakeholder need to be trained in assessing carbon stock and monitoring land-use change, forest fire, deforestation and degradation. There are currently a number of ongoing and forthcoming projects (e.g. ADB BCI, PAREDD , JICA support for Protection Forests, GTZ, KfW) providing technical assistance and capacity building to provinces and districts. Close cooperation with these other interventions shall be sought. In some cases, it may be sufficient to provide some additional financing to mainstream REDD+ and carbon monitoring in the existing capacity building activities. Since not all provinces can be covered simultaneously, a phased approach focusing firstly on priority provinces using some mutually accepted selection criteria will be undertaken.

Where degradation and deforestation are mainly driven by the local population), it is advisable to work with local populations to assess carbon. The assessment can be very simple, focusing on species identification, DBH, use of forest products and

NTFP, fire occurrence etc. Such assessments can be repeated on a regular basis. This has proven to work quite effectively, with little training or oversight required (e.g. by the research project "Kyoto: Think Global Act Local"). Apart from being feasible and cheap, it can easily be combined with interventions and it is very much in line with the UNFCCC objective of inclusiveness, transparency and respect for local communities and Indigenous Peoples. So far, there is limited experience with involving communities in carbon monitoring in Lao PDR. FIPD has so far no information on village forests, but would like to map them. SUFORD is paying local people for doing forest inventories in state-owned production forests. RECOFTC has submitted a project proposal on "Forest Information Generation and Ownership by Local People in a Rapidly Changing World" (ForInfo) to the Ministry for Foreign Affairs of Finland which would include Lao PDR. Some pilot studies will be carried out, in close cooperation with on-going and upcoming pilot projects and demonstration activities.

Carbon registry

The strategic decision to follow a nested approach in Lao PDR requires a national carbon registry, which initially has to facilitate carbon accounting related to REDD+ pilot efforts, but ultimately to allow carbon accounting at national scale based on a standardized protocol. The registry will be a formal repository for recording the creation and retirement of forest carbon credits, allowing for tracking of credits and avoiding double counting/selling. As a first step, a protocol needs to be developed which defines the rules for measuring and reporting carbon emissions and removals in the registry.

Second, the conceptual design and institutional arrangements for the national carbon registry have to be prepared. The carbon registry shall be governed by a reputable, accredited organization overseen by a board consisting of various stakeholders, to be determined in the early stages of R-PP implementation. Early experience from other countries in setting-up carbon registries shall be considered. (see also component 2c on implementation arrangements)

Third, since there is currently no in-country capacity for operating and maintaining a carbon registry, a training program for registry staff, verifiers and carbon traders will be undertaken.

Reporting

While already a large amount of relevant data and information for REDD+ has been collected in Lao PDR, a major shortcoming is the proper storage, retrieval and reporting of the very information. Reporting has to be done on various levels, starting from GHG reporting on national to the reporting of emissions and removals at forest stand level. A frequent problem is that the reporting categories required by international organizations (UNFCCC, FAO) do not match with the national categories making reporting cumbersome.

Instead of preparing a separate reporting system for forest carbon and REDD+, it is will be incorporated it into the proposed integrated Forest Information System. The input of a FAO/IPCC reporting expert is needed, who would define the contents, responsibilities, communication lines, frequency of reporting, quality standards and control, approval procedures and the like. The expert will design standard reporting formats and output routines to be integrated in the FIS.

The staff of FIPD/DOF incl. on provincial and district level will need to be trained in reporting and fulfilling the various reporting requirements for UNFCCC, FAO, FCPF as well as national obligations. The training will include using the FIS for reporting purposes and database management.

Verification

The nested approach also requires more diversified verification arrangement. For the voluntary market, various carbon standards are under development for REDD+ projects, but most of them require verification by an independent certifier. In the CDM compliance market which may be regarded as a model for future REDD+ compliance market, Designated Operational Entities (DOE) are required. DOEs are either a domestic legal entity or an international organization accredited and designated, on a provisional basis until confirmed by the CMP, by the Executive Board (EB). In case of a fund-based approach between sovereign nations, it is also imaginable that verification is carried out by the country who is buying the REDD+ credits, either through their own government staff or by commissioning independent organizations.

At present, verification standards for REDD+ are lacking in Lao PDR. It is thus proposed to develop national standards and guidelines for verification.

The private sector as well as accreditation bodies, academia, and NGOs will have to play an important role in third party verification. At present, there is a shortage of DOE, causing delays in project validation and verification. It is necessary to urgently encourage the private sector to offer independent verification and certification services in Lao PDR, in order to avoid delays in verification. Initially, this service may be offered by international firms, which may set-up local dependencies, but in the long-run, national capacity need to be set-up. Besides, the understanding of verification has to be build-up in the government sector. Internal quality control systems need to be set-up in the responsible government institutions, in order to pass verification and do not lose money and time. Capacity building measures for government staff, private sector and NGOs on the verification requirements should be thus foreseen.

Table 4a: Summary of Monitoring, Reporting and Verification Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (US$'000)				
		2010	2011	2012	2013	Total
4a.1. National GHG Reporting on LULUCF	1.1 Capacity building for Climate Change Office in WREA and DoF		100	50	50	200
	1.2 Study to develop Lao specific emission and removal factors for the various emission related activities (LULUCF, AFOLU)		250			250
	1.3 Study on the implications of the Lao PDR forest definition to UNFCCC		30			30
4a.2. Nation-wide Forest Cover Change Assessment	2.1 Prepare consistent forest cover basemaps for 2010, 2005, 2000, and 1990		300	300		600
	2.2 Capacity building of FIPD staff for nation-wide forest cover assessment		200	200	100	500
4a.3. National Forest Inventory	3.1 Conduct second National Forest Inventory		750	750	500	2,000
	3.2 Prepare national forest growing stock and carbon assessment 1982-2012			150		150
4a.4. Integrated Forest Information System	4.1 Establish Forest Inventory Database System at FIPD and train staff in operation		100	50		150
	4.2 Design and set-up of Integrated Forest Information System		300	200		500
4a.5. National Fire Monitoring System	5.1 Implement a remote sensing based impact monitoring system for reducing vegetation fires and shifting cultivation		100	50	50	200
4a.6. Carbon stock assessments	6.1 Set-up and maintain a system of permanent sample plots, preferably integrated into the National Forest Inventory		200	200	200	600
	6.2 Perform studies and research to derive at local expansion factors, wood densities and allometric functions for dominant species (at least tier 2, preferably tier 3)		150	150	150	450
	6.3 Develop methodology for soil carbon analysis		120			120
	6.4 Capacity building of DOF/FIPD staff in carbon and biomass assessments		150	150	150	450
4a.7. Pilot Studies on REDD Monitoring Methodologies	7.1 Systematically assess the experience and document lessons learned from the various pilot projects		30	15	15	60
	7.2 Conduct pilot studies to explore cost-efficient solutions for monitoring REDD		200	150	150	500
4a.8. Multi-country monitoring	8.1 Assess the scope for integration/later migration into a regional, multi-country MRV system		50	25	25	100
4a.9. Sub-National Monitoring	9.1 Devise a mechanism to link the national system with sub-national and project-type systems		50			50
	9.2 Set-up physical MRV infrastructure and communication network at subnational level (17 provinces)		1,000	1,200	1,200	3,400
	9.3 Capacity building of PAFO/DAFO staff and local forest users in monitoring REDD on sub-national level		300	300	300	900
	9.4 Conduct pilots on community carbon monitoring		200	200	200	600
4a.10. Carbon registry	10.1 Decide institutional arrangements		75	75	75	225
	10.2 Prepare protocols for carbon registry		50	50	50	150
	10.3. Consultation workshop		20	0	0	20
	10.4 Develop criteria for forest types and "nested protocol"		40	20	20	80
	10.5 Harmonise with GHG inventory		40	20	0	60
4a.11. Reporting	10.6 Train staff in operating REDD registry		40	50	50	140
	11.1 Conduct training program on reporting		60	60	60	180
Total		**0**	**4,905**	**4,415**	**3,345**	**12,665**
Government		$	$	$	$	$
FCPF		**$**	**$**	**$**	**$**	**$**
FIP						
UN-REDD Programme (if applicable)		$	$	$	$	$
JICA						
SUFORD						
GTZ						
KfW						
Other Development Partner 1 (name)		$	$	$	$	$
Other Development Partner 2 (name)		$	$	$	$	$
Funding Gap		$	$	$	$	$

4b. Other Benefits and Impacts

Monitoring of Governance

At the 15th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) in December 2009, consensus was reached that a number of safeguards should be supported and promoted when undertaking REDD+ actions. These include

1. Actions that complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements
2. Transparent and effective national forest governance structures, taking into account national legislation and sovereignty
3. Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples
4. Full and effective participation of relevant stakeholders, including, in particular, indigenous peoples and local communities
5. Actions that are consistent with the conservation of natural forests and biological diversity, ensuring that actions are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits
6. Actions to address the risks of reversals
7. Actions to reduce displacement of emissions

Further, the need to monitor governance, to ensure the effective implementation of REDD+ actions, was recognised.

On 24-25 May 2010, a workshop at Chatham House, supported by the UK Department for International Development (DFID) and the UN-REDD+ Programme, was carried out to discuss the scope, needs and priorities for monitoring and assessing governance for REDD+.[6] It concluded that REDD+ governance monitoring should draw from existing initiatives, best practice, knowledge and case studies; take into account particular national circumstances and fragile governance situations; and build on existing institutions and monitoring systems where possible. It was considered that monitoring governance parameters would require an initial, one-off, assessment effort, as well as continued monitoring, and that monitoring requirements will change as progress is made through the REDD+ phases. Broad agreement was reached on a draft framework of three core governance parameters for REDD+ and key considerations (i.e. 'what to monitor')[7], and discussion initiated on fifteen practical

[6] The report of the workshop, together with background papers and powerpoint presentations, can be accessed at the following websites:
http://illegal-logging.info/item_single.php?it_id=197&it=event or
http://www.un-REDD+ .org/Events/tabid/590/language/en-US/Default.aspx

[7] The key governance parameters defined are (i) Clear, coherent policy, laws and regulations (ii) Effective implementation and enforcement of, and compliance with, those policies, laws and regulations (iii) Transparent and accountable decision-making and institutions.

principles for implementing monitoring derived from best practice and lessons learned. Furthermore, it provides preliminary guidance on tools and institutional arrangements (the how and the who).

The framework is comprehensive and can be adapted for Lao PDR taking into account particular national circumstances and governance situations which are described more detail in component 2a of the R-PP. Among others, it will monitor policy implementation, law enforcement, compliance with environmental laws (e.g. hydropower, mining), illegal logging, land use and carbon rights, equity of benefit-sharing arrangements, corruption, institutional performance, conflict resolution mechanisms. The REDD+ office shall develop country-specific indicators for the governance parameters and principles based on broad consultations with major stakeholders, to be used for measurement, reporting and verification. The FSIP project has already developed indicators for monitoring forest sector performance and the implementation of the 2020 forest strategy, which could be integrated in the system. The framework will be approved by a cross-sectoral, multi-stakeholder steering committee, e.g. the REDD+ Task Force, to ensure wide ownership and that impacts from other sectors on forests are adequately addressed.

Right after the start of the R-PP implementation, a baseline survey of pertinent governance factors will be conducted (or commissioned) by the REDD+ office, involving various government agencies or institutes (MAF, WREA, DOF, DOFI, NAFRI, NUOL, NLMA), NGOs, local communities, and the private sector. Annual monitoring exercises will be conducted based on wide consultations with stakeholder groups to evaluate progress and take corrective actions if needed.

Monitoring of Social and Environmental Safeguards

To date, the most developed framework explicitly aimed at monitoring of social and environmental safeguards for REDD+ has been established by CCBS and CARE. The standards are being developed through an inclusive process engaging governments, NGOs and other civil society organizations, indigenous peoples' organizations, international policy and research organizations and the private sector. Each draft of the standards, which aim to be benchmarks for quality, is approved by a Standards Committee representing a balance of interested parties. Consultation meetings have been held with stakeholders in a number of countries. The standards are currently tested in a number of pilot countries, and comments will be considered for the next revision of the standards in 2011.[8] Although it is framed as standards for measuring positive social and environmental impacts of REDD+, activities go beyond the scope of the safeguards, in fact most of the criteria and indicators focus on measuring elements of effective and accountable governance, as essential institutional pre-conditions for achieving positive outcomes. Therefore, application of this standard will also be instrumental in monitoring governance, and will be streamlined with the above mentioned framework developed at Chatham House to avoid overlaps and double measurements.

The standard consists of three elements:

1. Principles: these provide the key objectives that define good social and environmental performance of REDD+ programmes and are the main framework for the standards

[8] The latest version of the standards is available in various languages at: http;//www.climate-standards.org/REDD+ +

2. Criteria: for each principle a set of criteria define the minimum requirements related to processes, impacts and policies
3. Indicators: these provide the information to show if the criteria are met.

The core principles of the framework are:

1. Rights to lands, territories and resources are recognized and respected by the REDD+ program
2. The benefits of the REDD+ program are shared equitably among all relevant rights holders and stakeholders
3. The REDD+ program improves long-term livelihood security and well-being of indigenous peoples and local communities with special attention to the most vulnerable people
4. The REDD+ program contributes to broader sustainable development, respect and protection of human rights and good governance objectives
5. The REDD+ program maintains and enhances biodiversity and ecosystem services
6. All relevant rights holders and stakeholders participate fully and effectively in the REDD+ program
7. All rights holders and stakeholder have timely access to appropriate and accurate information to enable informed decision-making and good governance of the REDD+ Program
8. The REDD+ program complies with applicable local and national laws and international treaties, conventions and other instruments.

The principles and their corresponding criteria are generic, while for the indicators a framework is provided. It is up to the countries to develop their country specific indicators, tailored to national circumstances. In the first year of the R-PP implementation, the GOL will thus develop these indicators in close cooperation with interested NGOs (e.g. WWF, WCS, VFI), local communities' representatives, and the private sector.

Different options are under consideration for monitoring, reporting and verification of safeguards, ranging from self assessment by government with no reporting and verification to independent monitoring involving public reports with verified comments and independent third party verification. The suggested procedure is as follows:

1. REDD+ office carries out government-led assessment, in close consultation with other stakeholders
2. Results of the assessment will be summarized in a domestic report, which will be made available on the REDD+ office's website for public comment
3. Comments received will be published and replied to
4. Submit national reports, assuming that it will become an internationally agreed requirement for parties to report national information to the UNFCCC
5. Third party verification of the annual reports by an accredited institution is foreseen

As in the case of monitoring governance, a baseline will be prepared immediately after start of R-PP implementation, and monitoring and reporting will be done transparently on an annual basis. The monitoring will be closely coordinated with the

monitoring of the Social and Environmental Impact Assessment (SEIA) (see component 2d).

Monitoring of co-benefits

There have been some studies in the country so far to develop biological monitoring systems such as the SUFORD project, which is developing a system and approach to monitor biodiversity in production forest areas; the biological monitoring in Hin Nam No Protected Areas; and the development of biological diversity monitoring system by the Joint NAFRI-CIFOR Landscape Mosaics. The socio-economic monitoring could be done following the national census and is in place already. We could perhaps test how to integrate results of those studies into a MRV system. Capacity to undertake such monitoring is very limited at present and so progress will depend on donor support for funding and for building up capacity

Independent Forest Monitoring

Independent Forest Monitoring (IFM) has been developed over the last decade to monitor logging, legal compliance and forest law enforcement. It focuses on ground truthing through field investigations, providing publicly accessible, objective and reliable evidence on forest management and illegal activities. In effect it is a form of systems or governance monitoring which supports forest law enforcement and increases transparency. The first field-based IFM program was established by Global Witness in Cambodia in 1999.

IFM will be based on a contract between the local host organization (DOF or WREA) and an independent monitor (typically an NGO but sometimes a private entity still to be defined). This official but independent status assists in ensuring that reports are acted upon by the government. It also strengthens civil society by providing a means to access and channel information. There is a set of fundamental principles which should be applied for IFM to operate effectively:

- Access to information. The monitor has the right of access to relevant information held by the Forest Authority and other relevant ministries / authorities, without the need for prior approval and is present during meetings between the Enforcement Agency and suspected violators.
- Access to the field. The monitor has the right of movement and access to any part of the country to carry out control missions.
- Freedom to publish the findings. Once approved by a multi-stakeholder Reporting Panel, which should be established to peer review reports and act as a buffer between the monitor and stakeholders, the reports must be published by the host organization. In the absence of approval in a given time period (e.g. 30 days) the monitor has the right to publish reports unilaterally.

Multi-disciplinary monitoring teams (including foresters and lawyers) will be set-up and joint field missions with forest authority officials will be conducted. Field work will combine a systematic approach, gradually covering all logging permits, and rapid response to specific cases requiring immediate attention. While official law enforcement bodies will retain responsibility to act on recommendations, investigations into different forms of illegality by the monitor will demonstrate where the system is failing and provide guidance on how to address it. An approach to reporting that combines a series of field reports with occasional summary / thematic reports assessing the extent to which recommendations are acted upon will provide reliable evidence on the implementation of policy measures. Capacity building of enforcement officials (DOFI, police), local communities and civil society will be an

important part of the IFM program, along with establishing multi-stakeholder reporting panels and participatory monitoring.

The monitor will set-up of an interactive website in the Internet, where relevant information and reports are published, maps and imagery are shown (e.g. on illegal logging or shifting cultivation) and where users (incl. NGOs, representatives of forest-dependent people, private sector) can report observed forest crime as well as possible problems with legal prosecution. The information generated by IFM will be fed back to the REDD+ office and REDD+ task force and used to improve REDD+ implementation.

The proposed IFM is different from the “Independent Forest Cover Monitoring” (IFCM) supported by SUFORD earlier. IFCM was based on the visual assessment of images and supporting field work to verify and observe the area of interest which was mainly restricted to PFA. Besides, the monitoring was exclusively done by government institutions, namely by the Environment Data Centre in the Science, Technology and Environment Agency. IFCM was abandoned in 2009, and the Environment Data Centre evolved into a Remote Sensing Centre (RSC) under Water and Environmental Research Institute (WERI), WREA is no longer responsible for IFCM. The RCS is however responsible for preparing the Integrated Environment Assessment Report and Environment Outlook for Lao PDR, handles a lot of environmental data and due to the previous exposure to IFCM, should thus function as a clearinghouse mechanism for the data generated by the proposed IFM.

Table 4b: Summary of Monitoring other benefits and impacts Activities and Budget.

Main Activity	Sub-Activity	Estimated Cost (US$'000)				
		2010	2011	2012	2013	TOTAL
4b1. Support to independent, third-party verification	and guidelines for verification		30			30
	4b.1.2 Build understanding of independent verification and certification services		50	50	50	150
4b.2. Monitoring of governance	4b.2.1 Develop framework and indicators for governance monitoring		50			50
	4b.2.2 Conduct baseline survey		100			100
	4b.2.3 Conduct annual monitoring			100	100	200
4b.3. Monitoring of social and environmental safeguards	4b.3.1 Develop framework and indicators for monitoring of safeguards		50			50
	4b.3.2 Conduct baseline survey		100			100
	4b.3.3 Conduct annual monitoring			100	100	200
4b.4. Independent forest monitoring	4b.4.1 Capacity building of enforcement officials		80	80	80	240
	4b.4.2 Contract IFM monitor		150	150	150	450
	4b.4.3 Set-up and operate interactive website		50	50	50	150
4b.5. Monitoring illegal logging	4b.5.1 Institutional support to DOFI in monitoring, reporting and mapping illegal logging in cooperation with NGOs and civil society		50	100	100	250
	4b.5.2. Assess the scope of un-manned aerial vehicles (drones) for monitoring illegal logging			50		
TOTAL		0	660	530	530	1,970
Government		$	$	$	$	$
FCPF		**$**	**$**	**$**	**$**	**$**
FIP						
UN-REDD Programme (if applicable)		$	$	$	$	$
JICA						
SUFORD						
GTZ						
KfW						
Other Development Partner 1 (name)		$	$	$	$	$
Other Development Partner 2 (name)		$	$	$	$	$
Funding Gap		$	$	$	$	$

Component 5: Schedule and budget

Table 5.1 Consolidated budget for Readiness Implementation

Main Activity	Sub-Activity	Estimated Cost (US$'000)					
		2010	2011	2012	2013	TOTAL	
1a.1. REDD Office	1a.1.1. Veh. And Equ	0	100	20	20	140	
	1a.1.2. Operating costs	0	50	50	50	150	
	1a.1.3. Staff costs	0	44	44	44	132	
	1a.1.4. TWG Meetings	0	20	20	20	60	
	1a.1.5. Staff training	0	50	50	0	100	*
	1a.1.6. Consultation W'shops	50	20	0	0	70	*
	1a.1.7. Technical support	150	160	160	160	630	
	1a.1.8. Provincial REDD office		32	32	32	96	
	1a.1.9. Capacity building		90	60	60	210	
	1a.1.10. Attendance at International meetings		40	40	20	100	
1b.1. Awareness raising	1b1.1 Estab. SCP WG	0	50	50	50	200	*
	1b1.2 Stakeholder info sharing	0	20	20	20	80	*
1b.2. Focus groups	1b2.1 Synthesis of experience	0	20	20	20	80	*
	1b2,2 Pilot projects	0	50	50	50	200	
1b.3. Validation	1b3.1 Consultation	0	50	50	50	200	
2a.1. Updating emissions forecasts	Update model data	0	10	10	10	30	
	Coordinate with CC Office	0	10	10	10	30	
2b.1. Mining and Hydro-power	2b1.1. Monitoring	0	50	50	0	100	
2b.2. Land use planning	2b2.1. Province	0	120	60	0	180	*
	2b2.2. PLUP Protected Area	0	100	100	100	300	*
	2b2.3. PLUP Protection forest	0	100	100	100	300	†
	2b2.4. PLUP Production forest	0	100	100	100	300	
	2b2.5. Community forest protection	0	150	150	150	450	†
	2b2.6. Forest restoration	0	300	600	600	1,500	
2b.3. Illegal logging	2b3.2. Law enforcement	0	120	0	0	120	
	2b3.2.Wood consumption	0	100	0	0	100	
	2b3.2. Surveillance	0	165	100	100	365	
2b.4. Shifting cultivation	2b4.1. Extension	0	100	100	0	200	*b
	2.4.2. Private sector	0	100	100	0	200	
	2.4.3. R & D	0	100	0	0	100	*
2b.5. Capacity building	2.5.1.1. Prov/Dist/Vill level	0	100	100	100	300	*b
2c.1. Develop regulatory framework		0	80	60	100	240	*
2c.2. Establish financial mgmt. arr.		0	100	323	301	724	
2c.3. Develop Benefit sharing arr.		0	190	0	70	260	*
2c.4. Information & knowledge mgmt		0	40	200	120	360	*
2c.5. Capacity building		0	70	100	50	220	*

2d.1. Diagnostic analysis		0	50	0	0	50	
2d.2. Stakeholder analysis		0	100	0	0	100	
2d.3. Analysis of WB SES		0	50	0	0	50	
2d.4. National SEIA WG		0	20	20	20	60	
2d.5. SEIA for each pilot activity		0	200	100	100	400	
3. National REL setting	3.1 Analysis of new data and improvement of emission model	0	0	20	20	40	
	3.2 REL baseline Model in Provincial level	0	45	0	0	45	*
4a.1. National GHG Reporting on LULUCF	1.1 Capacity building for Climate Change Office in WREA and DoF	0	100	50	50	200	
	1.2 Study to develop Lao specific emission and removal factors for the various emission related	0	250	0	0	250	
	1.3 Study on implications of the Lao PDR forest definition to UNFCCC	0	30	0	0	30	
4a.2. Nation-wide Forest Cover Change Assessment	2.1 Prepare consistent forest cover basemaps for 2010, 2005, 2000, and 1990	0	300	300	0	600	c
	2.2 Capacity building of FIPD staff for nation-wide forest cover assessment	0	200	200	100	500	c
4a.3. National Forest Inventory	3.1 Conduct second National Forest Inventory	0	750	750	500	2,000	c
	3.2 Prepare national forest growing stock and carbon assessment 1982-2012	0	0	150	0	150	
4a.4. Integrated Forest Information System	4.1 Establish Forest Inventory Database System at FIPD and train staff in operation	0	100	50	0	150	c
	4.2 Design and set-up of Integrated Forest Information System	0	300	200	0	500	d
4a.5. National Fire Monitoring System	5.1 Implement a remote sensing based impact monitoring system for reducing vegetation fires and shifting cultivation	0	100	50	50	200	*
4a.6. Carbon stock assessments	6.1 Set-up and maintain a system of permanent sample plots, preferably integrated into the National Forest Inventory	0	200	200	200	600	
	6.2 Perform studies and research to derive at local expansion factors, wood densities and allometric functions for dominant species (at least tier 2, preferably tier 3)	0	150	150	150	450	
	6.3 Develop methodology for soil carbon analysis	0	120	0	0	120	
	6.4 Capacity building of DOF/FIPD staff in carbon and biomass assessments	0	150	150	150	450	
4a.7. Pilot Studies on REDD Monitoring Methodologies	7.1 Systematically assess the experience and document lessons learned from the various pilot projects	0	30	15	15	60	*
	7.2 Conduct pilot studies to explore cost-efficient solutions for monitoring REDD	0	200	150	150	500	
4a.8. Multi-country monitoring	8.1 Assess the scope for integration/later migration into a regional, multi-country MRV system	0	50	25	25	100	

4a.9. Sub-National Monitoring	9.1 Devise a mechanism to link the national system with sub-national and project-type systems	0	50	0	0	50	* d
	9.2 Set-up physical MRV infrastructure and communication network at subnational level (17 provinces)	0	1,000	1,200	1,200	3,400	d
	9.3 Capacity building of PAFO/DAFO staff and local forest users in monitoring REDD on sub-national level	0	300	300	300	900	
	9.4 Conduct pilots on community carbon monitoring	0	200	200	200	600	
4a.10. Carbon registry	10.1 Decide institutional arrangements	0	75	75	75	225	
	10.2 Prepare protocols for carbon registry	0	50	50	50	150	
	10.3. Consultation workshop	0	20	0	0	20	
	10.4 Develop criteria for forest types and "nested protocol"	0	40	20	20	80	
	10.5 Harmonise with GHG inventory	0	40	20	0	60	
	10.6 Train staff in operating REDD registry	0	40	50	50	140	
4a.11. Reporting	11.1 Conduct training program on reporting	0	60	60	60	180	
4b1. Support to independent, third-party verification	4b.1..1 Develop national standards and guidelines for verification	0	30	0	0	30	
	4b.1.2 Build understanding of independent verification and certification services	0	50	50	50	150	
4b.2. Monitoring of governance	4b.2.1 Develop framework and indicators for governance monitoring	0	50	0	0	50	
	4b.2.2 Conduct baseline survey	0	100	0	0	100	
	4b.2.3 Conduct annual monitoring	0	0	100	100	200	
4b.3. Monitoring of soc. & envir. safeguards and co-benefits	4b.3.1 Develop framework and indicators for monitoring of safeguards	0	50	0	0	50	
	4b.3.2 Conduct baseline survey	0	100	0	0	100	
	4b.3.3 Conduct annual monitoring	0	50	150	150	350	
4b.4. Monitoring illegal logging	4b.4.1 Institutional support to DOFI in monitoring, reporting and mapping illegal logging in cooperation with NGOs and civil society	0	50	100	100	250	
Total		200	8,851	7,884	6,392	23,327	

Government (Assumed to be 10% of funds requested from FCPF includes staff costs under 1a.1.3.)	0	121	101	97	319	
FCPF (Total of activities highlighted in yellow)	200	1,205	1,013	971	3,389	
FIP (Balance of funds required for readiness but some will be covered by existing project commitments.)	0	7,526	6,770	5,324	19,619	
Total					23,327	

Following projects and program contributes to R-PP activities mentioned above, with covering all of each item or partly. These allocation will be made clear with a detail work plan and time schedule to be developed.

- † PAREDD will implement PLUP in Protection Forest
- * Included in CLiPAD project activities
- b Included in PAREDD project activities

- c Included in PFIM activities
- d Included in FPP activates
- Forestry Sector Capacity Development Project will assist activities in 1a, 1b and 2b
- SUFORD will assist 1a, 1b, 2b and 4a

Table 5.2 Project and Program contributes overall REDD+ and each budget

Source of Support	Estimated Cost (US$'000)					
	2010	2011	2012	2013	TOTAL	
KfW (10 mio Euro for 7 years)					5,143	a
GTZ (CliPAD programme 4 mio Euro)* , additional REDD relevant commitments: Hin Nam No National Park 2,5 mio. Euro (2011-2013), Climate Change Awareness and Environmental Education 2,0 mio Euro Project 2011-2013	720	1,320	1,320	1,440	4,800	a
JICA						
- PAREDD, excluding adviser	320	320	320	320	1,280	
- Forestry Sector Capacity Development Project (with Sida), excluding adviser	500	500	500	500	2,000	
- Program of Forest Information Management (PFIM)					5,000	
- Program of Forest Preservation					10,000	
World Bank/Government of Finland (SUFORD)	5,000	4,200	2,300		11,500	a
TOTAL	8,750	17,202	14,336	10,665	82,669	

a : converted from Euros @ €1=US$1.20

Annex 1 List of stakeholders consulted

Date	Name	Organisation
7th April	Ketkeo Phouangphet, Soudchay Nhouyvanisvong,	Investment Division, Department of Planning, MAF
7th April	Thatheva Saphangthong	DD, Information Centre, Permanent Secretary Office, MAF
8th April	Khampadith Khammounheuang	Deputy Director-General, Environment Department, WREA
8th April	Vongdeuane Vongsiharath	DG, Dept. Land Planning and Development, NLMA
8th April	Chanthaviphone Inthavong	LNRRIC, NLMA
9th April	Maysy Viengvilay	Director Technical and Environment Division, Ministry of Public Works and Transport
12th April	Chandra Shekhar Silori	RECOFT
13th April	Georg Bucholz	GTZ-CLiPAD
18th April	Ajay Nioding	Aditya Birla Birla-Lao Pulp and Plantations Co. Ltd.
21 April	Oliver Schoenweger , Doris von Behaim	GTZ-LMRP,
22 April	Martin Greijmans	SNV
26th April	Namura Takayuki, Miyuki Ishikawa, Kaori Sakamaki	Participatory Land and Forest management Project (PAREDD), JICA
26th April	Iain Craig	Agrobiodiversity Initiative-TABI
27th April	Roland Eve, Somphone Bouasavanh	WWF
27th Apil	Bruno Cammaert	UNDP-UNEP Environmet Unit
28th April	Andreas Heinimann, Daniel Muller, Cornelia Hett	Centre for Development and Environment, WREA
28th April	Peter Jensen, Singsavanh Singkavongxay, Henning Mejer	WREA , Department of Environment, SEM II
29th April	Arlyne Johnson, Michael Hedemark, Henry Travers	Wildlife Conservation Society
29th April	Grace Wong, Delaphone Sihanath	UNDP, Poverty Environment Initiative
3rd May	Khamphachanh Boungnakeo	Division of Forestry Investigation, Department of Forest Inspection
4th May	Christoph Muziol	IUCN
4th May	Franck Boulin	UNDP- Joint Support Program for the National Assembly
6th May	Andrew Bartlett	Laos Extension for Agriculture Project
7th May	Pat Dye	Nam Theun 2 Power Company
7th May	Peter Fogde, Petter Svenson	Burapha Group
7th May	Thongsavanh Soulignamat	President, Lao National Wooden Products Industry Association
7th May	Khamsone Sysanhouth, Neils Morel,	PCARD
10th May	Unna Chokkalingam	Forest Carbon Asia

10th May	Stephan Ekelund, Sisavanh	ADB Lao Resident Mission
11th May	Horst Weyerhaeuser, Carl Mossberg	Upland Research and Capacity Development Programme
12th May	Saysamme Phothisat	Director Forest protection Division, DOF
12th May	Mrs. Manivone Viravong	President, Lao Tree Plantation and Cash Crops Business Owners Association
13th May	Bouaphan	Director, Forest Resource Conservation Division
13th May	Immala Inthabonaly, Vonexay Boattanavong	Climate Change Office
17th May	Rick Reece, Joost Foppes, Khamla	Village Focus International

Annex 2: Summary of main views made in the first consultation workshop

- The REDD Task Force should be in the Prime Minister's Office to ensure strong cross sector coordination. There are 8 Working Groups related to various aspects of Climate Change, and REDD needs to be integrated into their work.
- Bolikhamxay province reported that they had signed an MOU with WCS and had already received some GEF funds for preparing a management plan for NPA and propose seeking REDD funding to support implementation.
- Capacity building is needed for provincial level staff to know more about the carbon stocks with different land uses so that they can take this into account when reviewing applications for concessions.
- The question of who owns the carbon is very important
- For the first and second national communication, data from 1990 and 2000 were used respectively, therefore it was suggested to use data from 1990 and 2000 as well in defining the REL
- While WREA should be the core agency for REL setting, DoF has an important role in providing necessary forest-related base information.
- The progress towards the forest cover goal is rather limited, due to inadequate law enforcement, weak collaboration of sectors, and lack of budget. It is a nice policy which in practice is not implemented. (This suggests that it should not been used as future reference emission level)
- Capacity building is needed for REL establishment, application of GIS and RS in land cover change assessments, but also species-related information (such as allometric functions, wood density, expansion factors, allometric functions). The capacity building requirements are huge, yet the budget for training is very limited, especially at provincial and district level. Continuous upgrading of staff skills is required not only on national level.
- The establishment of rubber plantations could be counted towards the 70% forest cover goal, although their development is frequently upon cost of natural forests (which would thus imply a loss of carbon stocks)
- Cross-cutting nature of REDD+ should be acknowledged in defining the institutions responsible for REL setting
- For transparency and credibility of REDD+, a legal framework and mechanism as well as law enforcement and independent audits are needed.
- Communities shall be involved in the monitoring, as evidence from Vietnam suggests. In Vietnam, communities are paid for collecting forest information. UN-REDD can provide further info.
- In MRV, one should not overly rely on remote sensing technology. Over-use of complex technology should be avoided. It was stated that many European forest administrations are not using remote sensing technology for forest monitoring. Instead, they just use terrestrial information.
- A regional approach to MRV in the Mekong-Basin could be very promising (similar to Congo Basin). UN-REDD would be interested in supporting this.
- It was suggested that REDD+ benefits need to focus on communities to enable them to improve their livelihoods. The private sector should not get compensated, because their business is already profitable.
- Any regulation related to the benefit sharing distribution system needs to be based on intensive stakeholder consultation/ negotiation and needs to take existing legislations into account.
- Carbon ownership – although natural forests belong to the national community, the government grants user rights to communities, organizations and therefore the user/ manager is owner (or co-owner) of the carbon. In the case of plantation it is more clear as according to the forestry law the entity who develops plantation (using own labor/ funds) owns them.

- When concession companies clear forest they should pay the full value of the carbon that they are removing, which can be several thousand dollars in good forest. If they had to pay for the carbon on the land this would provide a strong incentive to leave good forest and use land with low carbon stocks.
- Carbon ownership – linked to land categories outlined in the land law.
- There is a problem with equity of sharing REDD+ benefits – because forests are not distributed equally in Lao PDR. Areas where there is no forest will not benefit from REDD+ payments.
- In reality and for REDD+ it is important to balance development and conservation goals, as they pull in different directions. Development activities are causing deforestation, including plantation development – so including plantations into REDD+ efforts needs to be carefully looked at, as there is the risk that natural forests are replaced by them.
- Much can be learned from neighboring countries and their experiences related to benefit sharing system – here emphasis was very much placed on including ethnic minorities in the consultation process.
- Stakeholder consultations related to benefit sharing arrangements need to include all sectors and hierarchy levels, as well as civil society and communities and the rights and traditions of any ethnic communities involved need to be respected
- UNDP can help with the preparation of materials such as pamphlets in all local Lao languages.
- All stakeholders that take part in REDD+ efforts need to get a share/ compensated – the share needs to be based on how big their contributions are to the overall efforts/ success.
- In the closing remarks, the Chairman suggested that the target of 70% forest cover by 2020 needs to be reviewed

ANNEX 3 **Main views made in the second consultation workshop**

RPP Meeting Notes, Day 2, 11 August 2010, Lane Xang Hotel, JF.

Summary Discussion Group 1, Presented by Ms Khamla Phoutharath, RightsLINK Project Director, VFI.

Topic 1: Strategy Options

1 Mining and other construction projects

- Need clear criteria, rules, no open pit mining
- Need good ESIA before being approved
- Need strict monitoring while being implemented
- The law should be enforced strictly when there is no compliance

2 Agricultural Concessions

- The approval process must be more thorough and include carbon criteria
- Concessions should be put where they have least effect on carbon stocks, so preferably planned on non-stocked forest, not in dense forest

3 Small farmers

- Small farmers, especially from ethnic minorities, should be given alternative livelihood options in order to stop shifting cultivation

Topic 2: Organization of implementation

- We want a more clear structure, organigram of the setup should also show who will implement the REDD program at province and district levels, not only national level
- The central coordinating agency at national level should be DoF, at province level the province forestry section and at district level the district forestry section

Topic 3: Funding Mechanisms and Benefit Sharing

- For the funding, we need a separate fund, but it should be managed by a committee representing all stakeholders.
- Money received from grants should go into a separate trust fund, money from loans needs to pass through the government system
- On the benefit sharing, our group believes we could learn lessons from other countries where BSS mechanisms have already been tried out.

- Which parties will be entitled to receive the benefits from REDD should be laid down in clear decrees and regulations.

- We want to ask: if a company establishes a plantation, will they be asked to pay for the carbon lost during the clearing over the first few years? How long should they keep paying, after 25 years will they still pay after the plantation is fully grown and stores carbon ?

Mr. Bouaphan, head of Division for Forest Resources conservation, DoF: We need to be clear who will be responsible for implementing all the roles, especially for monitoring, how will we fund all this work, to what extent could the private sector support forest monitoring work. In the case of protected areas, if villagers were moved out of the area, for the ethnic groups, there are many social problems, how could they benefit from support to have alternative livelihoods. We need to be more clear on how international NGOs can really work alongside with Government organizations in this REDD scheme, and how this will be organized by the Ministry of Foreign Affairs.

Ms Vilip Buasisavath **Ministry of Foreign Affairs:** I am not working in the section dealing with NGO so I do not really feel comfortable to answer this question, may I ask the chairman to deal directly with our Ministry?

Summary Discussion Group 2, presented by Mr. Savanh, Deputy Director DFRC, DoF.

Mostly in our group we came up with a lot of suggestions on issues that need more clarification. I summarized our recommendations in six headings:

Topic 1: Strategy

1 there should be a special legislative system for REDD

2 the strategy should have special sections dealing with implementation of REDD for each of the three forest types: conservation forests, protected forests and production forests

3 Capacity building for staff managing protected areas needs more support

4 We need clear data on all the factors that cause deforestation: legal and illegal logging, conversion of forests to commercial agriculture, shifting cultivation, etc.

5 We should set clear priorities for forest restoration and reforestation, how many hectares, where to be located etc.

Topic 2: Implementation and Organization

1 The organization structure should be defined not only at national level, but also at province and district level

2 REDD deserves a separate department “krom” or even ministry “kasuang”

3 We need pilot projects and practical models of REDD at province and district level

Topic 3: Benefit sharing

1 We need a clear regulatory set up for benefit sharing, defining roles, responsibilities and entitlements of all parties

2 The entitlement to benefits needs to be defined clearly at all levels (national, province, district, village)

3 The structure of benefit sharing between Government and citizens needs to be clarified

Topic 4: Governance

1 The REDD process needs to be aligned better to the existing land use zoning and planning process

2 Law enforcement needs to be strengthened to curb illegal logging

3 Roles and responsibilities of all parties involved need to be spelled out more clearly

4 Ethnic minorities need to be given alternative livelihoods to stop shifting cultivation

5 The period over which concessions for agricultural plantations is granted is now 50 years, this is much too long. The period should be shortened to make it easier to reforest plantation areas that are no longer used.

6 Participation of all stakeholders must be ensured in the organizational set-up

Topic 5: Opportunities

1 Every organization involved already has a functioning management system

2 There are skilled staff available in every department

3 The national five year development plan supports all the REDD activities

4 In Bolikhamxay, village groups are protecting stands of “mai tiu” Cratoxylon spp. to regenerate. This tree is used to make high grade charcoal. Could this become a REDD model activity?

Topic 6: Capacity Building Needs

1 Capacity building should start at Ministerial levels, to create good understanding on the REDD process and its implications among senior policy makers

2 Capacity building at village levels is much needed, especially education materials should be prepared in local ethnic languages, so that local communities can engage in forest management

3 Study tours should be conducted to sites where REDD processes are already working successfully.

Mr. Bountavi, Lao Front for National Construction: it is not correct to associate shifting cultivation with ethnic minority groups. All ethnic groups engage in upland

agriculture. We should perhaps not use the word shifting cultivation, but rather talk about upland agriculture.

Mr. Pheng, WREA: it is important to align and coordinate many of the regulations proposed for REDD with the existing regulations from various line agencies, e.g. our department. SIEA we use the same thing but a slightly different term, strategic or social SIEA, ESIA? We need to be clear on this term.

Ms. Khamla, World Bank: In our terminology, we use the word strategic environmental assessment. (I missed part of her argument).

Summary of Discussion Group 3, presented by Mr. Somchai, Director Forest Inventory and Planning Department (FIPD), DoF.

1 To be added: on monitoring forest cover changes, we should also monitor forest fires, as another source of carbon emissions. We should have a management strategy for this.

2 For all sorts of concessions, we should have good environmental assessments which include carbon assessments. The methodology should be clear. During project implementation, the implementing agencies should also have clear guidelines for monitoring impacts on forests and carbon.

3 REDD is implemented on many levels, we should be clear on each level who is responsible for what. What technical skills are needed, how many staff will have to be made available to work on REDD etc.

4 For the finance system, we discussed the most important thing is to have a clear and transparent accounting system, who will be the key agency to look after this?

5 As to the benefit sharing, we need to be clear who will be receiving the benefits and who will be responsible for equitable distribution of benefits. We already had many discussions about this topic in the development of the Forest Development Fund. Should these two funds be combined or kept separate?

Dr. Silavanh, chair: many thanks to all groups. We can see that we have some more work to do to define the organization and the benefit sharing. Many of the issues raised here about the impact of land concessions on forest resources are also discussed in the national assembly at present. So it is our duty to constantly improve our management systems.

After Coffee Break:

Dr. Silavanh, chair: We need to be clear on CDM, is it really generating good forests on the long term? Monitoring is very important. Also the effects of silvicultural treatments, we need to know what they actually end up delivering. How much carbon is added each year by these activities? I have seen a plan to bring a rubber concession in Bolikhamxay under CDM, many organizations supported this, but is it really going to deliver the carbon benefits projected, this we cannot say yet. Under REDD we can also have plantations, but it should be mainly for trees which are not going to be cut.

So there is a difference between CDM and REDD. If we look back, there are only 18 or so CDM projects since the program was started in 1997, so now we have to consider if we continue with CDM, or just move on to REDD for future forest plantations.

It is not going to be like the project in Vietnam, where WB money was used to give direct incentives to villagers to plant trees and look after them for the first three years. In Laos we had a Japanese project in the Vang Vieng area like that, they spent a lot of time to plant mainly acacia, to be harvested after 7 years and share benefits with villagers, who would receive 75% of the profits.

So 30% from the benefits would go to the government. Another part would go to the village development fund, some part will go to the forestry for maintaining nurseries etc. Similar benefit sharing schemes also are foreseen for the national production forests, but so far the benefits have been quite small. Similar schemes are also tried out for sharing tourism benefits in national protected areas, but also there the income had been quite small so far.

As to the management of agricultural concessions, we have several clear regulations issued by the national assembly and implemented by the national land management authority. For the hydropower dams, there are stringent environmental standards already in place, also there are clear guidelines on resettlement and ethnic groups. There is also the Stora Enso project, which is a model of forest plantation following good social and environmental standards.

It is important that all parties use proper documents and also implement according to what is written in the documents. In this way we will have real development. The RPP is another way to foster good quality development. This topic of environmental management is a big priority of the Lao Government, we can see it being discussed in many other occasions. Now is the time to really implement all these measures that have been discussed at length. This is a big job, we all need to do our best to make it work. Now I want to invite you to add your ideas in a general discussion.

Mr. Thien, National Land Management Authority (NLMA): About the various strategy options under REDD, there is a lot of talk about the need to manage agricultural concessions and other land concessions (mining, industry). How should these best be managed? We are trying to achieve a target of 70% forest cover in 2020. So now we have new targets for carbon as well. I want to raise the issue of hydropower dam construction. So many dams are now being proposed, there is a risk for the environment. For all these things we should compare the benefits and costs. The decision makers need to consider all aspects in this matter. There is biodiversity to be considered as well. It is important to zone land and have land set aside for forest protection.

As to the monitoring, I believe that in the future every project should pass proper environmental and social assessments before being approved. We need to take this more seriously. So far, most projects seem to pass, is this really correct? There is also the option of community forest management, so far we have not really started issuing permits for communities to manage land, but it could be an option, to preserve access of villagers to NTFP and other forest benefits. As to the villagers who practice shifting cultivation, the most important thing is for villagers to have enough permanent plots where they practice agriculture, e.g. terracing for paddy fields (na kandai). These things can be promoted by food for work. We should find agricultural activities that are more profitable than shifting cultivation. We need more support for this type of development.

Dr. Silavanh, chair: most of these things have already been discussed and are well known. We should not expect the REDD program to solve all the problems of the country. It is a system aimed at preserving carbon, which will lead to many benefits if every party involved puts in their part. Land use planning is very important and should be implemented by the relevant authorities.

Some people think too much about resettling people out of forests. We should avoid this as much as possible. The social and financial costs of resettlement are too high. It is better to leave people in their original environment and involve them on the spot in sustainable forest management systems.

We need local communities to feel ownership for the land, so they will be motivated to look after our natural resources. Villagers depend much on NTFPs for survival, this is the key to good forest management. The REDD project offers good opportunities to support ethnic groups to play a role in sustainable forest management. Under the SUFORD project, we have already develop a good manual for ethnic groups to be involved in forest management.

As to the different types of forest where REDD could be applied, I believe it applies to all of them, but we need to be clear on the management guidelines for each of them. The REDD taskforce should pay attention to developing such guidelines, if possible. Under the law, all three types of forest will be used and need to be managed somehow. And each of the types of forest contains carbon. In Indonesia, they already have worked out management systems according to these three types of forest, which we may be able to build upon.

Mr. Khamphay Manivong, DoF: I believe the REDD applies to all three types of forest, this concept is already included in the draft RPP.

Dr. Silavanh, chair: The meeting has anything to add about the need to have special legislation for REDD? Maybe it is a little bit too much to have a totally separate legislation for REDD, we already have so many regulations in various departments that will supply many of the requirements for a good REDD system. We need to harmonize the existing legislation to make sure REDD can be implemented. Making a whole new law is a time consuming process, which may delay effective implementation of REDD.

Now let us talk about the organizational set-up for REDD. The working group is mainly meant to be a tool for technical experts to develop the right methodologies to be applied, e.g. for estimating the amount of carbon emitted from Lao forests, etc. These techniques have priority. In Indonesia they already get benefits from REDD because they have a good system for measuring and estimating their carbon. They already are entitled to receive 1 billion dollar because of this.

Also we need to upgrade our mapping techniques, to be up to standard. We need all line departments to do their part to come to a nationally agreed clear data to support our carbon claims. We need to be able to submit our claims according to international standards. It is a pity we could not have representatives from the Ministry of Justice present at our meeting today. There are many issues to be discussed and decided on the legal system. Without a good legal system, we cannot apply for REDD benefits. There is also a national climate change commission, we need to work closely with them.

Then we should not forget the importance of working with the NGOs. This is a requirement of the REDD process, we need to make sure NGOs are included in the

process. The same applies to the private sector, their contributions are very much required. There is also a Norwegian project to support the private sector to take part in CDM type processes. We also need private consultancy companies as they have the competencies we need for many of the technical aspects of the REDD system.

Now a word on the benefit sharing system (BSS). The idea of one of the groups, to combine the forest fund with the future REDD fund is interesting. It may be difficult, because the way both processes are set up is quite different. It depends on the project type. Like the GTZ project in Sayabouli, they are experimenting with a funding system, also the JICA project in Luang Prabang are experimenting with such a system. In the Amazon region they also have a funding system for environmental benefits. This systems looks very strong, also in the Congo basin they are developing such a system between five or six countries. It would be great if we could have such a system in the Mekong basin as well.

Then there is the option of national funds. In Indonesia there already is a strong forest fund. In Laos we have an environmental fund, managed by Mr. Soukata. They have quite a range of projects on-going. We could have a similar fund for the REDD. But we should realize it takes a while for the carbon credits to mature.

We will also depend on the carbon market, how it will develop. We will negotiate with rich countries who need to compensate for their high emissions from industry. Will the price for carbon stay stable? There will be two types of market: the compliance market and the exchange market. So our success will depend on many factors. This is all included in the present RPP. Nowadays they talk about PES “Payment for Ecosystems”, incentives for preserving the environment. These can include payments for many functions of the forest, including even the supply of water for agriculture. This is what they mean by a “nested” approach.

So as to the benefit sharing, we need to develop test cases in the country, we cannot simply copy examples from other countries. E.g. in Cambodia they share the benefits 50-50%, in Indonesia 70-30% with the villagers, however the conditions differ between the countries. It depends very much on how we regulate all the elements of the process. Who will pay for the preparatory data collection, who will pay for the management of the system. Several NGOs, IUCN, WWF, WCS are experimenting with benefit sharing systems for biodiversity protected areas. So these systems are under development. In principle, the people who manage the resources directly, should get most of the benefits. So our challenge is to work out a fair system of benefit sharing. This is all new, we need to learn how to work with this.

Our present REDD taskforce already comprises many relevant stakeholders. We have had many meetings, which I believe have built a strong understanding of the REDD concepts among a large number of people. We also received training from RECOFTC. I would like to invite the Province representatives present here to consider proposing forest blocks where REDD processes could be applied as trials.

I hope I summarized most of the issues we discussed properly, please could you add your comments?

Ms. Lampay, FAO: I would like to ask if anybody knows about the Mountain Partnership? Could Lao also become a member? **Answer (Dr. Silavanh):** It would be nice if FAO could assist us to explore the options for becoming the member of this regional group. We are already well connected to many of the regional networks supported by FAO. FAO also supports us directly about REDD. But the capacity of

FAO to support forestry work in Laos at national level so far has been weak. We remain interested in receiving more support from FAO.

Mr. Oula Somchanmavong, Planning and Investment. I would like to ask, what is the interest of the richer countries to give money to poor countries for this? **Dr. Silavanh answers:** this is agreed in various international treaties and agreements aimed at reducing global warming. Countries like Laos do not emit much carbon, but still have a lot of carbon in forests. Richer countries are putting too much carbon in the air, but cannot easily reduce their emissions quickly enough. They cannot close all their factories, they try to make them cleaner but it takes time. So the richer countries agree to support the poorer countries to keep their carbon in their forests. In this way they can show that they did something to reduce carbon emissions. So Laos could receive such support from France or any other rich country, Australia, New Zealand, anywhere. Now some countries like India and Brazil have already counted their carbon very well, so they were quick to receive carbon credits. So the point is to have all these requirements in place to make it easy for richer countries to provide REDD support to Laos.

Mr. Khampay Manivong, DoF: Are there any projects that propose to undertake REDD activities at province level? No reactions. **Dr. Silavanh:** there is only the PARED project, and the JICA Project

Ms. Khamla, World Bank. I would like to add more background on why the World Bank is supporting the REDD process. As Dr. Silavanh explained, richer countries are bound in international agreements to reduce their carbon emissions to avoid global warming. They try to reduce their emissions in several ways, directly in their own country or by supporting carbon sequestration in other countries. Richer countries put money in a global carbon fund. Poorer countries can apply for payment from this fund through obtaining carbon credits.

Dr. Silavanh: I need to add some more on the funding mechanism…..(I missed this bit). The other important thing is to set up the MRV system.

ANNEX 4 List of participants for the second consultation workshop

No.	Name and Sure name	Organisations	Contact address
1	Mr. Buaphanh Phanthavong	DFRC	55699461/ Email: conbrc@laotel.com
2	Mrs. Lomkham SengchanŒoudom	DFF	55312253
3	Mr. Vilip Buasisavath	MOFA	414040/ Email: vsombath@yahoo.com
4	Mr. Bounleua Sihalath	DoAS	2822877
5	Mr. Khamvene Keomanivong	DFPB	2406059/ khamvenm@yahoo.com
6	Mr. Bounlam Khonesavanh	MAF Office	55620080
7	Mr ChiengKham Thongpaseut	DoRC	2210804
8	Mr. Thivaphone Soulinthone	DoT	2434562
9	Mr. Anousith Souksavath	DoT	2060619/ tongVAGA@yahoo.com
10	Mr Saysamone Phothisath	DFPA	55336888/ saiphothisat@yahoo.com
11	Mr. Phonesavanh Sophakhamphanh	DoFI	2488916/ sophakhamphan@yahoo.com
12	Mr. Salongsay Lassabouth	DoT	3043393/ salongxay@yahoo.com
13	Mr. Saysanong Noy	DoT	2472113/ saysanong@hotmail.com
14	Mr. Bounthavy Vilayvong	LNFC	2480601
15	Mr. Phoutthasak Phafong	DFF	99611001
16	Mr. Leuanvilay Chanthalaphanh	Bolikhamxay Prov	2332229/ leanevilay@yahoo.com
17	Dr. Vassana Chittaphone	Luang Prabang Prov	55871159/ vath_s@hotmail.com
18	Mr. Bounlath Lattanaphoubay	Luang Prabang Prov	2357760
19	Mr. Bounphanh	Luang Prabang Prov	2355261
20	Mr. Bounpheng PhengChanh	Luang Prabang Prov	55771075
21	Mr. Bounlouane Singnakhone	Luang Prabang Prov	
23	Mr. Oudom Dithphavong	Huaphan Prov	55663551
24	Mr. Anoulak Malaydeth	Xaiyabouly Prov	557894444
25	Mr. Konglae Bouddee	Xaiyabouly Prov	55677580
26	Mr. Khamhou Thongsamouth	NGO	5847290
27	mr. Khamsene Samouthvongsa	OJI LAO	2425360

28	Mr. Khamhou Tounalom	DoI	55601181
29	Ms. Khamla Phouttharath	VFI	2426203
30	Mr. Somphone B.	WWF	55413346
31	Ms. Kirsten Ewers Andersen	SUFORD	55508273
32	Mr. Nori Kitamora	FSIP	55519330
33	Ms. Noriko Ishitobi	FSIP	55015224
34	Ms. Ketsalin Inthahak	MOIC	412008/ inthahack@hotmail.com
35	Mr. Savanh Chanthakoummane	DFRC	55777995
36	Mr. Thongsavanh Phanthalavong	NAFES	
37	Mr. Lamphanh Kommadam	DFRC	55550422
38	Mr. Oudom Sipaseut	DFPA	55410339
39	Mr. Thongsoun Bounphasaison	CliPAD	
40	Mr. Sonecanh Luang-Œaphay	DoE	3902458/lsonchanh@yahoo.com
41	Mr. Oula Somchanmavong	MPI	55605094/oula_somchanmavong@yahoo.com
42	Mr. Saykham Boutthavong	FOF/NUoL	3333293/boutthavong@yahoo.com
43	Mr. Bounteng Sanason	LNMA	55445011/sanaxonh@yahoo.com
44	Mr. Phetsakhone Phetsikhieu	DoI	55699372
45	Mr. Phousith Phoumavong	NAFES	55622666/ psitvong@yahoo.com
46	Ms. Vachi Laddavong	DoM	55811311
47	Mr. Engphone Sengsouvanh	WREA	2220466
48	Mr. Somdy Manivong	GLDA	56624499
49	Ms. Viengsamone Kingmalay	MPI	2229982/VS_mone@hotmail.com
50	Mr. SomPhou Choummalavong	Bolikhamxay Prov	3411115
51	Mr. Vansay Saysananim	Attapeu Prov	55636714
52	Mr. Phounsouk Phichith	Attapeu Prov	55603316
53	Mr. Vonevilay Sombathphounvong	Bolikhamxay Prov	2332229
54	Mr. Chanpheng Kounsouvanh	Bolikhamxay Prov	3410000
55	Mr. Phethseng Senkhamphath	Huaphan Prov	6291111

56	Mr. Bounkham Hounglakhone	Huaphan Prov	2346324
57	Mr. Bounphone Bouthphachanh	Huaphan Prov	55664143
58	Mr. KhamŒon Thipphavong	Huaphan Prov	55881268
59	Mr. Khanekeo Sonesaksith	Bolikhamxay Prov	2339447
60	Mr. Kongsy Vongsy	Xaiyabouly Prov	56623456
61	Mr. Song Thor	Xaiyabouly Prov	55878024
62	Mr. Phousaveng Chaleunnith	Attapeu Prov	2531065
63	Mr. Kenkhi Takako	PAREDD	54206360
64	Ms. Lamphay Inthakoun	FAO	2208282
65	Mr. Horst Weyerhaeuser	Ad. NAFRI	
66	Mr./Mrs./Ms. Manuel	Ad. NAFRI	330456
67	Mr. Joost Finn	Suford	55508760
68	Mrs. Lisbet Bostrand	Sida	55526394
69	Mr. Namura Takayuki	PAREDD	55454841
70	Mr. George Buchholz	CTA, CliPAD/GTZ	55582625
72	Mr. Keophouvong Keopaseut	DoFI	2219844/KAKAlions@yahoo.com
73	Mr. Sivang Sayyavong	DoE	3902458/ X_syvong@yahoo.com
74	Mr. Somphachanh Vongphasouvanh	NAFRI	56257799/ vsomphachan@yahoo.com
75	Mr. Siola Simmalavong	MAF Office	55847641/ solasimmalavong@yahoo.com
76	Mr. Southchay Youivanisong	DoP/MAF	55909395
77	Mr. Monekeo Chittalath	NPI	99945555
78	Mr. Vilaysone Souliya	DoED	267153/ avilaysone@powering.org
79	Mr. Khamphone Mounlamay	NAFRI	55800755/ kphonemou@yahoo.com
80	Mr. Sengrath Phirasak	DoF	
81	Mr. Boukong Phothisan	NAFRI	99980666/ bounkong@laosoft.com
82	Mr. Somchay Sanonty	DFIP	2338014/ somchaysanontry@yahoo.com
83	Mr. Khamla Senesouk	LNWPU	77709156
84	Mrs. Vilayvanh Dilaphan	LNFU	214306/dilaphan@yahoo.com

85	Mr. Vansay Bouthnavong	WREA	99778883/ btv_vanxay9@hotmail.com
86	Mr. Bounsanong Fongmaly	WREA	554786789/ fongnaly79@yahoo.com
87	Mr. Khampasong Vongthana	Bolikhamxay Prov	
88	Mr. Vongsay Manivong	Attapeu Prov	2401620/vongxaymanivong@hotmail.com
89	Mr. Saksavanh Vilaphanh	Attapeu Prov	
90	Mr. Bounlay Khamphoumy	Attapeu Prov	
91	Mr. Soukpaseut	Xaiyabouly Prov	
92	Mr. Khamhoung	Bolikhamxay Prov	
93	Dr. Michael Trockenbrodt	CIM/GTZ/FoF/NUoL	56859534/michael.trokenbrodl@cimonline.a.com
94	Mr. Rob Ukkerman	SNU	84936600588/ rukkermamesmuworld.org
95	Mr. Carl Mossberg	CTA, URCDP, NAFRI	55551235/ carl.g.mossbey@gmail.com
96	Mr. Roger	IUCN	216401/ roger.karlsson@iupn.org
97	Dr. Unna Chokkalingam	For. Carbon Asia	unna.c@forestcarbonvia.org
98	Mr. MarKS	SNV	
99	Dr. Alastair Fraser	RPP Consultant	
100	Mr. /Ms. Bres	AFD	77570315
101	Mr. Mike	WCS	5516912/ whedermark@wcs.org
102	Mr./Mrs./Ms. Schno	WB	scrindo.schneider@orznge.com
103	Ms. Khamla Phonesavath	WB	2221316/ kphonsavat@worldbank.org
104	Mr. Ounkeo Pathammavong	LDN	55300053/ othammavong@yahoo.com
105	Mr. Somdy Manivong	GCDA	56624499/ somdy@lpt-travel.com
106	Dr. Ty Phommasak	Dept. Minister/MAF	
107	Dr. Silavan Savathvong	Gen Director/DoF/MAF	
108	Mr. Khamphay Manivong	Dept Director/DoF/MAF	
109	Mr. Khamsene Ounkham	DoF/MAF	