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Survey and Analysis of REDD+ Project Activities in Cambodia



Lowering Emissions in Asia's Forests (LEAF)

Survey and Analysis of REDD+ Project Activities in Cambodia

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Acronyms

ADB	Asian Development Bank
AFOLU	Agriculture Forestry and Other Land Use
ANR	Assisted Natural Regeneration
ARR	Afforestation, Reforestation and Revegetation
BDS	Benefit Distribution System
CCB	Climate Community Biodiversity
CCBA	Climate Community Biodiversity Alliance
CDA	Children's Development Association
CF	Community Forestry
CI	Conservation International
CLEC	Community Legal Education Centre
CRDT	Cambodian Rural Development Team
CV	Coefficients of Variation
FA	Forestry Administration
FFI	Fauna & Flora International
FPIC	Free Prior Informed Consent
GPS	Geographic Positioning System
IPCC	Intergovernmental Panel on Climate Change
JICA	Japan International Cooperation Agency
LEAF	Lowering Emissions in Asia's Forests
LULC	Land Use Land Cover
MCF	Monks Community Forestry
MRV	Monitoring, reporting and verification
NDFI	Normalized Difference Fraction Index
NDVI	Normalized Difference Vegetation Index
NER	Net anthropogenic emissions reductions
NFP	National Forestry Programme
NGO	Non-governmental organization
NTFP	Non-timber forest product
NTFP EP	Non-timber Forest Product Exchange Programme
ONFI	Office National de Forêts International
PD	Project Document
REDD	Reduced Emissions from Deforestation and Degradation
RGC	Royal Government of Cambodia

SOP	Standard Operating Procedures
TWG FE	Technical Working Group Forestry and Environment
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VCS	Verified Carbon Standard
WCS	Wildlife Conservation Society

Executive Summary

The primary objective of this review was to assess the institutional arrangements and methodological approaches used in REDD+ project activities in Cambodia and to evaluate commonalities and divergences in order to provide decision makers and stakeholders with information on how current REDD+ activities can be integrated into a national framework. Three projects were available for analysis: the Oddar Meanchey Community Forestry REDD+ Project, the Seima Protection Forest REDD+ Project, and the Prey Lang REDD+ Project. The Oddar Meanchey project and the Seima project are fairly advanced in development, while the Prey Lang project is at an earlier stage. All three projects are implemented in collaboration with the Forestry Administration with the Royal Government of Cambodia serving as project proponent. The projects cover different tenure arrangements: in Oddar Meanchey 13 communities hold forest management rights under the community forestry sub-decree, while both Seima and Prey Lang are under more direct management of the Forestry Administration.

Both the Oddar Meanchey and Seima projects have applied social safeguards towards meeting CCB requirements, demonstrated by FPIC processes with local communities and policies to guide adherence to equal employment opportunity, worker safety, and grievance procedures. These projects would be in compliance with current UNFCCC Cancun Safeguards, and could provide valuable field experience for national level implementation. Benefit sharing has been a challenging issue for all project developers and will require further dialogue to reach a coherent national approach, though Oddar Meanchey is seen as setting a precedent of substantial shared benefits with local communities through the project-specific Government Decision No. 699 which mandates maximizing benefits to local communities.

Cambodia is still in the early stages of developing a jurisdictional REDD+ program, and current discussions center on initiating with sub-national implementation, with area(s) still to be selected. In the interim, projects have opened dialogues and coordinated with the RGC/REDD+ Task Force, and with each other, in their development, so that any potential future disparities in accounting and MRV between projects and a jurisdictional program can be minimized.

We review considerations for integrating pre-existing projects into a jurisdictional, whether national or sub-national, REDD+ framework, and relevant opportunities and challenges presented by current and imminent projects in Cambodia. The objectives for any integration (e.g. to what degree should direct crediting to projects be preserved), and the means to achieve them, have not to our knowledge been formally discussed, and will involve the input of many stakeholders, and will not be decided wholly on the basis of technical considerations. We do not assert that the recommendations laid out below are the only possible approaches for integrating projects into a jurisdictional REDD+ framework, nor necessarily the best in the Cambodian context, but present them as a means of initiating these discussions and focusing attention on accounting considerations that will need to be addressed in any eventual integration process.

A number of issues are presented in considering how projects could align with a future framework. Current projects are limited in terms of the scope of REDD+ activities (per COP16) and pools that they encompass, which should be considered where a jurisdiction seeks to achieve full REDD+ accounting. Current projects also pose differences in how project baselines were developed that should also be considered in any eventual integration of project and jurisdictional REDD+ accounting frameworks. For example, the Seima project applies a logistic function to project increasing rates of deforestation in its baseline over time, while the

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Oddar Meanchey and Prey Lang projects employ simple historic average deforestation rates; note that neither approach is inherently more “correct” than the other. An approach for setting a jurisdictional, whether national or sub-national, reference level in Cambodia has yet to be defined, beyond generic guidance that reference levels should consider historic emissions and national circumstances (per COP15), which encompasses all of the above project approaches.

There are many commonalities in monitoring, reporting and verification (MRV) approaches among the projects, which could facilitate, or at the least impose fewer complications in, any eventual integration of MRV between projects and a jurisdiction. Some of these include the application of Tier 3 activity-based stock change accounting, field based sampling of forest carbon stocks (employing the same minimum diameters, forest strata, allometric equations and carbon fraction of biomass) and monitoring land use change via analysis of classified Landsat imagery.

It remains to be determined when (and how) projects would update to a jurisdictional REDD+ accounting framework, however, a natural point would be at VCS baseline revision, currently slated for 2018 (Oddar Meanchey), 2020 (Seima) and estimated 2023 (Prey Lang). In the interim, projects have opened dialogues and coordinated with the RGC/REDD Task Force in their development, which should serve to get out in front of eventual challenges in integrating projects and a jurisdiction.

We present the following recommendations and key observations related to both institutional and technical issues for the national REDD+ development program:

- Learn from project experience in finding effective ways to communicate the basic concepts of climate change and REDD to a local audience, without relying on written materials, and without creating undue expectations.
- The national consultation process should consider ways to encourage open discussion free from bias and intimidation, for example by utilizing neutral facilitators.
- Apply existing tools¹ for mainstreaming gender into the national REDD+ process.
- Clarify the relationship between tenure and ownership of carbon along with the right to receive carbon revenues. Examine strategies that use revenues to incentivize addressing drivers of deforestation at multiple administrative levels.
- Be prepared to invest significant time and effort to establish norms and systems that ensure transparency and accountability in the management of REDD revenues down to the local level.
- Respect existing project level commitments to ownership of credits by incorporation in national carbon accounting.
- Encourage the REDD Task Force to act carefully yet expeditiously to reinvigorate the sector with robust systems for safeguards and benefit sharing.
- Encourage further dialogue and coordination between projects and the REDD Task Force related to project level and national/subnational accounting issues.
- Consider means of integrating projects within a jurisdictional framework, such that project scale accounting (baselines and MRV) can be preserved for a period of time, and

¹ Women’s Environment and Development Organization (WEDO) has produced a useful booklets: “From research to action, leaf by leaf: getting gender right in the REDD+ Social and Environmental Standards”

importantly, contribute to a “bottom up” development of jurisdictional baselines and MRV. Observed disparities in current project accounting boundaries (scope of activities and pools) are insubstantial and could be integrated into more comprehensive jurisdictional REDD+ accounting without compromising environmental integrity.

- Consider reducing complexities in national REDD+ accounting by focusing on only three of the five REDD+ activities (per COP16): reducing emissions from deforestation, reducing emissions from degradation and enhancement of forest carbon stocks. Conservation of forest carbon stocks and sustainable management of forests need not have their own accounting to achieve full accounting of REDD+ emissions.
- Consider utilizing project level MRV data in compiling jurisdictional MRV data. There are enough commonalities in MRV among projects and a likely eventual jurisdictional REDD+ accounting framework to merit this approach, including: Tier 3 activity-based stock change accounting, field based sampling of forest carbon stocks (note that all projects employ the same minimum diameters, forest strata, allometric equations and carbon fraction of biomass) and monitoring land use change via analysis of classified satellite imagery (all project currently using Landsat). Further guidance to projects on items such as minimum mapping units for remote sensing analysis and minimum field quality standards, as well as syncing the timing of project level and jurisdictional MRV, will further facilitate such integration.
- Evaluate options for accounting and allocating leakage to projects. In pursuing integration, projects could account for leakage through a jurisdictional allocation (from surrounding jurisdictional area) that would replace current project level accounting (from leakage belts and estimations of leakage from geographically-unconstrained agents).
- Determine the appropriate timing for pre-existing projects to convert from project level to jurisdictional level accounting. Consider options that allow projects to convert at the time of their respective VCS baseline revisions (i.e. 10 years from project start date).
- In the interim, pre-existing projects could operate as independent accounting entities (with their own baselines and MRV), surrounded by a jurisdictional matrix with its own reference level and MRV. At reporting, projects will include a deduction for leakage in their accounting of net GHG emission reductions, derived from a (proportional?) allocation of any increases in forest carbon emissions observed within the jurisdictional matrix. Jurisdictional reference level and MRV could then be summed from the project areas and the jurisdictional matrix, because there are no overlapping accounting boundaries.
- During the interim period, some differences in accounting boundaries and baselines/reference levels between projects and a jurisdiction within which they are nested could be tolerated without undermining the integrity of the system (though at the expense of accuracy²), provided that they do not result in combined issuances to projects, in terms of net GHG emission reductions achieved, that exceed those of the jurisdiction (“over-issuance”).

² Note though that it may not be desirable to conduct MRV in such a conservative way that potential for jurisdictional crediting is significantly impaired

1 Introduction and Framework for Analysis

This review of REDD+ projects in Cambodia was designed by Climate Focus under the LEAF program implemented by Winrock and funded by USAID. The primary objective of the review is to assess the institutional arrangements and methodological approaches used in REDD+ project activities in Cambodia and to evaluate commonalities and divergences in order to provide decision makers and stakeholders with information on how current REDD+ activities can be integrated into a national framework.

The review was conducted referencing relevant literature and project documentation, telephone interviews, and e-mail exchanges with project developers and key stakeholders. The research framework (See Annex 1) was divided into three sections: an institutional section which includes a project overview and review of safeguards and benefit sharing distribution systems; a methodological section covering baselines, monitoring, reporting and verification (MRV), and non-permanence risk, leakage and uncertainty; and an analytical section reviewing commonalities and divergences among projects and presenting a set of recommendations for addressing potential gaps.

REDD+ project development activities in Cambodia began in early 2008 and while carbon credits have yet to be sold, these initiatives have brought a level of concreteness to REDD+ that informs and influences the development of the national framework. With its national REDD 'roadmap' in place and financial and technical support committed by UN REDD and the Forest Carbon Partnership Facility (FCPF), Cambodia's national REDD+ Taskforce is facing the task of developing the country-specific framework for national implementation. The authors hope that this review will provide some useful information and analysis to stimulate discussions on possible integration of these projects within the national framework.

2 Overview of REDD+ Projects and Initiatives

There are currently five REDD+ projects in Cambodia that may be considered active and relatively advanced in their development, namely:

1. the Oddar Meanchey Community Forestry REDD+ project;
2. the Seima Protection Forest REDD+ project;
3. the Prey Lang REDD+ project;
4. the Kulen Promtep REDD+ project, and
5. the Southern Cardamom REDD+ project.

Only the first three of these five projects were analyzed for this review due to issues of confidentiality and data accessibility for the last two mentioned. This section provides an overview on the first three, highlighting some of the relevant criteria for comparison. Other REDD+ initiatives in the country are briefly described in Annex 2.

2.1 Oddar Meanchey Community Forestry REDD+ project

The Oddar Meanchey Community Forestry REDD+ project was introduced by Community Forestry International and jointly launched with the Forestry Administration (FA) in February 2008 as the first REDD+ project in Cambodia. The project is located in northwestern

Cambodia and encompasses 13 community forestry sites covering a project area of 56,050 hectares. The deciduous and evergreen forests in the project area are threatened by illegal logging, conversion for settlement and cropland (by both smallholders and concessionaires), and fire. The project aims to sell carbon credits on the voluntary market and has already been validated by the Verified Carbon Standard (VCS) and the Climate Community Biodiversity Alliance (CCBA) with completion of the first verification expected by September 2013, at which time credits will be issued. The Council of Ministers has endorsed the project and designated the Forestry Administration as the seller of resulting carbon credits. Pact has served as the implementing partner for the project since 2009, along with a number of local organizations including the Children's Development Association (CDA) and Monks Community Forestry (MCF) that have collaborated to implement activities on the ground. Terra Global Capital, a US-based firm, has provided technical support throughout the project development process, and in return, owns an equity share in future credits. A number of donors have contributed funds to project development including Danida, the Clinton Climate Initiative, and UNDP.

The project aims to reduce deforestation and degradation in the project area and its leakage belt through a range of activities including forest protection, fire prevention, reinforcing land tenure, distribution of fuel efficient stoves, and agricultural intensification, among others. Over its 30-year crediting period, the project is expected to generate approximately 8,187,767 tons CO_{2e} of emission reductions.

2.2 Seima Protection Forest REDD+ Project

The Seima Protection Forest REDD+ project (hereinafter "Seima") was initiated in July 2008 by the Wildlife Conservation Society (WCS), working in collaboration with the Forestry Administration of the Royal Government of Cambodia (RGC), the project proponent. The local NGOs Cambodia Rural Development Team (CRDT) and Community Legal Education Centre (CLEC) are also involved as implementing partners. This REDD+ initiative aims to support protection of old growth forest within a core area of 180,515 hectares within the Seima Protection Forest in the eastern province of Mondulkiri. The area is renowned for an abundance of globally important species such as the endangered douc langur (a primate) and the banteng (wild cattle), and the REDD+ initiative builds on WCS's many years of conservation work in the area. The project area is also home to a population of approximately 10,000 Bunong indigenous people living in 20 villages across the landscape. They rely heavily on forest resources and practice traditional swidden agriculture. WCS is assisting these communities to secure communal land tenure and has received their consent for the project implementation.

With a start date³ of January 1st, 2010, the Seima project aims to secure validation and verification under the VCS and CCB standards, with validation scheduled to commence in October 2013. While the crediting period continues for 50 years, it is estimated that the project will generate approximately 58 million tons CO_{2e} of emission reductions over its first ten years.

2.3 Prey Lang REDD+ Project

The Prey Lang REDD+ project is potentially the largest REDD+ project in Cambodia, covering approximately 400,000 hectares and spanning four provinces in the center of the country: Kompong Thom, Kratie, Stung Treng, and Preah Vihear. The project is supported by

³ The start date is defined as when the REDD+ activities start.

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Conservation International (CI), with the CI Japan office leading the technical work. The Blue Moon Fund provided funding for a detailed feasibility study that has already been completed; however, the project is still in a relatively early stage of development. The Project Document is still in progress, and interactions with local stakeholders have been limited.

As is the case for most of Cambodia's forests, the Prey Lang forest is threatened by both large-scale agricultural concessions as well as smaller scale logging. While the area has not received large scale and long-term investments in conservation from international NGOs, local indigenous communities in the area who depend on the forest for their livelihoods, have been engaging in advocacy efforts to protect the Prey Lang forest. CI is collaborating with the FA to develop a strategy to reduce deforestation in the area through awareness raising, strengthening of law enforcement, incentive schemes, and pursuit of official protection status. The RGC is considering a draft sub decree (2012) that would officially designate Prey Lang as a Protected Forest.

Table 1: Overview of Projects Studied

	Oddar Meanchey	Seima	Prey Lang
Type of REDD+ project	Avoided deforestation and forest enhancement	Avoided deforestation	Avoided deforestation
Standard	VCS, CCB	VCS, CCB	VCS
Start and end date of first crediting period	28 Feb 2008 ~ 28 Feb 2037 (30 yrs)	1 Jan 2010 ~ 31 Dec 2069 (50 yrs)	TBD
Location	Oddar Meanchey Province	Mondulhiri Province	Parts of Kratie, Kampong Thom, Preah Vihear and Stung Treng Provinces
Project area	56,050 ha	180,515 ha	400,000 ha (approx.)
Expected GHG emissions reductions over first 10 years	1.7m tCO ₂ e	58m tCO ₂ e	4.5m tCO ₂ e
Project Proponent	RGC/FA	RGC/FA	RGC/FA
Implementing Partner(s)	Pact, Terra Global Capital, Children's Development Association, Monks Community Forestry, 13 CF Groups	WCS, Cambodia Rural Development Team, Community Legal Education Centre	Conservation International, provincial governments, local NGOs, communities
Donors	Danida, DFID, NZAID, US Department of State, Clinton Climate Initiative, Pact, TGC, JICA, UNDP	ADB, Eleanor Briggs, Japanese Embassy, JICA, The MacArthur Foundation, UN-REDD, USAID, WCS, Winrock International	Blue Moon Fund. Further information not available.

	Oddar Meanchey	Seima	Prey Lang
Project activities	<p>5 activities inside the project area: 1) reinforcing land tenure status, 2) land-use plans, 3) forest protection, 4) assisted natural regeneration, 5) fire prevention</p> <p>5 activities for mitigating leakage: 1) fuel-efficient stoves, 2) livestock protection from insects, 3) agricultural intensification, 4) water resource development projects, 5) NTFP development activities</p>	Active protection in and around the project area	In development - activities under consideration include awareness raising, enhancement of law enforcement, benefit sharing as well as designating the area as a protected forest

3 Social and Environmental Safeguards

Social and environmental safeguards have recently received more attention within the UNFCCC negotiations for a REDD+ compliance mechanism. Parties to the Convention have agreed to the Cancun Safeguards (See Box) which lay the groundwork for further development of national safeguards incorporating participatory approaches and recognizing existing laws and policies. At the project level, the CCBA provides the most comprehensive and widely-used guidelines with regards to safeguards⁴, and most of the active REDD+ projects in

Cancun Safeguards
<ul style="list-style-type: none"> • [REDD+ activities] complement / consistent with the objectives of national forest programmes and relevant international conventions and agreements • Full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities, in [REDD+] activities and...national strategies • REDD+ activities 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... • Address the risks of reversals • Reduce displacement of emissions

Cambodia are pursuing validation under CCB. The CCB program document stipulates, for example, the need for meaningful consultations with adequate information and participation from a broad range of stakeholders, including women and other marginalized groups, as well as the need to identify high conservation values for biodiversity and put in place a monitoring plan for their conservation. This section briefly outlines the approach taken by the REDD+ projects in Cambodia to meet the most important social safeguards within the CCB standards.

⁴ The CCBA does not commonly refer to the social and environmental requirements of the standard as “safeguards”; however, due to their intention in safeguarding the interests of local stakeholders and protecting biodiversity, they may be seen as such, at least in the context of this analysis.

3.1 Oddar Meanchey Community Forestry REDD+ Project

The Oddar Meanchey project has adhered to, and been successfully validated against, the safeguard principles in the CCB standards and is also in compliance with the Cancun Safeguards. Even though some key safeguard principles were not yet fully defined in the context of REDD+ at the start of the project in early 2008, the project team was able to adhere to the principles and fulfill the relevant obligations. The project aligns with the RGC's National Forest Programme 2010 – 2029 (NFP) which specifically highlights REDD+ as a main component of the government's strategy on innovative financing and also calls for a significant increase in community-based forest management.

Project developers endeavored to ensure full and effective participation of relevant stakeholders through a Free Prior Informed Consent (FPIC) process even though at the time of implementation, guidance on facilitating this process for a REDD project was limited. The project team organized more than 60 workshops and training sessions throughout the province to educate and inform communities and local officials about climate change, REDD+, and the project. These sessions were followed by formal consultations on key elements of the Project Document with an equal balance of male and female community representatives, and culminating in a show of hands to confirm consent. Furthermore, a 30-day public comment period was organized and a plan for quarterly meetings of the CF Network and provincial level annual project review meetings was put in place.

The Oddar Meanchey project aims to protect natural forest which local people value for economic, social, and cultural reasons. Biodiversity protection is part of the community forestry mandate. In addition, the project team developed and consulted with local communities on a set of policies and procedures to address other safeguard issues raised in the CCB standards. The policies outline the procedures for handling grievances and complaints, for ensuring equal employment opportunities and worker safety, and for equitable benefit distribution. These project policies were reviewed by validators but have not yet received official approval from the Forestry Administration.

The Oddar Meanchey project is in adherence to existing Cambodian laws. While national REDD regulation is still under consideration, the Oddar Meanchey project was fortunate to receive official endorsement from the Council of Ministers and to be able to hire a local Cambodian-American lawyer to review the project's legal status in light of Cambodian law and specific project agreements. No outstanding issues were identified.

The Cancun Safeguards also cite the risk of reversals and the need to reduce the displacement of emissions. By implementing the VCS AFOLU non-permanence risk tool and setting aside a percentage of credits to a risk buffer pool, and by delineating and monitoring activities in a leakage belt, the Oddar Meanchey project fully satisfies these safeguards. These aspects are more fully reviewed in Section 9 below.

3.2 Seima Protection Forest REDD Project

The Seima project has undertaken similarly robust procedures to ensure social and environmental safeguards. Project developers have engaged with local stakeholders to implement FPIC. Following consultation meetings with provincial and district level authorities, the project partners collaborated in a phased process to engage 20 local Bunong communities, incorporating awareness raising, discussion on consent, presentation of the community agreement, access to independent legal advice, and finalization and signing of the agreement. A process of ongoing engagement is planned including periodic consultations and

assessments and annual reviews.

Furthermore, the Seima project has established a process for dealing with complaints and grievances. These are first submitted to the project implementation team for immediate response. If not satisfactorily resolved, the party with the grievance or complaint may take this to a third-party, designated as the Commune Council. A capacity building effort for commune councilors to help them perform this role effectively is underway. Selection of the Commune Council as a mediator has the advantage of using an existing system that is more likely to be acceptable to all stakeholders, sustainable, and cost-effective.

With regards to employment opportunities, WCS has an equal opportunities organizational policy and aims to increase the proportion of locally-recruited staff, female staff, and staff from indigenous ethnic minorities. Efforts have been made to develop local human resources by employing local people in entry level positions and as interns and volunteers and by providing additional training and further education to those who show strong commitment to the work.

Project staff and counterparts are enrolled in health and accident insurance plans and all expenses are covered. Additional provisions are covered by the WCS Health and Safety policies and standard operating procedures that aim to minimize work-related risks and view health and safety as both an individual and shared responsibility of staff and the employer. In addition, first aid kits and first aid training are provided.

3.3 Prey Lang REDD+ Project

Very little information was available regarding social and environmental safeguards for the Prey Lang project because of its early stage of development. According to the project developer, it is likely that CI will apply the CCB standard at a later stage.

Table 2: Social & Environmental Safeguards

	Oddar Meanchey	Seima
Safeguard standard	CCB	CCB
Adherence to Cancun safeguards	In compliance	In compliance
FPIC process	Yes. Awareness raising and training workshops, followed by formal consultation workshop resulting in verbal agreement by community network representatives.	Yes. Provincial and district consultation meetings followed by phased approach with communities, resulting in signed agreements/consent.
Grievance redress mechanism	A policy is in place whereby grievances are first addressed to the Project Team, followed by the Technical Working Group, and then a third party Committee or mediator if required.	Grievances first addressed to project implementation team. Commune Councils serve as the third-party mediator.
Employee opportunities	Commitment to equal opportunity in project policies	WCS commitment to equal employment opportunity in org policy. Additional efforts to employ female, local, and indigenous staff.

	Oddar Meanchey	Seima
Worker safety	Safety protocol and procedures included in project policies	Health and accident insurance provided to all staff and counterparts. Health and safety policies and SOP provide further guidance.
Adherence to national laws & policies	REDD regulation not yet developed, but currently in compliance with existing laws and policies.	REDD regulation not yet developed, but currently in compliance with existing laws and policies.

4 Benefit Distribution Systems

Discussion in this review on benefit-sharing distribution systems is limited since none of the projects have determined the precise nature of how revenues will be distributed. The Oddar Meanchey project has made the most progress in this area, though some key issues remain unclear, and it is uncertain to what extent the Oddar Meanchey project will set a precedent for other REDD projects.

4.1 The Oddar Meanchey Community Forestry REDD+ Project

In May 2008, the Council of Ministers issued Government Decision No. 699 (“Sor Chhor Nor”) which provides the legal and policy foundation for developing the specifics of the Oddar Meanchey project’s benefit distribution system. The GD699 laid out the following key provisions:

- Designates the Forestry Administration (FA) as the Seller of the forest carbon in Cambodia.
- Channels revenue from the sale of carbon credits from the project through the Technical Working Group on Forestry & Environment (TWG-F&E)⁵ for the first five years.
- Designates the RGC as responsible for helping to fulfill the terms and conditions in the contract(s) with the buyer(s).
- Identifies specific uses of project revenues, namely:
 - Improve the quality of the forest
 - Maximize the benefits to local communities who are participating in the project (defined elsewhere as >50% of net income)
 - Study potential sites for additional forest carbon credit REDD+ projects.

On the Oddar Meanchey project, the implementing partner Pact has endeavored to further define the benefit distribution system within the project policies which are currently still in draft form awaiting final review and approval from the Forestry Administration. Under the proposed

⁵ The Technical Working Group on Forestry Reform (formerly the Technical Working Group on Forestry and Environment) is a government-mandated sector coordination body co-chaired by the Director General of the Forestry Administration and a lead development partner. Membership includes relevant government departments, private sector, development partners and invited representatives of civil society.

scheme, the bulk of funds will support project activities under an existing approved 30-year workplan. Remaining revenues are classified as net income to be divided according to GD699 principles listed above. The draft project policies suggest that the benefit distribution system should incentivize effective forest protection and that performance could be one criterion in the distribution of net income in the form of small grants; however the RGC has yet to make a final decision on these proposals. Whereas in earlier stages of project development, it was assumed that Pact would play a significant role in managing project revenues, it later became clear that the government prefers to maintain tighter control over the distribution of funds. Nevertheless, there has been little progress in further defining the benefit distribution system, though the commitment to provide a substantial share of benefits to local communities has been emphasized by all parties.

4.2 The Seima Protection Forest REDD+ Project

For the Seima project, WCS recognizes the range of social benefits produced including protection of the resource base and access for extractive activities by local people, improved security and productivity of forest resources and farmland, and increased social capital and improved governance. With regards to a formal benefit sharing mechanism, WCS is currently in discussion with the RGC to come to an agreement on a suitable mechanism. The design process will also be informed by community consultations and academic research. Key issues currently being considered are: key actors and stakeholder engagement, benefit types and sizes, benefit distribution rules, transparency and accountability, and conflict resolution.

4.3 The Prey Lang REDD+ Project

No information was available on the benefit distribution scheme for the Prey Lang REDD+ project due to the early stage of the project.

Table 3: Benefit Distribution System (BDS) for Oddar Meanchey

	Oddar Meanchey
Benefit sharing mechanism	<ul style="list-style-type: none"> • Govt. Decision No. 699 • Technical Working Group as the main channel • Commitment to maximize benefits to local communities (>50% of net)
Relation between performance & incentives	Project policies highlight this link, but government has not finalized BDS
Access to vulnerable and marginalized	PRA studies lay foundation to track access to benefits of vulnerable and marginalized. CCB verified for “gold level” for exceptional community benefits.
Gender consideration in benefit distribution	Gender assessment conducted to identify barriers to access of women to both financial and non-financial benefits.

5 Overview of Methodological Approaches

This section provides an overview on the methodological approaches and scope of accounting (“project boundary”) used for the three REDD+ projects reviewed.

All of the accounting approaches used by the methodologies are activity-based in nature (i.e. deforestation, degradation, enhancement are distinguished and tracked separately), rather

than “land-based” or “net landscape accounting” in aggregate, where changes in forest carbon stocks are simply tracked, via LiDAR e.g., without disaggregating specific component activities or categories of change. The former approach, while less elegant than the latter, is most closely aligned with the current IPCC accounting framework (IPCC 2006GL) constructed around activity data (AD) and emission factors (EF), and with the COP16 framework of REDD+ activity categories (Reducing emissions from deforestation, Reducing emissions from forest degradation, Enhancement of forest carbon stocks, Conservation of forest carbon stocks and Sustainable management of forests).

Further, all of the methodologies used employ stock change-based accounting. All use remote sensing data to derive activity data, for both baselines and MRV, and biomass stock estimates from direct measurements to derive emission factors (with emission factors calculated as the difference in stocks between pre- and post-activity conditions). The application of all VCS project methodologies, in their current form, constitutes IPCC Tier 3-type accounting.

REDD+ activities included in the project are limited to avoided deforestation (Oddar Meanchey, Seima and Prey Lang) and enhancement (Oddar Meanchey). Degradation is not currently included in any of the projects, though it may be incorporated in the Oddar Meanchey project at a later stage after the baseline is reset in 10 years.

Table 4: Overview of Methodological Approaches and Scope of Accounting

	Oddar Meanchey	Seima	Prey Lang
Title of methodology implemented to estimate GHG emissions	Carbon Accounting Methodology for Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation VM0006 (VCS)	Methodology for Avoided Unplanned Deforestation VM0015 (VCS)	Likely to be Methodology for Avoided Unplanned Deforestation VM0015 (VCS)
Summary of baseline and project scenarios	<p>Baseline scenario: continuation of mosaic deforestation in the project area due to conversion of forest to small-scale subsistence farming, conversion to settlements, logging for commercial sale and local and domestic use, fuel –wood/charcoal collection and forest fires.</p> <p>Project scenario: activities include reinforcing land tenure status, land-use planning, forest protection, assisted natural regeneration, and fire prevention.</p> <p>Project activities are expected to reduce deforestation to 30% of the baseline deforestation rate.</p>	<p>Baseline scenario: continuation of frontier deforestation by smallholders</p> <p>Project scenario: active protection in and around the project area</p>	<p>Baseline scenario: continuing deforestation due to small-scale unplanned logging by local communities and due to large-scale logging by companies obtaining concessions for developing agricultural land (both presumably involving land clearance).</p> <p>Project scenario: activities under consideration include awareness raising, enhancement of law enforcement, benefit sharing as well as designating the area as a protected forest</p>

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	Oddar Meanchey	Seima	Prey Lang
REDD+ activities included	Avoiding deforestation and enhancement of forest carbon stocks. Indirectly degradation through GHG benefits from fuel efficient stoves	Avoiding deforestation	Avoiding deforestation
Project area	56,050 ha	180,515 ha	~400,000 ha
Pools included in the baseline and MRV	Above- and below ground live tree biomass Standing and lying dead wood (dead wood includes logged tree stumps) Wood products	Above- and below ground live tree biomass Standing and lying dead wood. Wood products not included because rates of logging in the project expected to be negligible	Above- and below ground live tree biomass Standing and lying dead wood. Considering soil.
Emission sources (other than CO2 emissions from biomass) included in the baseline and MRV	CO2 and CH4 from loss of biomass in fire prevention activities (removal of vegetation in establishment of fire breaks) and N2O from fertilizer application in agricultural intensification/leakage mitigation activities	CH4 from fires	Not known

6 Baselines

Following current usage of terminology, we apply the term “baseline” when in the context of projects, and reserve the use of “reference level” for jurisdictional accounting frameworks. Note that details on biomass measurement and estimation and remote sensing applied in baseline development, are covered in Section 8 (MRV) below (and are consistent in use in baseline and MRV).

All projects except Seima employ simple historic averages to project baseline rates of deforestation. Seima instead employs a time function on a logistic curve that projects increasing rates of deforestation over time. All are empirically-based, referencing analysis of time series of remote sensing data.

Per VCS requirements, REDD baselines are valid for 10 years, after which they must be revised to incorporate new information on changing drivers. Thus, the baseline initially developed and validated for these projects will be revised in 10 years from their start dates, which would mark a natural transition point for the projects to be brought into a jurisdictional framework.

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The reference regions, which serve as proxy areas for deriving project baselines, are restricted to Cambodia for all of the projects. Additionally, in adherence to methodology requirements of both VM0006 and VM0015, the selection of the project reference region has been justified for all of the projects based on analysis of a suite of similarity criteria (including assessment of drivers, policy environment, topography and accessibility, etc.).

The VCS, under which all of the projects are developed, distinguishes between planned (authorized) and unplanned (unauthorized) deforestation, each with different approaches to substantiate the baseline scenario. All of the projects currently are focused on avoiding unplanned deforestation, which in practice means that authorized deforestation activities are not considered in setting the baseline nor in MRV, i.e. the Seima project excluded planned deforestation on large-scale economic land concessions (ELCs) from its baseline. Note however that the Prey Lang project, still at the early stages of development, also seeks to incorporate large-scale land clearance at the industrial level on authorized concession, which qualifies as planned deforestation, in which case another methodology (other than VM0015) would need to be used.

Table 5: Baselines

	Oddar Meanchey	Seima	Prey Lang
Baseline method/ general approach	Simple historic average	Incorporates a time function, modeling deforestation against time with a logistic curve	Simple historic average, also exploring use of covariates (i.e. variables correlated with deforestation/ degradation that can be used to aid in predictions)
Empirical basis for baseline	Historical remote sensing imagery Historical reference period = 1994-2008. Imagery = Landsat Jan 1994, Mar 2000, Nov 2000, Nov 2002, Jan 2003, Nov 2004, Feb 2005, Dec 2006, Dec 2008.	Historical remote sensing imagery Historical reference period = 1998-2010. Imagery = Landsat 1998, 2000, 2002, 2004, 2006, 2008, 2010	Historical remote sensing imagery Historical reference period = 2001-2011. Imagery = Landsat c.2001, c.2005, c.2008, c.2011
Sample of mapping resources used	Forest cover from the Mekong Secretariat (1976) JICA Land Use Survey 2002 Forest Cover Survey 2006 Road maps (2005) Village maps (2005) Administrative	GIS data on ELCs from Government of Cambodia and from the companies Protected areas	ELC data (2013) from Forestry Administration Forest cover maps from Forestry Administration for c.2002, c2006, c.2010 Land use map (UN FAO 2002/ JICA 2000).

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	Oddar Meanchey	Seima	Prey Lang
	boundaries (2005) Protected areas and ELCs		
Forest carbon stocks assumed stable in initial 10-year baseline period?	Yes	Yes	Not known
Area/location of reference region	738,757 ha Northwestern Cambodia adjacent to the Thailand border, excluded protected areas and ELCs	966,603 ha Adjacent concessions and protected areas in Northeastern Cambodia that meet similarity criteria.	~5 million ha Four provinces encompassing the project area: Kampong Thom, Kratie, Stung Treng and Preah Vihear
Other projects or their leakage belts in the reference region or leakage belt?	No	No	Yes. Project area of Kulen Promtep will probably overlap. Leakage belt of Seima may overlap.
Spatial modeling	Baseline is spatially explicit. Spatial model: logistic regression model calibrated from data from the historic reference period.	Baseline is spatially explicit. Spatial risk model derived from 2002 – 2008 observed risk. Spatial model: multivariate regression model constructed in R then allocated spatially via ArcGIS.	Baseline is spatially explicit. Rates stratified to produce a rate inside concessions and outside concessions. The rate of allocation of new concessions was modeled. A spatial model was used to allocate deforestation outside concessions using assigned probabilities from 0 to 1. Spatial model: Idrisi Land Change Modeler
Goodness of fit of spatial model	Significance of logistic regression model $P < 0.0001$ Significance of all component variables $P \leq 0.02$	Meets methodology requirement of minimum Figure of Merit (FOM) equal to the percent net observed change in the reference region during the model calibration	The model was calibrated using deforestation information from 2001-2008, and validated using the deforestation information for 2008-

	Oddar Meanchey	Seima	Prey Lang
		period.	2011. FOM calculated (unknown result)
Period within which the initial baseline is (will be) valid	2008-2018	2010-2020	2013-2023?
Approximate % average annual deforestation projected in the project area in the first baseline period	~3%	~4- 4.5% (approximated)	Not known

8. Monitoring, Reporting and Verification (MRV)

MRV is broadly similar across projects, with field based sampling of forest carbon stocks and monitoring land use change via analysis of classified Landsat imagery, the latter with achieved classification accuracies of 81- 98%. All projects currently employ the same minimum diameters, forest strata, allometric equations for estimation of above- and belowground live tree biomass, and assumed carbon fraction of biomass.

On the Oddar Meanchey project, forest enhancement is tracked via periodic re-measurement of permanent plots only in areas of Assisted Natural Regeneration (ANR). Inventory estimates are updated every 2 – 10 years.

All projects are subject to validation and periodic monitoring and verification via a third-party audit process as required by the VCS and CCB.

Table 6: MRV

	Oddar Meanchey	Seima	Prey Lang
Biomass estimation / emission factors			
Forest biomass estimation	Direct measurement on sample plots	Direct measurement on sample plots	Direct measurement on sample plots
Sample design	Stratified random sample Sample population = forests in the project area	Stratified systematic sample Sample population = forests in the project area	Stratified random sample Sample population = forests in the project area
Forest strata delineated	Evergreen (evergreen and semi-evergreen) and deciduous/mixed. Stratification assisted using observed	Evergreen (evergreen and semi-evergreen) and deciduous/mixed	Evergreen (evergreen and semi-evergreen) and deciduous/mixed

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	Oddar Meanchey	Seima	Prey Lang
	Normalized Difference Vegetation Index (NDVIs) Monitoring of ANR areas divided into 6 strata (evergreen and deciduous each in 3 initial structural states)		
Plot design	Permanent and temporary plots 50m x 50m fixed area plots (similar to the FA's plot design for community forest inventory) Lying dead wood via line-intersect method	Permanent and temporary plots Clusters of three circular plots with fixed area, nested, largest with 20 m radius Lying dead wood via line-intersect method	Temporary plots (but permanently marked) Fixed area circular nested, largest with 20 m radius Lying dead wood via line-intersect method
Date of first measurement	2008 to 2012	2009 and 2012	Not known
Re-measurement of forest plots during first 10-year period?	Yes. Plots are re-measured every 2 years.	No	No
Sampling intensity of forest inventory	116 plots	312 plots (104 clusters)	100 plots
Minimum diameter thresholds	5 cm dbh for live and standing dead wood 10 cm diameter for lying dead wood	5 cm dbh for live and standing dead wood 10 cm diameter for lying dead wood	5 cm dbh for live and standing dead wood 10 cm diameter for lying dead wood
Carbon fraction assumed	0.50	0.50	0.50
Allometric equation(s) used	Chave et al 2005 moist equation (without height, Chave D), validated through destructive sampling outside the project area. Found to have a conservative bias in	Chave et al 2005 moist equation (without height, Chave D), truthed with limited (n=12; 6 deciduous, 6 evergreen) destructive sampling. No apparent	Chave et al 2005 moist equation (without height, Chave D). Reference validation results from Seima project.

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	Oddar Meanchey	Seima	Prey Lang
	both evergreen and deciduous forest. Roots estimated using Cairns et al 1997	bias noted (or slightly conservative) ⁶ . Roots estimated using Cairns et al 1997	
Precision achieved	12.8% and 11.2% at 95% confidence level in evergreen and deciduous forest, respectively	8.8% and 16.2% at 95% confidence level in dense (evergreen) and open (deciduous) forest, respectively; achieved precision is likely lower (better) because results were calculated using random sample formulae.	11.9% and 15.8% at 95% confidence level in evergreen forest and deciduous forest, respectively
Measurement error assessed?	Yes. 250 trees re-measured – original measurements with a conservative bias (dbh under-estimated).	Yes. Re-measured 10% of plots, 1.1% measurement error.	Not known
Non-forest (post-deforestation land cover class) biomass measurement and monitoring	Direct measurement on 36 sample plots	Directly measured	Data shared from Seima project
Remote sensing / activity data			
Land cover classes resolved in classification	Evergreen forest Deciduous forest Non-forest (grassland, bare soil, settlements, agriculture) Burns Water	Evergreen forest Deciduous forest Non-forest	Evergreen forest Deciduous forest Non-forest
Resolution / Minimum mapping unit (MMU)	30 m Landsat MMU = 1 Landsat pixel, 30m * 30m	30 m Landsat MMU = not known	30 m Landsat MMU = 90m*90m (approx. 1 ha); a 3x3 majority filter was used
Accuracy of	Assessed with high	Assessed with	Accuracy of the

⁶ It should be noted that this is one of the few efforts we are aware of to validate the Chave et al equations to Cambodia circumstances, which is critical given that the closest sample sites in the Chave et al dataset are from Malaysia and Indonesia.

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	Oddar Meanchey	Seima	Prey Lang
classification	resolution imagery from Google Maps, Microsoft Bing Maps, and the SPOT-5 and SPOT-4 imagery Accuracy achieved = 94-98%	Quickbird imagery Accuracy achieved = 93%	classification was assessed using available forest cover maps. Accuracy achieved = 81%
Treatment of clouds	99% cloud-free achieved by mosaicking (most images from dry season). Areas of cloud cover temporarily excluded from analysis until cloud free images become available in subsequent monitoring events.	Not known VM0015 requires that areas under cloud cover are masked out from accounting, unless ancillary data can confirm presence/absence of forest under cloud cover, or cloud free images become available in subsequent monitoring events.	Cloud-free images were achieved mosaicking scenes from various months
Is natural disturbance monitored and accounted for?	Yes. Not included in baseline.	Yes, if in areas that previously generated credits. Not included in the baseline.	Yes, if in areas that previously generated credits. Not included in the baseline.
Reporting, validation, and verification			
Validation	Validation completed August 2011.	Validation to be completed October/November 2013.	TBD
Monitoring and verification frequency	Completion of first verification expected September 2013 (first monitoring period = 2008-2011). Monitoring and verification is scheduled to take place every two years.	First monitoring event in 2014. VCS monitoring and verification slated every 2 – 4 years. CCBA every 5 years.	TBD

9. Non-Permanence Risk, Leakage, and Uncertainty

For all of the projects, non-permanence risk, relating to the risk of reversals following issuance of credits, was assessed using the VCS AFOLU Non-permanence Risk Tool. The tool assesses risk across a range of areas including internal risks (e.g. capacity for project management, financial viability, opportunity cost), external risks (e.g. land tenure, community engagement, political stability) and natural risks (e.g. extreme weather, fire, forest pests and

disease). The outcome of the tool is an assessment of overall project risk, which is accounted for as a percentage of verified credits that are held in reserve in a VCS-managed buffer pool that serves to replace reversals that may occur across a large portfolio of projects.

Regarding leakage, in all cases leakage is monitored and accounted for by delineating a leakage belt around the project area and tracking deforestation in that area relative to a baseline. Leakage belts are delineated in various ways but generally are justified by an analysis of the mobility of deforestation agents to establish the likely bounds within which activity displacement may occur. The leakage belts are monitored in the same way as the project area (see Section 8 MRV above). Potential leakage *outside* the leakage belt (i.e. by “geographically-unconstrained agents” *sensu* VM0009), but within the bounds of Cambodia, is also estimated and accounted for in the Oddar Meanchey project, but does not appear to be addressed by the Seima and Prey Lang projects (not required by VM0015), though there is some supplemental calculation of deterred migration for the Seima project. Market leakage is not accounted for in any of the projects, but may be an important factor in the Prey Lang project where commercial production on ELCs is affected.

For all of the projects, deductions for uncertainty center on uncertainty around biomass stock and emission factor estimates, imposing deductions where the half-width of the 95% confidence bound exceeds 15% of the mean value (VM0006) or where the half-width of the 90% confidence bound exceeds 10% of the mean value (VM0015). Uncertainty is assessed at the stratum level and for specific land-use class transitions for the Seima and Prey Lang projects (VM0015) and Oddar Meanchey project (VM0006), respectively. Uncertainty related to assessment of land use change is addressed by setting classification accuracy thresholds, 90% for VM0015 and 85% for VM0006, and where these thresholds are met no deductions are imposed, as for the Oddar Meanchey and Seima projects. It should be noted that the overall classification accuracy achieved by the Prey Lang project (81%) does not meet the VM0015 methodology requirement of 90%, which will require either improving the classification or imposing some uncertainty deduction (currently unspecified by the methodology).

Table 7: Non-permanence Risk, Leakage, and Uncertainty

	Oddar Meanchey	Seima	Prey Lang
Non-permanence risk			
Risk assessment tool	VCS AFOLU Non-Permanence Risk Tool	VCS AFOLU Non-Permanence Risk Tool	VCS AFOLU Non-Permanence Risk Tool
Assigned non-permanence risk buffer	19.75%	13% (not yet validated)	Not yet assessed
Leakage			
Leakage belt area	116,806 ha, = buffer 5-12 km in width Defined using a “cost-weighted distance value” around each project parcel with two main input variables: 1) speed of traveling on	3 km buffer around every sub-village. Total area not known. Defined via empirical analysis of	Area as yet undetermined. Being developed in consultation with RGC/FA (in process of planning a forest protection/REDD strategy in the Prey Lang

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	Oddar Meanchey	Seima	Prey Lang
	different terrain and roads, and 2) distance communities are willing to transport for timber harvesting and agriculture. ELCs and timber concessions excluded from leakage belt	mobility around villages.	region). Currently proposing to define leakage belt as all forested area in the four provinces, outside of legally protected areas and concessions (in place of VM0015 opportunity cost or mobility analysis).
Leakage belt includes other project areas and/or their leakage belts?	No	No	Project area of WCS's northern plain initiative will probably overlap. Leakage belt of WCS's eastern plain initiative may also overlap.
Treatment of leakage outside the leakage belt?	Yes. Activity-shifting leakage from geographically unconstrained drivers, involving forest clearing for land sale, quantified using a factor approach.	Not required by VM0015, but project accounting includes a calculation of deterred migration	No, not required by VM0015
Market effects accounted for?	No	No	No
Uncertainty			
Treatment of uncertainty	23% discounts applied for uncertainty in stock change estimates for evergreen to deciduous and deciduous to non-forest transitions. No uncertainty in land-use change analysis applied (met minimum accuracy level of 85%, above which no uncertainty is accounted). Uncertainty in estimates of GHG benefits of fuel stoves addressed by applying a conservative	Estimated and deducted for carbon stock values where precision is below threshold (estimate of open/deciduous forest stratum).	Deduction to be accounted for uncertainty of carbon stock value for deciduous forest. Note that the overall classification accuracy achieved (81%) does not meet the VM0015 methodology requirement of 90%, which will require either improving the classification or imposing some uncertainty deduction.

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	Oddar Meanchey	Seima	Prey Lang
	discount factor of 0.75		

10. Considerations Related to Approaches to Safeguards and Benefit Sharing

The experience of designing and implementing safeguards and benefit sharing systems for REDD+ projects provides insight on the potential strategies and challenges to be dealt with at the national level, though some limitations are apparent. These projects address relatively small populations, particularly in the case of Seima, and they have invested significant time and resources to build relationships, awareness, and ensure fair representation, which is significantly more difficult at a national or subnational scale. Furthermore, since carbon revenues have yet to reach project beneficiaries or support full-scale implementation in any of the Cambodian projects, many of the policies and procedures that have been put in place, such as the grievance mechanism, are not adequately tested. Nevertheless, there are some insights from the project experience that provide the basis for further dialogue on the national approach.

First, both the Oddar Meanchey and Seima projects have built significant capacity and experience in organizing meaningful consultations with local stakeholders. Some of the useful lessons learned which could be applied at the national level include the importance of finding effective ways to communicate the basic concepts of climate change and REDD to a local audience in familiar terms, without relying on written materials, and without creating undue expectations. Both projects benefited because they already had relationships of trust with the communities and with relevant stakeholders, and because they were able to identify individuals who could legitimately represent the communities (i.e. the CF Network in Oddar Meanchey and indigenous elders in Seima). Under a jurisdictional or national approach, it will be harder to tailor communication materials and employ them directly. Furthermore, existing networks and structures may not adequately represent the people who need to be consulted.

In terms of formal project consultations, the Seima project is noteworthy because it supported a neutral facilitator (i.e. the Cambodian Legal Education Center) to hold discussions with local communities, thereby minimizing some of the bias that is more likely when the project developer or proponent facilitates. The national process should also consider ways to encourage open discussion free from bias and intimidation. Another important point to consider is gender. The forestry sector is notoriously gender biased towards men. The Oddar Meanchey project may be unique in making significant efforts to mainstream gender within the project and to ensure that equal numbers of men and women were able to participate in project activities including consultations. Fortunately, there are some useful tools⁷ to guide gender integration in the national REDD process.

In terms of benefit sharing, as mentioned, none of the projects have yet sold credits or delivered carbon revenues to stakeholders. Furthermore, the projects have not yet agreed upon the hierarchy of payments or how revenues will directly incentivize or reward forest protection efforts. However, there have been non-financial benefits throughout the project development stage. For instance, both Oddar Meanchey and Seima projects invested significantly in assisting local communities to secure land tenure (i.e. CF tenure and communal land tenure), and they have been able to assure communities access to at least a portion of future carbon revenues. The national REDD Task Force will need to tackle the issue of how tenure (and different types of tenure) relates to carbon ownership and the right to receive revenues. They will also face a similar challenge as the projects have in deciding how

⁷ See "From research to action, leaf by leaf: getting gender right in the REDD+ Social and Environmental Standards"

revenues can be used to incentivize addressing the drivers of deforestation at multiple administrative levels.

The Oddar Meanchey project has also started to address the problem of low capacity for financial management through the provision of small grants and through training and coaching on financial systems at the community level. Norms and systems to ensure transparency and accountability in the management of REDD revenues down to the local level may take significant time and effort to establish at larger scales. There are also some more practical issues related to benefit sharing, such as the project-specific agreement between the FA and Terra Global Capital for an equity share in credits generated over the 30-year project cycle. Respect for commitments such as this will need to be incorporated in national accounting.

All of the REDD projects in Cambodia have experienced significant delays in reaching the market and in delivering significant benefits to stakeholders, leading to disappointment and fatigue, particularly since pressures on the forest continue to grow. It will be important for the REDD Task Force to act carefully yet expeditiously to reinvigorate the sector with robust systems for safeguards and benefit sharing.

11. Technical Considerations in the Integration of Pre-existing Projects within a Jurisdictional REDD+ program

Cambodia is still in the early stages of developing a jurisdictional REDD+ program, and current discussions center on initiating with sub-national implementation, with area(s) still to be selected. In the interim, projects have opened dialogues and coordinated with the RGC/REDD+ Task Force, and with each other, in their development, so that any potential future disparities in accounting and MRV between projects and a jurisdictional program can be minimized.

In the section below we review considerations for integrating pre-existing projects into a jurisdictional, whether national or sub-national, REDD+ framework, and relevant opportunities and challenges presented by current and imminent projects in Cambodia. The objectives for any integration (i.e. to what degree should direct crediting to projects be preserved), and the means to achieve them, have not to our knowledge been formally discussed, and will involve the input of many stakeholders, and will not be decided wholly on the basis of technical considerations. We do not assert that the recommendations laid out below are the only possible approaches for integrating projects into a jurisdictional REDD+ framework, nor necessarily the best in the Cambodian context, but present them as a means of initiating these discussions and focusing attention on accounting considerations that will need to be addressed in any eventual integration process.

Because a jurisdictional REDD+ program will be developed in an environment with pre-existing REDD projects, a critical consideration will be to what degree the jurisdictional program will be developed to accommodate these projects. Integration of pre-existing projects into a jurisdictional framework poses implications to those projects, particularly in regard to their financial stability which is dependent on performance-based payments and how that performance is determined. If project scale accounting is to be preserved within an eventual jurisdictional REDD+ framework, a number of key areas will need to be addressed to ensure proper alignment of project baselines and MRV with a jurisdictional framework, such that accurate estimates of REDD+ outcomes can be reported across scales. Much will depend on whether the approach toward integration is “bottom-up”, integrating project baselines and MRV in some manner within a jurisdictional framework, or “top-down”, replacing project level

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determination of baselines and MRV with jurisdictional “allocations”, and is conceptually simpler.

A “bottom up” approach where pre-existing baselines and MRV can be preserved to some degree (e.g. through grand-fathering periods) would better accommodate projects, but requires careful consideration to reconcile project and jurisdictional accounting. There is already some thinking that projects will have to update to jurisdictional reference levels, however, details on when and how this would be done remain to be determined. A natural point at which projects could update to (i.e. be replaced by) a jurisdictional reference level allocation would be at VCS baseline revision, currently slated for 2018 (Oddar Meanchey), 2020 (Seima) and estimated 2023 (Prey Lang). This would mean that in the interim, project baselines and MRV would need to be integrated into jurisdictional reference level and MRV.

An important consideration in integrating projects within a jurisdictional framework is setting consistent accounting boundaries. By accounting boundary we refer to the scope of activities (where accounting is activity-based, as it will likely be in the near term), and pools included in REDD+ accounting (in both baselines/reference levels and MRV). The table below summarizes some of the likely key differences to be encountered between existing projects’ and jurisdictional accounting boundaries.

	Projects in Cambodia (existing or in development)	Jurisdictional framework in Cambodia (potential)
REDD+ activities included	<ul style="list-style-type: none"> • Reducing emissions from deforestation (three projects) – <i>unplanned deforestation only</i> • Enhancement of forest carbon stocks (one project) • Reducing emissions from forest degradation (indirectly in one project) 	<ul style="list-style-type: none"> • Reducing emissions from deforestation • Reducing emissions from forest degradation • Enhancement of forest carbon stocks • Conservation of forest carbon stocks • Sustainable management of forests
Forest carbon pools included	<ul style="list-style-type: none"> • Aboveground biomass • Belowground biomass • Dead wood 	<ul style="list-style-type: none"> • Aboveground biomass • Belowground biomass • Dead wood • Litter • Soil organic carbon

Of note is that projects currently have incomplete REDD+ accounting boundaries, as compared to the scope generally envisioned for national scale efforts. Three carbon pools are accounted for in the projects investigated (reflecting constraints in the practicalities of measurement), whereas there are indications that a national REDD+ accounting framework in Cambodia would account for five pools, including litter and soil carbon (Cambodia R-PP, 2011). Nonetheless, the most significant sources of forest carbon emissions (above- and belowground live tree biomass) are covered by the projects, so disparities should not be substantial.

Likewise, there is incomplete accounting of REDD+ activities (as defined per COP16) by projects. The current projects examined are mostly restricted to reducing emissions from

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deforestation, and in one case (Oddar Meanchey) also accounting enhancement and indirectly degradation (by accounting GHG benefits of improved fuel stoves). Furthermore, reducing emissions from deforestation is incompletely accounted in project baselines due to the VCS distinction between planned (authorized) and unplanned (unauthorized) deforestation, i.e. authorized deforestation is not currently included in project baselines (though it is being considered in the Prey Lang project).

Conversely, there is an area where jurisdictional REDD+ accounting is likely to be more constrained than in projects. Jurisdictional accounting is likely to be centered on emissions related to human activities (limited to “managed” lands), and exclude natural disturbance from reference level and MRV. In contrast, VCS REDD projects include natural disturbance in accounting – it is not explicitly excluded from setting baselines and is accounted as an emission ex post (in VM0006 and VM0015).

Some differences in accounting boundaries between projects and a jurisdiction within which they are nested could be tolerated without undermining the integrity of the system (though at the expense of accuracy⁸), provided that they do not result in combined issuances to projects, in terms of net GHG emission reductions achieved, that exceed those of the jurisdiction (“over-issuance”). This is currently unlikely in Cambodia, given that (1) projects under-account REDD+, as explained above, (2) currently withhold ~10-20% of credits as VCS risk buffer contributions, and, importantly, (3) in combination represent no more than 15% of the forested landscape in Cambodia (~1.6 million ha all actual and prospective projects / ~10.7 million ha forest nationally; see table below).

Project	Estimated area (ha)
Oddar Meanchey	56,050
Seima	180,515
Prey Lang	400,000
S. Cardamoms	465,000
Kulen Promtep	402,500 (maximum)
Siem Pang	66,000
Siem Reap	10,000
TOTAL	1,580,065

Over-issuance is still possible, for example where leakage-related emissions in an activity or pool not accounted for by a project are increased as a result of the project activity, as in the case of degradation emissions resulting from displacement of deforestation; still, any unaccounted leakage from projects is likely to be < 100% of project emission reductions, and is unlikely to cause jurisdiction level over-issuance with less than 15% of the national forested landscape in projects for the near term (3-5 years).

One accounting arrangement that could be considered, however, would be for projects to account for leakage through a jurisdictional allocation that would replace current project

⁸ Note though that it may not be desirable to conduct MRV in such a conservative way that potential for jurisdictional crediting is significantly impaired

accounting of leakage (from leakage belts and estimations of leakage from geographically-unconstrained agents). The idea would be for the surrounding jurisdictional area to replace the leakage belt of projects and serve as an assessment area from which a project's share of responsibility for any increases in emissions within that space is assessed. This arrangement would implicitly acknowledge that the capacity of projects to successfully generate net GHG emission reductions is dependent on the regional context, and enabling environment, within which they are embedded. It would also eliminate complications related to overlapping accounting boundaries, which becomes problematic where internal project accounting expands to leakage belts (in practice, using VCS REDD methodologies, leakage belts are often approximately equal in size to the project area, which means that ~30% of the national forested landscape is accounted for by projects⁹) and beyond. We are already aware of overlapping accounting boundaries in the case of the Prey Lang project (still in development), which has an expansive leakage area comprising four provinces, and is anticipated to overlap with proposed REDD projects including the Wildlife Conservation Society's Seima (in the eastern plains) and Kulen Promtep (in the northern plains) projects.

In practice, how this arrangement for integrating project and jurisdictional accounting would operate would be that pre-existing projects (potentially for some limited grandfathering period, after which they would update to jurisdictional baselines and MRV) would operate as independent accounting entities (with their own baselines and MRV), surrounded by a jurisdictional matrix with its own reference level and MRV. At reporting, projects will include a deduction for leakage in their accounting of net GHG emission reductions, derived from a (proportional?) allocation of any increases in forest carbon emissions observed within the jurisdictional matrix. Jurisdictional reference level and MRV could then be summed from the project areas and the jurisdictional matrix, because there are no overlapping accounting boundaries¹⁰. One insignificant inconsistency would be that MRV within the project areas would include some indiscernible amount of leakage from the jurisdictional matrix. But importantly, there are no discrepancies in this arrangement because jurisdictional reference level and MRV are constructed from the bottom (projects) up, and all those component parts (projects, jurisdictional matrix) are "correct"; i.e. there is no need for "truing up" project MRV with that of the jurisdiction, which happens when jurisdictional MRV overlaps with that of projects (and the implicit assumption is that jurisdictional MRV is "correct").

A further consideration is that for this arrangement to operate properly would require that project and jurisdictional MRV schedules be synchronized. While project MRV schedules are not currently synchronized (as reviewed above), adjusting monitoring and verification on projects would not pose a serious difficulty given the flexibility provided by the VCS standard and methodologies (though projects will likely want to report more frequently, for cash flow considerations, than a jurisdiction).

There are enough commonalities in project MRV and baselines among projects and a likely eventual jurisdictional REDD+ accounting framework to merit this approach for integrating project and jurisdictional accounting, including: Tier 3 activity-based stock change accounting, field based sampling of forest carbon stocks (note that all projects employ the same minimum

⁹ Note though that this is tempered by the fact that projects only account negative leakage from within these larger accounting boundaries (per VCS, which does not allow crediting positive leakage). Emissions in areas of leakage belt overlap would be double counted and result in a (conservative) overestimate of ex post emissions at the jurisdictional level, which may serve to prevent bottom-up project accounting from exceeding a jurisdictional outcome.

¹⁰ except in one minor(?) case where emission reductions from fuel stoves in the Oddar Meanchey project may originate from fuelwood collection (degradation) outside the project boundary

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diameters, forest strata, allometric equations and carbon fraction of biomass) and monitoring land use change via analysis of classified satellite imagery (all project currently using Landsat). We understand that project data on forest carbon stocks is not currently being considered for inclusion in a National Forest Inventory (NFI), from which jurisdictional emission factors would presumably be sourced. While there are certainly complications imposed when combining datasets, the project data is a valuable resource, and could be incorporated into a NFI, for example by screening for minimum quality standards and delineating project sample areas as discrete strata to properly weight by sampling effort (and also permit use of different plot sizes between strata; compare the Seima and Prey Lang projects' circular nested plots with the Forestry Administration's 50m * 50m rectangular plot). In this way, the value of this project field measurement data is acknowledged and projects would become *contributors* to and *participants* in jurisdictional MRV.

Some inconsistencies are presented regarding mapping resolution that will have to be addressed in linking project and jurisdictional MRV. The relevant operative forest definition is currently that of the CDM Designated National Authority (DNA), the Ministry of Environment, Climate Change Office, which sets the following threshold criteria to define forests: minimum 10% forest canopy cover, minimum potential tree height of 5 m, and minimum area of 0.5 ha. The Oddar Meanchey project references this definition specifically in guiding its land cover classification work. One discrepancy noted is that the Prey Lang project currently employs a minimum mapping unit of approximately 1 hectare in its classification work, which does not align with the 0.5 ha minimum area of the forest definition (though this would lead to a conservative estimation for baseline deforestation). By comparison, the minimum mapping unit for the Forestry Administration's forest cover mapping has historically been 20 ha, considerably coarser in resolving deforestation than the minimum mapping units currently employed by projects (0.09, 1 Landsat pixel, to ~1.0 hectares, 3 * 3 Landsat pixels); undoubtedly, the minimum mapping unit for jurisdictional MRV will be less than 20 ha. The solution would be to either ignore the differences (if they can be demonstrated to not produce exaggeratedly skewed results) or to set a standard minimum mapping unit equal to that of the project with the coarsest minimum-mapping unit.

While there are significant discrepancies in terms of baseline setting between projects, they should not pose a barrier to linking project baselines to a jurisdictional matrix baseline. The Seima project applies a logistic function to project increasing rates of deforestation over time (defensible and empirically-based), while the Oddar Meanchey and Prey Long projects employ simple historic average rates. While resulting in a higher baseline, the approach used for setting the Seima project baseline is not "wrong", and in fact may better reflect actual trends and align with guidance that reference levels consider national circumstances in addition to historic emissions. The projection of simple historic average rates, for example in the case of Oddar Meanchey, has failed to anticipate recent increases in deforestation rates due to increased tension and conflict along the border with Thailand leading to construction of new "strategic" roads by the military to protect the border, leading to increased clearing of agricultural land for soldier families and increased illegal logging. Simple historic baselines by projects are likely to be less than an eventual jurisdictional reference level, and their integration into a jurisdictional reference level only introduces a conservative bias (which can be tolerated).

Finally, we offer a recommendation for reducing complexities in national REDD+ accounting. Namely, accounting can be greatly simplified by focusing MRV and reference level setting on only three of the five REDD+ activities (per COP16): reducing emissions from deforestation, reducing emissions from degradation and enhancement of forest carbon stocks. Conservation of forest carbon stocks and sustainable management of forests need not have their own

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reference levels and MRV to achieve full accounting of REDD+ emissions, i.e. the emissions associated with these activities would be included within the un-differentiated net emissions from deforestation, degradation and enhancement. This is not to say that the implementation of these activities should not be tracked, but that over REDD+ GHG accounting need not be broken down beyond the three activities of reducing emissions from deforestation, reducing emissions from degradation and enhancement of forest carbon stocks.

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Annexes

Annex 1: Research Framework

Institutional	
<i>Overview</i>	Type of REDD+ project
	Standard
	Start date
	End date
	Location
	Area
	Brief summary
	Activities and measures to mitigate leakage and risk
	Expected GHG emissions reductions
	Proponent/ Credit Owner
	Implementing Partner(s)
	Donors - Financing Source & Mechanism
<i>Safeguards</i>	Safeguard standard
	FPIC process
	Grievance redress mechanism
	Employee opportunities
	Access of vulnerable & marginalized
	Government Framework
<i>Benefit System/Mechanism</i> <i>Distribution</i>	Benefit sharing mechanism
Methodological	
<i>Overview</i>	Title of Methodology implemented to Estimate GHG Emissions
	General Accounting Framework
	Summary of Baseline and Project Scenarios
<i>Reference level/ methodology</i> <i>baseline-setting</i>	Baseline method
	Activities measured
	Empirical basis for baseline
	Baseline revision
	Spatial and temporal bounds
	Spatial modeling
	Assumptions

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<i>Monitoring & MRV</i>	Overview of Measurement and Monitoring Methods Used
	Monitoring events
	Forest biomass measurement and monitoring
	Remote sensing
	Other GHG sources
	Reporting, validation and verification methods
<i>Non-permanence Risk</i>	Methods Used to Control Non Permanence Risk, Including Buffer Pools and Methods for Buffer Determination
<i>Leakage</i>	Methods Used to Estimate Monitor and Control Leakage, including creation of buffer zones
<i>Uncertainty</i>	Methods used to account for uncertainty
Analysis	
	Status of Cambodia national REDD+ Program
	Convergence & divergence
	Recommendations for Integration/harmonization

Annex 2: Other REDD+ Initiatives in Cambodia

Several other REDD+ projects have been initiated or conceptualized; however, they are either at a very early stage or else full information was not available. These initiatives are briefly described below, but they were not selected for in-depth study and analysis.

- **Southern Cardamom REDD+ Project**

The Southern Cardamom REDD+ Project was initiated by Wildlife Alliance in collaboration with the Forestry Administration in 2009. Office National des Forêts International (ONFI) and Wildlife Works have provided technical assistance. The project is located in Southwest Cambodia in the Southern Cardamom Mountains and covers approximately 465,000 hectares. VCS methodology VM0009 has been selected, including both planned and unplanned deforestation to account for conversion by large scale agribusiness as well as mosaic pattern clearing for agriculture by small holders. The biomass assessment for this project has also included soil carbon.

- **Kulen Promtep REDD+ Project**

This project is located in the Kulen Promtep Wildlife Sanctuary in the northern plains near the border with Thailand. The project was initiated by WCS and is currently the only active initiative in collaboration with the Ministry of Environment. Project development has been supported by UNDP, among other donors. Unfortunately due to non-disclosure agreements, further information on the project is not currently available.

- **Siem Pang REDD+ Initiative**

Birdlife International aims to develop a REDD+ project in the forests of Western Siem Pang, located in Stung Treng province in Northeastern Cambodia. Though the project concept has been on the table for several years, Birdlife is not moving forward with project development until the area is officially designated by the RGC as a protected forest. This step is seen as a prerequisite in order to ensure that the forests in the area will not be converted to large scale agriculture. Birdlife has made the designation request for an area of 66,000 hectares, and since there are no known overlaps with economic land concessions in this area, Birdlife expects the designation to be approved by the end of 2013 (Bou, 2013).

- **Siem Reap Community Forestry REDD+ Project**

The Siem Reap Community Forestry REDD+ project was first launched in 2009 by the Clinton Climate Initiative working in collaboration with the Forestry Administration, Pact, and Terra Global Capital to conduct capacity building and baseline assessments; however due to lack of funds, efforts were discontinued in 2011. Subsequently, the project was officially re-launched in March 2013 by Fauna and Flora International (FFI) in collaboration with the Forestry Administration and with additional support from Non Timber Forest Products Exchange Programme (NTFP EP). The project originally encompassed 34 community forestry sites in Siem Reap province covering 15,649 hectares, but it was scaled back to 16 CF sites by FFI. Unfortunately the findings from the carbon assessment work indicated that the carbon content level in the area is too low for a financially viable project, in view of current carbon prices. FFI is therefore, exploring new potential project areas, including one in Varin district, Siem Reap. FFI is examining the potential for use of the VCS methodology VM0015 for this area of approximately 10,000 hectares (Sherchan, 2013).

- **Phnom Samkos REDD+ Initiative**

The Phnom Samkos REDD+ project is an initiative for which there is very little information publicly available. The Vietnamese company Indochina Green was given permission to undertake a REDD+ initiative in the Phnom Samkos protected area in 2010; however, it is unclear if any project development activities have taken place or not.