Sustainable Forest Management Through REDD+ Mechanisms in Kampong Thom Province

Project Number: PD 740/14 Rev.2 (F)

September 2019

This book is a compilation of six reports that were funded by the International Tropical Timber Organization's "Sustainable Forest Management Through REDD+ Mechanisms in Kampong Thom Province" project. Project Number: PD740/14 Rev. 2 (F).

The findings, interpretations, and conclusions expressed in this document are those of the authors. They do not reflect the views of the Forestry Administration of the Ministry of Agriculture, Forestry and Fisheries, the International Tropical Timber Organization or the governments they represent. The field assessment and writing up of these three reports were done by three national consultants, with logistical supports from the Forestry Administration Cambodia and constructive technical comments from the Forestry Administration and International Tropical Timber Organization.

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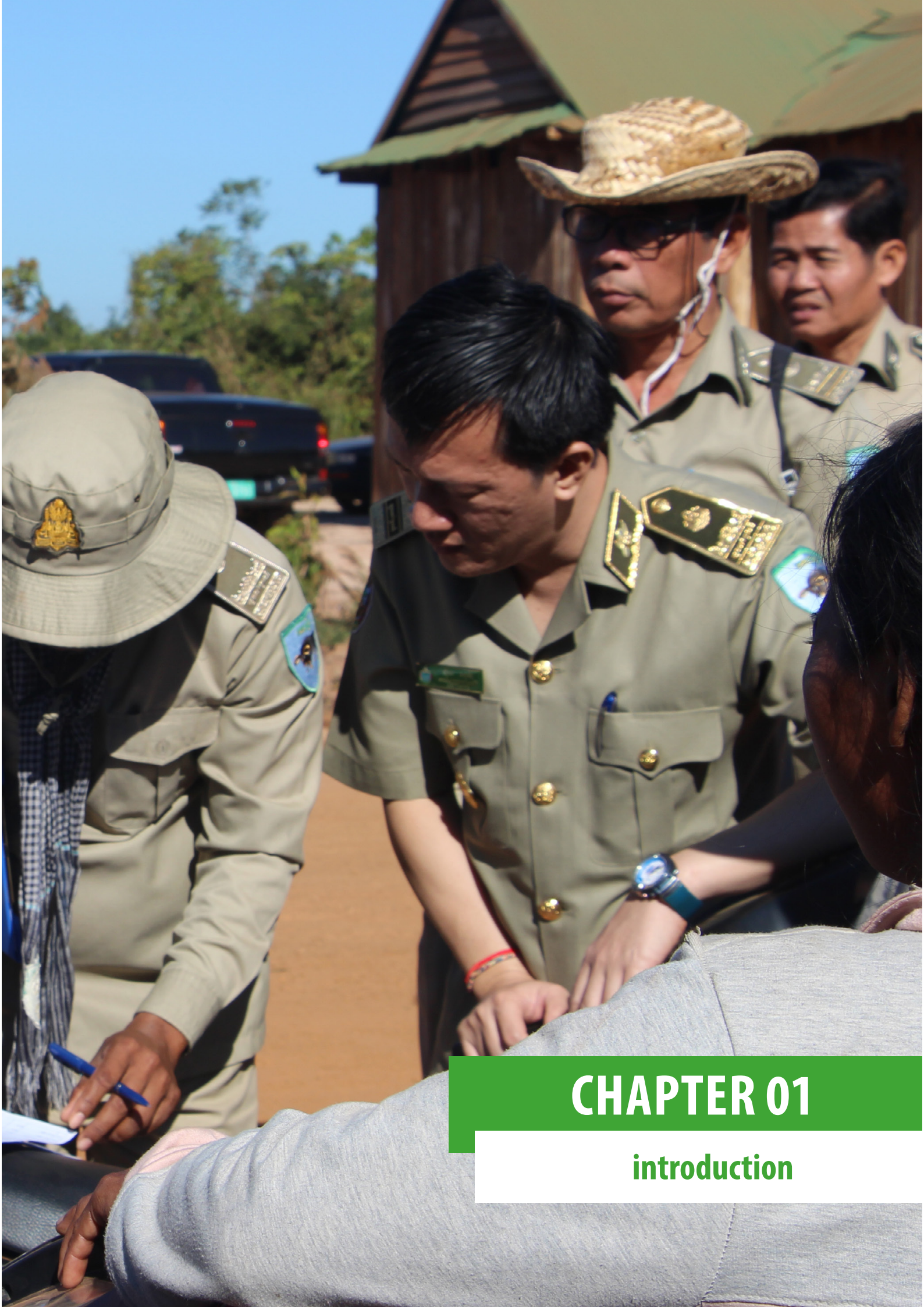
Acronyms

AFOLU	Agriculture, Forestry and Other Land Use
BSM	Benefit Sharing Mechanism
CBD	Convention of Biological Diversity
CCB	Climate Community Biodiversity
CCBA	Climate, Community and Biodiversity Alliance
CCI	Clinton Climate Initiative
CF	Community Forestry
CFi	Community Fisheries
COP	Conference of the Parties
CPA	Community Protected Area
ESIA	Environmental and social Impact Assessment
FA	Forestry Administration
FiA	Fisheries Administration
FCPF	Forest Carbon Partnership Facility
FPIC	Free, prior and informed consent
FREL/FRL	Forest Reference Emission Level/ Forest Reference Level
GCF	Green Climate Fund
GDANCP	General Department of Administration for Nature Conservation and Protection
Ha	Hectare
ITTO	International Tropical Timber Organization
JCM	Joint Credit Mechanism
KCRP	Korea-Cambodia Joint REDD+ Project
KFS	Korea Forest Service
KSWS	Keo Seima Wildlife Sanctuary
LULUCF	Land Use, Land Use Change and Forestry
MAFF	Ministry of Agriculture Forestry and Fisheries
MDGs	Cambodia Millennium Development Goals
MoE	Ministry of Environment
MRV	Monitoring, Reporting and Verification

NBSAP	**National Biodiversity Strategy and Action Plan**
NCSD	National Council for Sustainable Development
NDC	Nationally Determined Contribution
NER	Net Emission Reduction
NFMS	National Forest Monitoring System
NGOs	Non-Governmental Organizations
NRS	National REDD+ Strategy
NSDP	National Strategic Development Plan
NTFPs	Non-timber forest products
PAMs	Policies and Measures
PDD	Project Design Document
PES	Payment for Environmental Services
PLWS	Prey Long Wildlife Sanctuary
PMU	Project Management Unit
RGC	Royal Government of Cambodia
REDD+	Reducing Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
ROK	Republic of Korea
R-PP	Readiness Plan Proposal
SES	Social and Environmental Standards
SESA	Strategic Environment and Social Assessment
SIS	Safeguard Information System
SoI	Summary of Information
SPF	Seima Protection Forest
TRP	Tumring REDD+ Project
TWG-FR	Technical Working Group on Forest Reform
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
USD	United States Dollar (1 USD = 4,000 Riel)
VCS	Verra (Verified Carbon Standard)
VCU	Verified Carbon Unit
WB	World Bank Group
WCS	Wildlife Conservation Society


Crown
Wave



CHAPTER 01

introduction

Chapter 01

Introduction

Cambodia has achieved remarkable economic growth within the last decade. In 2015, its gross domestic products (GDP) was approximately USD 18 billion and has been increasing at about 7 percent per year since 2010. Poverty rates declined from 48 percent in 2007 to 14 percent in 2014 indicating that about one-seventh of the population is still living below the poverty line . Based on the World Bank´s estimate of Cambodia's gross national income, Cambodia graduated in July 2016 from a low to a lower middle-income country . In the Greater Mekong Sub-region, this status is shared with Lao PDR, Myanmar and Vietnam. Cambodia's economic growth is predicted to remain strong until 2022, averaging just over 7 percent a year.

The United Nations Population Division estimates the current population of Cambodia at 16 million people, of which 98 percent are Khmer, with the remainder being 24 different ethnic minorities mostly living in the north-eastern upland provinces. Population is projected to increase at 1.5 percent per year in 2018, being one of the highest growth rates in Southeast Asia. The majority of Cambodia's population is young, the median age being 24.3 years, and lives in the countryside (79 percent rural population, 21percent urban). Around 7 million people constitute the active labour force while the rural population finds employment mainly in agriculture and survives at subsistence level. The quickly growing and increasingly urban population, who are earning more and demanding a more modern life-style, are putting pressure on land and forests, food resources and transportation needs.

Forestry according to different sources and years contributes between 3.2 and 5.7 percent to the GDP and provides employment to approximately 14,000 men and women including in the wood industry. In addition to the direct contribution to GDP, forests are important for supporting rural livelihoods. The majority of rural households rely on fuelwood and charcoal. Traditionally, forest resources, and in particular non-wood forest products (NWFP) , have provided important safety nets for rural people during extreme weather events such as floods and droughts.

Cambodia depends largely on climate-sensitive sectors including agriculture, land, water resources, forestry and fisheries, and is highly vulnerable to the impacts of climate change, in particular from floods, droughts, windstorms, and saltwater intrusion. Rural households, especially women and other vulnerable groups, struggle to cope with the impacts of climate change. According to estimates of the Asian Development Bank, Cambodia lost USD 1.5 billion, about 10 percent of its GDP in 2015, from the negative effects of climate change . Deforestation and forest degradation contribute significantly to greenhouse gas emissions (GHG). Assessments undertaken for the National REDD+ Strategy indicate that from 2010 to 2014, annual GHG emissions from deforestation account for around 150 million tons CO2.

The Royal Government of Cambodia's (RGC) recognises that deforestation and degradation negatively affect the livelihoods of poor forest dependent communities, and are significant sources of GHG emissions both nationally and regionally. As an active Party and a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Cambodia fully supports the implementation of REDD+, which stands for actions to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks. Cambodia has been a strong supporter of the adoption of REDD+ and in started its REDD+ Readiness process in 2008. Two REDD+ pilot projects were established that same year. The Cambodia REDD+ Readiness process was implemented from 2008 until 2016. In 2010, the National Roadmap was finalised

and a National REDD+ Programme was established in 2012, leading to stakeholder engagement, capacity building and full implementation of institutional arrangements. In 2014 preparation of the National REDD+ Strategy (NRS) started, considering the Cancun Agreement, Warsaw Framework and the Paris Agreement, as well as RGC policies, including the national Climate Change Strategic Plan (2014 – 2023).

The product of the process is the National REDD+ Strategy 2017 – 2026, which sets out Cambodia's vision, mission and goals for reducing emissions from deforestation and degradation. As stated in the NRS, the vision of Cambodia's NRS is to contribute to national and global climate change mitigation through improving the management of its natural resources and forestlands, and biodiversity conservation and sustainable development. The mission of the NRS is to strengthen the functioning and capacity of national and sub-national institutions for effective implementation of policies, laws and regulations to enhance management of natural resources and forestlands, and biodiversity conservation. The goal is to reduce deforestation and forest degradation while promoting sustainable management, conservation of natural resources and contribute to poverty alleviation.

The NRS builds on the experiences from the initial two pilot REDD+ that started in 2008. The first REDD+ project was the Oddar Meanchey Community Forestry REDD Project. Under a "bundled approach," thirteen Community Forestry groups agreed to protect 64,318 hectares of forests in their communities, accounting for about 31 percent of total forest cover in Oddar Meanchey province. The aim of the project is to reduce deforestation and degradation in the project area and its leakage belt through a range of project activities designed to reduce or eliminate the drivers of deforestation and forest degradation, including forest protection, fire prevention, reinforcing land tenure, distribution of fuel-efficient stoves, and agricultural intensification. There have been offers to purchase carbon credits generated through the project in the voluntary market, but uncertainties regarding the establishment of an appropriate administrative mechanism for equitably distributing revenues from those credits have heretofore deterred the signing of a contract.

The experience in Oddar Meanchey reveals some of the matters associated with the implementation of REDD+ activities at the project level that require further consideration. Those include:

- Increased attention to the participation and engagement of women and other vulnerable groups;
- Basic education and awareness-raising on climate change and the REDD+ concept prior to consultations;
- Clarity on benefit sharing, revenue flows and increased support for skills and transparent systems to properly manage finances;

- Support for community forest governance during project preparation;
- Expansion of community forestry as a foundation for REDD+; and
- Enhancing long-term tenure security and ensuring carbon rights.

The Seima Protected Forest REDD+ project was the second REDD+ project in Cambodia that was initiated in July 2008 by the FA in collaboration with the Wildlife Conservation Society. This REDD+ initiative aims to support protection of old growth forest within a core area of 180,515 hectares located in the Seima Protected Forest in the eastern province of Mondulkiri. The area is renowned for an abundance of globally important species such as the endangered douc langur (Pygathrix spp.) and the banteng (Bos javanicus). The project area is also home to a population of approximately 10,000 Bunong indigenous people living in 20 villages who rely on forest resources and practice traditional swidden agriculture to support their daily subsistence. The project was designed in consultation with stakeholders to provide assistance to local communities to secure communal land tenure and has received their prior consent for project development and implementation.

The project's initial activities have demonstrated that improved tenure could become a central outcome of REDD+ in some settings and that tenure itself may serve as a more dependable type of community benefit than direct financial payments. The development of the project is at an advanced stage and its Project Design Document is currently under assessment by the Climate, Community and Biodiversity (CCB) standards and VCS for obtaining validation and verification. In common with other REDD+ projects in the country at the project level, this project has encountered intermittent delays in obtaining validation and verification, which has led to some delays in distributing benefits to local communities and other stakeholders. These delays have led to various degrees of disappointment and fatigue with the REDD+ process in the country.

The Prey Lang REDD+ project is potentially the largest REDD+ project in Cambodia, covering a forest area of approximately 400,000 hectares and spanning four provinces: Kompong Thom, Kratie, Stung Treng, and Preah Vihear. The project is still in its early stage of development, however, as the Project Document is currently under preparation and initial interactions with stakeholders have been limited. The Forestry Administration is collaborating with Conservational International to develop a strategy to reduce deforestation and forest degradation in the area through awareness raising, strengthening of law enforcement, incentive schemes, and pursuit of official protection status.

The collective experiences of these REDD+ initiatives at the project level underscore the importance of standardizing the procedures to meet the technical specifications associated with carbon standards to ensure that current and future REDD+ projects

are developed and implemented in an efficient and effective manner. Cambodia is also in the early stages of developing a jurisdictional REDD+ program consistent with the development of current REDD pilot projects and it will be imperative to determine the manner in which that jurisdictional program will be established to accommodate each of those projects. Standardizing the procedures and developing a jurisdictional REDD+ program will present significant challenges.

In this context, the Forestry Administration (FA) received the support from the International Tropical Timber Organization (ITTO) to implement a project that responds to these challenges. The objective of the project is to advance the REDD+ program in Cambodia by building on the experiences of these REDD+ activities to standardize the procedures to meet, in an efficient and effective manner, the technical specifications of REDD+ jurisdictional standards capable of reducing the drivers of deforestation and forest degradation in the Tumring Forest in Kampong Thom province. The project also aimed to provide appropriate incentives to reduce dependence on the unsustainable use of forest resources to local communities, especially those participating in forest management activities in the Tumring Forest. Thirdly, the project seeks to provide REDD+ implementation training to strengthen the capacity of government officials and community members who are expected to assume increasingly important roles in efforts to reduce the drivers of deforestation and forest degradation. The project site in the Tumring Forest is to be considered for validation and verification under the Climate, Community, and Biodiversity Alliance (CCBA) and Verified Carbon Standards (VCS) using the innovative jurisdictional and nested REDD+ (JNR) approach.

This book presents six of the main outputs outlined in this ITTO project document, each of which is presented as five separate chapters. To establish the context for the book, Chapter 2, discussed the drivers and agents of deforestation and forest degradation in Tumring, Kampong Thom Province. Using mixed methods, this chapter found that there are 9 direct drivers of deforestation and forest degradation in Tumring. These drivers include illegal logging, commercial wood products, land clearing for commercial agriculture, charcoal production, land clearing for subsistence cultivation, new settlement, natural disaster, human-induced forest fire, and fuelwood for domestic consumption. There were 4 indirect drivers of deforestation and forest degradation occurred including limitation of law enforcement, demand for wood, land tenure and right issue, and population growth. Furniture makers, medium and large scale agricultural investors, charcoal makers, land migrants, firewood collectors and subsistent farmers were the agents of the deforestation and forest degradation in this area. To address these drivers, focus group discussions indicated 12 activities. Among them, the main themes were to improve local livelihood, enhance law enforcement on illegal logging, reforestation, and environmental education. It is expected that improving local livelihood thought different means could reduce the forest loss which was caused by local people.

Based on understanding of these drivers of deforestation and forest degradation, Chapter 3 scientifically assessed the potential emissions reduction in Kampong Thom using adjusted Forest Reference Emission Level (adjust FREL). The adjusted FREL refers to the prospective emissions above or below the default FREL, which is the emissions level determined from the past trend. Both adjusted and default FRELs provide benchmark emission levels in the absence of the REDD+ project activities. They could be used as benchmark on emissions, against which carbon emissions from the implementation of the REDD+ activities can be compared in order to assess the performance for financial support. Since FREL is developed from the past trend, it is less complicated compared to the adjusted FREL, which is based on assumptions of the future activities or planned activities in order to meet the increasing demand of growing population and economic development. There are possible causes that result in accelerating deforestation in the tropics. These causes may include but not limit to construction of Asian highway, growing demand for growing population, natural disasters and/or climate-driven water shortage, rapid increase in tourisms. Two assumptions of the future rates of deforestation in Kampong Thom province are assumed in this report – the 30% and 50% increasing rates of deforestation. Therefore, Adjusted FRELs by districts and provincial level were developed for 2006 and 2030 in all five carbon pools.

To provide context for the discussion on REDD+ in Cambodia and how the mechanism could be used to address drivers of deforestation and improve the livelihood of local communities in the project area, Chapter 4 reviewed existing REDD+ projects in Cambodia. Three REDD+ projects including Oddar Meanchey REDD+ project, Keo Seima Wildlife Sanctuary REDD+ Project and Tumring REDD+ project are specifically reviewed because they have been validated and verified to some degree. Based on the reviews, the current REDD+ projects require enormous amount of time and resources to develop. Reducing such time requirement will certainly reduce costs and frustration, especially when carbon price goes down at the time when project is validated. It is necessary that upfront financial supports are needed for REDD+ project development and implementation until the REDD+ project can generate its own finance through selling carbon credits and other commodities. It is also recommended that project developers should focus on REDD+ project activities and related investment opportunities and income streams to reduce reliance on carbon credits because of volatility of the carbon markets and international regulation.

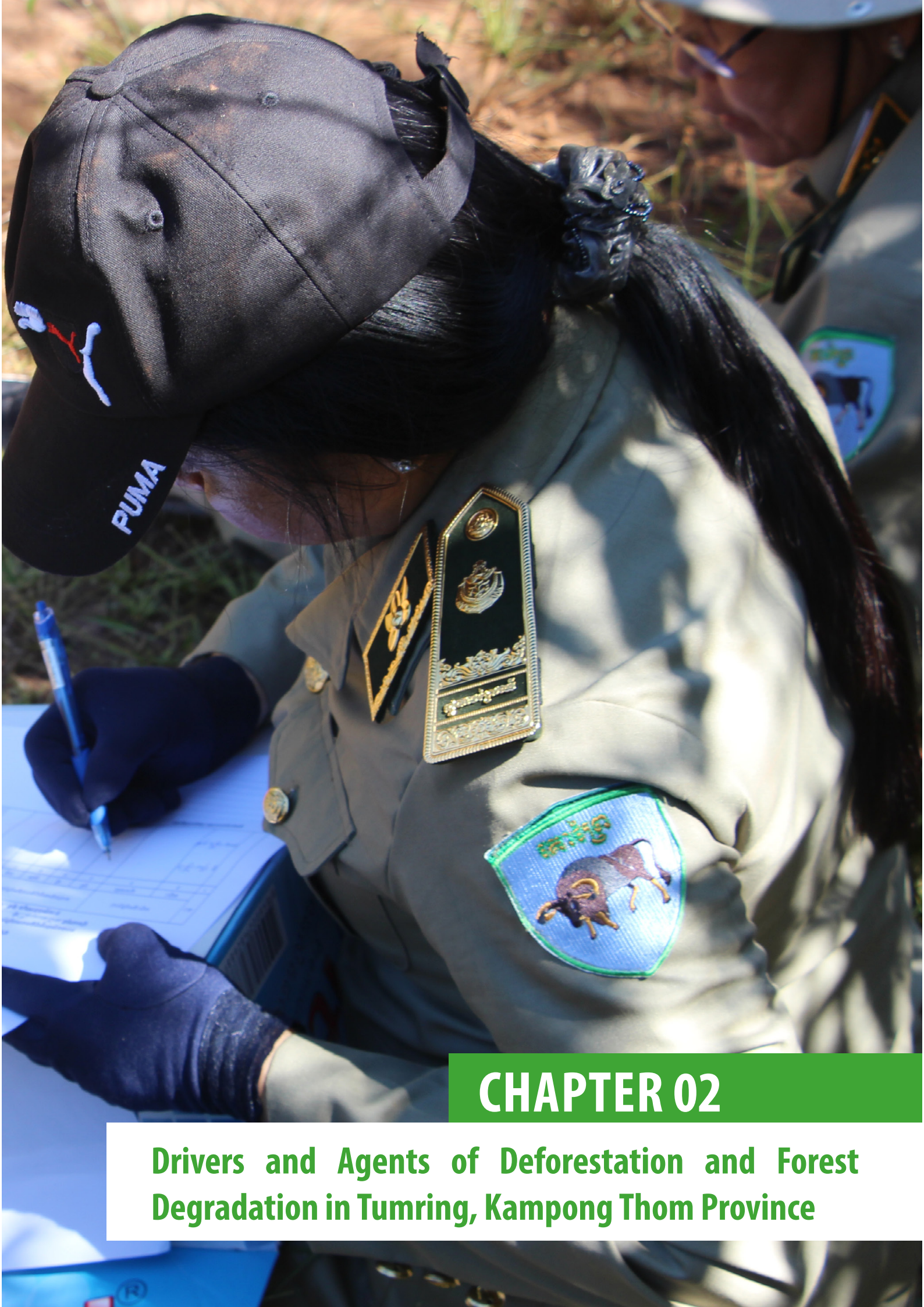
If the ITTO aims to develop a REDD+ project, there are specific technical topics that need to be discussed in addition to the technical development of the project as presented in Chapter 4. Three of these topics include safeguards information system, sustainable financing options and benefits sharing. Each of these topics are therefore presented in the subsequent chapters. Therefore, Chapter 5 presents analyses and recommendations on how to design benefit-sharing mechanism for

Tumring REDD+ Project. This chapter reviews existing benefit sharing mechanism (BSM) under Community Forestry (CF), Community Fishery (CFi), Community Protected Area (CPA) and Voluntary REDD+ Projects in Cambodia. The experiences and lesson learned from these arrangements were used to propose principles; guidelines equipped with actions to enhance government policies to address an issue of REDD+ benefit sharing mechanism in Cambodia. This chapter is divided into four sections: 1. review and lesson learn from community-based natural resource management in Cambodia, 2. review and lesson learn from REDD+ Projects, 3 propose REDD+ Fund Management Mechanism and Benefit Sharing Mechanism for Cambodia, and 4 propose recommendations to enhance national policy to promote effective, efficient and equity REDD+ benefit sharing in Cambodia.

The sixth chapter focuses on the design, implementation and monitoring REDD+ safeguards framework in the project site. This chapter has four main objectives and is structured into 5 sections, the first being an introduction. The first objective, section 2, is to take stock of literature on the latest scientific knowledge and policy guidance at national and international level pertaining to development, implementation and monitoring of REDD+ Safeguards Information System (SIS). Section 3, the second objective, conducts an assessment of SIS that has been developed by the Cambodia National REDD+ Programme to reflect on the principles, criteria and indicators proposed under this national system. The third objective, section 4, is to assess the SIS that has been developed, implemented and monitored by the Wildlife Conservation Society for the Keo Seima Wildlife Sanctuary REDD+ Project to extract lessons learned from this local REDD+ intervention. Based on observations from section 2 to 4, the final objective of this report, section 5, is to propose how a safeguards information system could be developed, implemented and monitored for Kampong Thom Province.

The seventh and final chapter focuses on commercialization and sustainable financing strategy for REDD+ in Cambodia. The chapter proposes that RGC should consider developing a national guideline for REDD+ projects to make sure that all the project based REDD+ are in line with the implementation National REDD+ Strategy, particularly REDD+ nested approach to harmonize all REDD+ projects into the national system in the future. Second, the RGC is a project proponent for all REDD+ projects in Cambodia so to reduce the brokerage fee and low down the transaction costs and the RGC should negotiate with carbon brokers to market all its existing projects rather negotiate project by project which increase the fee and cost to market REDD+ credits for each project. The benefit sharing arrangement should take into account the model which currently being implemented in KSWS REDD+ project. To manage all the REDD+ revenues from projects and result-based payment under the UNFCCC, the RGC should consider setting up the National REDD+ Fund, which could be used to channel relevant fund to specific REDD+ activities at sub-

national and project levels. This funding mechanism will ensure that revenues from REDD+ could be channel to support REDD+ activities in a timely manner. Finally, the RGC should consider the online platform for all REDD+ project to engage with the public regarding the concept of climate change mitigation through REDD+ credit offset, particularly private companies and individual who would like to offset their emissions. This is similar to the Stand For Tree platform but only REDD+ projects in Cambodia are listed.



CHAPTER 02

Drivers and Agents of Deforestation and Forest Degradation in Tumring, Kampong Thom Province

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Executive Summary

This report is part of the ITTO's project outputs designed to study about drivers and agents of deforestation and forest degradation in the Tumring REDD+ project area, Kampong Thom project. Accordingly, the appropriate activities to address these drivers are also proposed. The methodology used in this report is the mixed methods of both quantitative (questionnaire survey) and qualitative (focus group discussion). Totally, 219 families from 7 community forests in Tumring REDD+ project area were interviewed. Likert scale technique was used for designing the questionnaire survey and assess the responses. The score ranked from 1 to 5 referring to strongly disagree to strongly agree. Four focus group discussions were conducted. The total participants were 72 people. Analysis of the fieldwork surveys and group discussions suggests that there are 9 direct drivers of forest deforestation and forest degradation in Tumring. These drivers include illegal logging (with average score of 4.53 out of 5.0), commercial wood products (4.20), land clearing for commercial agriculture (4.19), charcoal production, land clearing for subsistence cultivation, new settlement, natural disaster, human-induced forest fire, and fuelwood for domestic consumption. In addition to direct drivers, there were 4 indirect drivers of deforestation and forest degradation occurred including limitation of law enforcement (4.33), demand for wood (4.15), land tenure and right issue (3.72), and population growth (3.47). Furniture makers, medium and large scale agricultural investors, charcoal makers, land migrants, firewood collectors and subsistent farmers were the agents of the deforestation and forest degradation in this area.

According to both questionnaire survey and focus group discussion, there are 12 activities that are suitable for addressing the drivers in this study area. Among these 12 activities, the main themes were to improve local livelihood (i.e. agricultural intensification and water management, financial incentives for agriculture, improving market access for agriculture products, and), enhance law enforcement on illegal logging, reforestation, and environmental education. It is expected that improving local livelihood thought different means could reduce the forest loss which was caused by local people (charcoal makers, firewood collectors, subsistent farmer). Meanwhile, local people would become a good protector of forest once they get enough support for their livelihood. Besides law enforcement on illegal logging could prevents illegal activities that caused by different agents. Furthermore, environment education will help local people to extract the benefits from forest in sustainable way.

Section I: Background

Deforestation accounts for about 17% of global greenhouse gas emissions each year, suggesting that an effective measure to reduce these emissions is to reduce or

stop deforestation (Poffenberger, 2009). Global efforts have been made to reduce global deforestation, one of which is the introduction of the REDD+ scheme or reducing emissions from deforestation and forest degradation, forest conservation, sustainable management of forests, and enhancement of forest carbon stocks. The REDD+ initiative have gained support in December 2007 at COP 13 in Bali as one option for solving the global emissions and sustainability problem by reducing the emission from deforestation and forest degradation. REDD+ is a global mechanism of the United Nations Framework Convention on Climate Change (UNFCCC), to which Cambodia is also a party. Accordingly, the Royal Government of Cambodian adopted REDD+ to practice in Cambodia in 2008. Based on latest data, the forest cover in Cambodian declined from 73.0% in 1965 to 49.5% in 2014 (Royal Government of Cambodia, 2016).

As forests are cultural, socially, and economically important natural resources, preventing further deforestation and forest degradation is always an integral part of national development policy in Cambodia. REDD+ is also important policy for realizing the overall development policies in Cambodia. Until recently, several REDD+ projects have been initiated in Cambodia as pilot projects in Cambodia prior to the actual implementation of the national REDD+ projects under the Paris Climate Agreement, which is expected to begin in 2020-2030. Tumring is one of the recently validated REDD+ projects in Cambodia, which has a total land cover of approximately 66,645 ha in the Prey Long Wildlife Sanctuary. Tumring REDD+ project area is rich in biodiversity and ecosystem service but these services and biodiversity has been threatened by deforestation and forest degradation (Wildlife Works Carbon LLC, 2017). This study was designed to investigate the drivers and agents of drivers that lead to deforestation and forest degradation in this area and to discuss the appropriate measures to address the deforestation and forest degradation problems.

Section II: Study Methods

The methods used in this study included household questionnaire survey and focus group discussion. Both household questionnaire surveys and focus group discussions aimed at assessing the perception of local people toward the drivers and agents of deforestation and forest degradation in their community and the surroundings, and their consensus on appropriate activities that could address these problems.

2.1 Questionnaire survey

There are 23 community forests with 5,267 families in project area. However, due to the limited time and budget constrain, only 7 community forests were selected to do household survey. These community forests include Veal O Khdey, Prey Cheam Smach, Prey Naktala, Prey Kbal Daun Tey, Prey Kbal Ou Kror Nhak, Beong Rolom, and

Andoung Pring from 16 August to 21 August 2018. These communities are purposely selected to locate in or near the areas where highest rate of forest cover change or most vulnerable to future forest loss is observed (see the map in figure 1).

The sample size of household (HH) survey was calculated by using this following formula:

$$n = \frac{N}{1+\mathrm{N}(\mathrm{e}^2)} \quad (1)$$

Where: n = estimated sample size for the HH survey interviews
N = total household population in IITO project site (5267 families)
e = accepted margin of error (7% or 0.07; 93% confidence level)

According to this formula (1), total households to be interviewed were 197. To avoid any errors of questionnaires which could reduce the numbers of useable samples, around 10% more of total sample size was employed. Therefore, as the result, there were 219 household interviews, all of which were useable. Table 1 shows the numbers and percentages of household surveys conducted in each community forest.

Table 1: Number and percentage of household interview in selected community forests

Community Forest	Frequency (N=219)	Percentage (%)
1. Veal O Khdeyy	31	14.2
2. Prey Cheam Smach	31	14.2
3. Prey Naktala	32	14.6
4. Prey Kbal Daun Tey	31	14.2
5. Prey Kbal Ou Kror Nhak	32	14.6
6. Beong Rolom	29	13.2
7. Andoung Pring	33	15.1
Total	**219**	**100**

2.2. Focus group discussion

Four focus group discussions were conducted with local people in Prey Cheam Smach, Prey Naktala, Prey Kbal Ou Kror Nhak, and Prey Kbal Daun Tey. The total number of participants were 72, including 39 females. Focus group discussions were conducted on 28th and 29th August 2018.

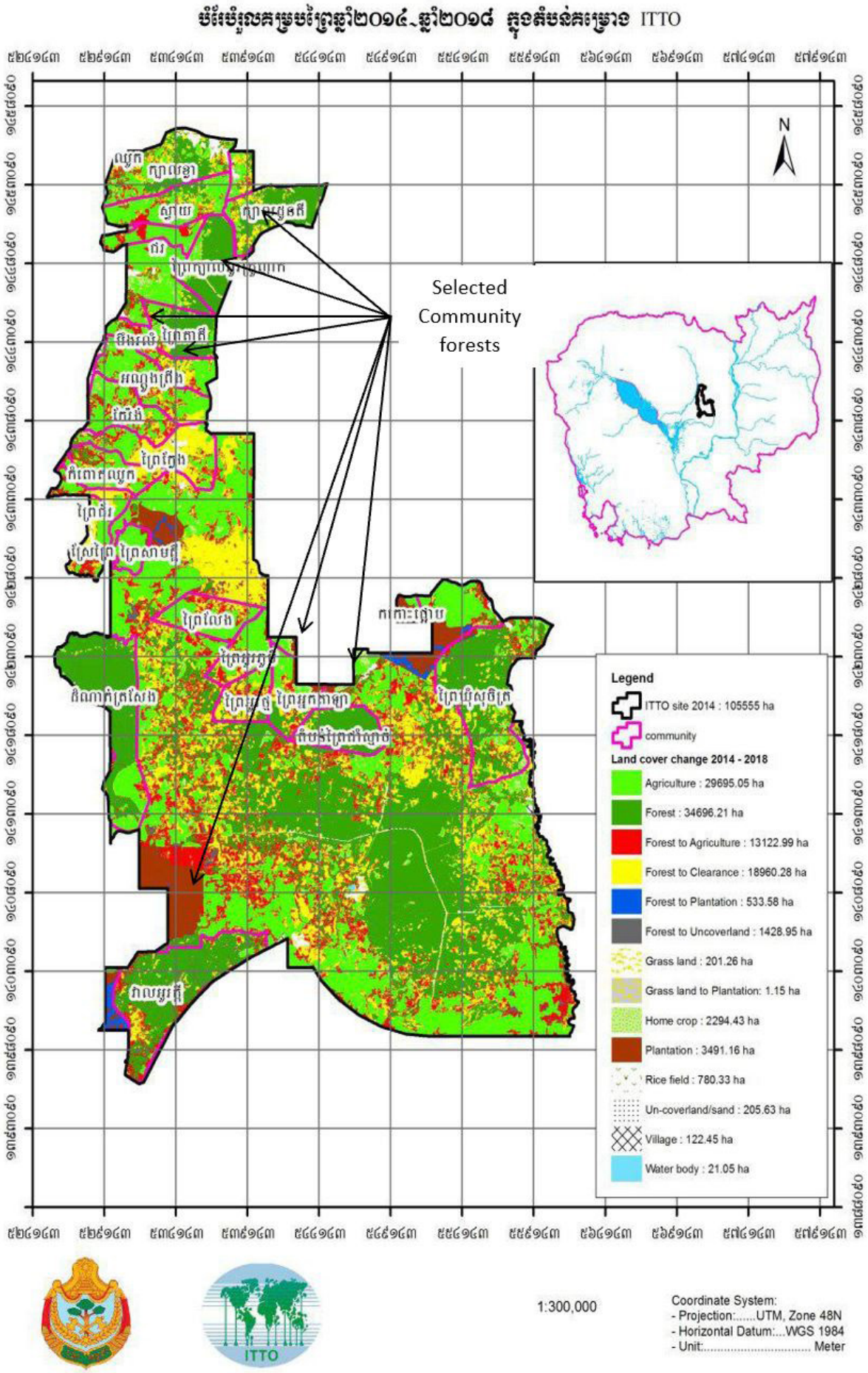
Table 2: Number and percentage of participant in focus group discussion

Community Forest	Numbers of Participants	Percentage (%)
Prey Cheam Smach	18	12
Prey Naktala	18	6
Prey Khal Ou Kror Nhak	19	13
Prey Kbal Daun Tey	17	8
Total	72	39

Both questionnaire survey and focus group discussion were conducted to find out the drivers and agents of deforestation and forest degradation, and to discuss the consensus of the local communities on appropriate activities for addressing the drivers and their agents. Questionnaire survey was designed according to Likert scale format that tends to find out the degree of agreement from local people toward drivers and agents of deforestation and forest degradation as well as suitable solution for their region. Moreover, focus group discussions were used to support the answer from household survey in order to make the result more accurate. According to Likert scale, the score ranked 1, 2, 3, 4 and 5 correspondingly refer to strongly disagree, disagree, neutral, agree and strongly agree.

Therefore, the drivers and agents of deforestation and forest degradation with a score from 3 to 5 are accepted as the drivers and agents of forest loss in study areas. However, the activities (i.e. agricultural intensification, law enforcement on illegal logging and community forest management) to address the drivers of forest degradation and deforestation which are applicable for the project area were based on the discussions from the results of survey and focus group discussions. A few activities (i.e. environmental and social impact assessment for development proposal, build infrastructure and agroforestry) which got the score more than 3 were excluded from the study due to some constraint and unsuitability to the area. The following section is described the results and findings with the explanations.

Figure 1: Map of project area and selected community forests for household survey



Section III: Results and Discussions

3.1. Drivers of deforestation and forest degradation in project study area

Drivers of deforestation and forest degradation can be grouped into two types namely, direct drivers and indirect driver (underlying causes). Direct drivers refer to activities that directly impact on forest cover which may be caused by human choice of land use (Gautam, 2013). Underlying causes can be seen as complex economic, technological, social, political, and cultural variables that can contribute to the change of forest cover (Gautam, 2013).

3.2. Direct Drivers

Results from interviewing showed that main direct drivers which have led to degradation and deforestation are illegal logging and unauthorized encroachment, commercial wood products, and land clearing for commercial agriculture. Besides, these three main direct drivers of deforestation and forest degradation, there are six more which can contribute to the loss of forest but in less scale comparing to the previous three. These include (i) charcoal production, (ii) land clearing for subsistence cultivation, (iii) new settlements/migration, (iv) natural disaster (drought and storm), (v) human induced forest fire and (vi) fuelwood (domestic usage).

Illegal logging and unauthorized encroachment: The rating score for any of these drivers toward deforestation and forestation was very high (4.53). Among 97.7% of 219 respondents agreed that illegal logging was the main reason for forest degradation while unauthorized encroachment was the main reason for deforestation in their respective community forests. According to focus group discussion, participants reported that illegal logging was the main concern for forest degradation and eventually loss of forest cover in their community forests and surrounding, and it would continue until all forests are gone. Respondents observed that, as there is almost no forest available nearby their community forests, their community forests are increasingly being threatened by the unauthorized encroachment by the outsiders. The community forests are being encroached and the trees are being cut by both local community and outsiders due to the lack of alternative sources for their daily subsistence and livelihood.

Commercial wood products: This driver refers to organized logging activities involving exporting wood by trucks to outside community. The rating score for this item was 4.20, about 87.7% of respondents perceived that commercial wood products were the main driver for the forest degradation and eventual loss of forest cover in their respective communities. According to information from focus group discussion, a few men had witnessed that there was the export of woods from their community by trucks. As these groups of logger had little knowledge about tree felling, their tree

felling activities caused huge damages to residual stands and therefore result in rapid forest degradation and reduction of forest cover.

Land clearing for commercial agriculture: The rating score for this item was 4.19, among 80.4% of respondents viewed that it was the major driver of losing forest cover in their respective communities. Land economic concession, which was offered to investors to grow cassava, rubber tree and cashew nuts previously caused huge reduction of forest cover because land economy concession was located in the forests. The amount of forest lands were leased to private companies in the names of development, but before starting the development of agricultural products, the private companies already cleared the forest land and sold the wood.

Charcoal production: The score for this driver was 3.60, among 66.7% of respondents believed that charcoal production contributed to forest deforestation and forest degradation in their region. The charcoal kilns are constructed for producing charcoals for commercial use in the project study site such as in Ou Thmor and Ou Phoum.

Land clearing for subsistence cultivation: The rating score for this driver was 3.54, among 55.2% of respondents were in the opinion that the subsistent cropping of local people contributed to forest clearing. In order to grow more crops for agricultural purpose, local people had cleared forest land wherever they could access.

New settlement: Score for this driver was 3.44, among 47.5% of respondents rating it as a driver for deforestation and forest degradation. The new settlement occurred through the flow of migrants to the community and though the increase of household family members.

Natural disaster: This driver got the score of 3.31 out of 5 suggesting that it was also one of the drivers of forest degradation and deforestation in the region. About 45.2% of respondents provided the agreed response and proofed its impacts on community forest. For example, drought and storm in 2016 caused many trees to fall down and eventually died in Prey Kbal Ou Kror Nhak community forests.

Human-induced forest fire: Score for this item was 3.24, among 45.7% of respondents agreed that it was the driver of forest loss. Based on the score and the response from local people, human induced forest fire was a recent concern for forest loss although it occurs occasionally. Forest fire was induced by human as means for land clearing for agriculture and for wild animal hunting. Fire was sometimes out of control, and so it caused huge destruction of forest cover and related biodiversity.

Fuelwood for domestic consumption (local consumption): This driver got average score of 3.21. Based on the focus group discussion, local people confirmed that there was no electricity available for them for use as cooking energy, lack of gas stoves and

gas itself was so expensive that they could not afford to use. Using fuelwood for daily cooking is inevitable for them. When wood is very needed for daily consumption, to various degrees it would affect forest degradation and deforestation. A study in Kampong Thom province found that per capita wood fuel consumption rate was approximately 200 Kg of wood per year (Neth, 2004). Although respondents tend to consider this driver as less important, 100% of the Cambodian local population depend on use wood from the nearby forests for daily cooking energy. This driver may be considered as an important driver that needs to be addressed from different activities.

3.3. Indirect Drivers

Limitation of law enforcement: This driver got average score of 4.33. About 96.8% of respondents viewed that the lack of law enforcement was the main indirect driver for forest degradation and deforestation in their region. Based on focus group discussion, participants viewed that the limited capacity of people who are involved in forest protection such government officers and forest rangers in arresting the illegal loggers contributed to forest loss. The rangers normally went to the forest twice or three times per week; therefore the illegal logging occurred the other days of weeks. In addition, as area of forest community is commonly large; for example, Prey Kbal Ou Kror Khak (1,593 ha), Veal O Khdey (4,450 ha),and Prey Kbal Doun Tey (1,803 ha), rangers could not patrol the whole areas. Illegal loggers took this opportunity to fell trees in forest, where rangers are not present.

Demand for wood: This driver had average score of 4.15 and 84.5% of respondents perceived that the demand of woods results in higher wood price and therefore wood is the main target of illegal loggers. This driver contributed to forest degradation i.e. gradual loss of high valuable timber species. Based on focus group discussion, demand for wood was indirect driver, which significantly triggered to forest loss. Participants stated that the high price of wood and the huge demand of woods made the poor cut the trees to support their daily needs, and made the rich cut the trees to feed their greed. Participants also viewed that if there was no buyer, there would be no seller. Then, without buyer and seller of woods, there would be no illegal logging for commercial purpose.

Land tenure and right issue: Score for this indirect driver was 3.72. About 70.7% of respondents agreed that land tenure and right issue contributed to forest clearance. Local people tend to get more and more land for family purpose and for selling; therefore, they had to clear the accessible forest to get the land. Furthermore, some local people cleared the forest land which belonged to community to grow temporary crop and probably claim the land later.

Population growth: this indirect driver got the score of 3.47. About 50% of local believed that increase of population in the study area was due to the rapid growth

and influx of land migrants and this driver put more pressures on forest land use. The growth of migrants made local residents clear the forest land to sell for the new comers or either migrants cleared the forest for settlement and agriculture.

3.4. Agents of deforestation and forest degradation in project area

The survey found that the main agents of forest degradation and deforestation was furniture makers (4.16), medium and large scale agricultural investors (3.99), then follow by charcoal makers (3.55), immigrants (3.39), firewood collectors (3.25), subsistent farmers (3.14). The table 8 shows the level of agreement of local people toward the agents of deforestation and forest degradation and table 9 shows the activities of the agents that contributed to forest loss. Result from questionnaire surveys and focus group discussion also indicate agents that did not affect deforestation and forest degradation are describing in Annex 2.

3.5. Appropriate REDD+ activities to address drivers of deforestation and forest degradation

There are various activities that may be introduced to address the drivers and their agents of deforestation and forest degradation. Using questionnaire surveys and focus group interviews, there are the proper solutions as listed below which the value was higher than 4:

Fuel wood efficient cookstoves: The score for this activity was 4.79 because the majority of the local people use for daily energy need. About 93% of respondents perceived that fuel efficient cookstoves could reduce the fuelwood consumption. There are various kinds of fuel wood cookstoves (i.e. Laotian cookstoves)which can decrease wood used by 20% to 60%. However, to make this practice become effective, there is the need of intervention such as making fuel wood efficient cookstoves available for local people with the good quality to use.

Financial incentives for agriculture: the score for this activity was 4.47. About 91.8% of respondents viewed that this activity would reduce the illegal logging by local people because respondents used to face many problems in the past such prolonged drought in the rainy season, uncertainty of harvesting due to natural hazards, the variation in weather patterns, and fluctuations in crop price. The worst was that at the beginning of the season, they had to borrow money from others to do agriculture, but the bad harvesting or low price of agricultural products made it impossible for them repay the debt to the borrowers. This was also the reason that they had to find alternative sources of incomes by felling trees and sell or clear the forest land for selling. About 81% of respondents were farmers and therefore with financial incentives for farming, it would encourage them to focus on working on their respective farm rather than go

to forests and fell the trees. Therefore, agriculture finance incentives for local farmers are necessary.

Law enforcement on illegal logging: Average score for this activity was 4.40. About 95.9% of respondents viewed that to put law into practice, illegal loggers should be punished to the highest degree of punishment so that illegal logging activities would be reduced. Based on the survey and focus group, illegal logging and encroachment have been the main cause for forest loss in the region. It is suggested that enforcing the laws and related regulations is urgently needed in order to reduce deforestation and forest degradation.

Improve market access for agriculture products: Average score was 4.33. There are 94.9% of respondents who agreed that this activity would be able to address the forest degradation and deforestation. According to focus group discussion, they believed that local people was the main agent for almost every driver of deforestation and forest degradation. They seem to argue that their activities were justified by the need to fulfill their daily livelihood needs. This is because local farmers' crop calendar is dependent basically on rainfalls. If more rains, farmers can produce for crop production but their products can not access to market, forcing them to sell their products below the breakeven point as farmers do not have any mean to store their products longer. As 81% of respondents are famers, therefore, improving market access for their agricultural products is very necessary to release pressure on logging or clearing of forests. In addition to government interventions to provide better access to markets, development of a social enterprise for selling their products online or to ecotourism visitors could also connect their products to responsible consumers.

Community forest management: Average score for this activity was 4.24 out of 5 for this activity. This activity refers to a coordinated effort to manage the forests, on which they depend on forest daily needs. About 95.4% of respondents was in the opinion that this activity is practical for addressing forest degradation and deforestation. Based on focus group discussion, participants strongly believed that community forest management could protect the remaining forest. They have witnessed the benefit of community forest management by themselves. As experience told, the forest lands outside community forest were already converted to agricultural land and cleared for different purposes; but the remaining forest can only be found in community forest. Committee for such community management may be formed and specific roles and activities of the individual members may be discussed and assigned.

Reforestation/tree plantation: Average score for this activity was 4.14. About 87.7% of respondents viewed that reforestation or tree plantation would be able to address the drivers of deforestation and forest degradation such as illegal logging, illegal encouragement, natural disaster and the use of wood for commercial purpose

or domestic usage. Reforestation is viewed as an important activity for increasing forest cover.

Environmental education on forest management: Average score for this activity was 4.14. There were 89.9% of respondents who agreed on it as a solution for reducing the following drivers: forest fires, illegal logging, land clearing without government permission. Education about the sustainable use and harvest of forest and non-forest products such as wild animals, wild fruits, wild vegetable, mushrooms, potatoes, honeys and bees, resin, bamboo shoot, rattan, herds, traditional medicines, and forest products can form an important activity for reducing deforestation and forest degradation. Therefore, the environmental education on how to get all the necessary forest food and products in sustainable way is essential for local people. For example, in order to get honeys, local people use smoke to chase away thousand bees from their beehives. Therefore, with the careless of bee hunters by leaving behind fire or smoke, it could create forest fire. Furthermore, sustainable exploitation of wood for local use on a sustainable manner can save a lot of young trees and the nearby tree. Therefore, the environment education on forest management can give local people a more broader picture of real forest management and its long-term benefits, which eventually can reduce forest fires and forest clearing.

Tenure and rights: Average score for this activity was 4.09. About 89.5% of respondents agreed that land tenure and rights could reduce land encroachment and land clearing drivers. Tenure is a term which uses to describe the rules of how people, communities and others gain rights to land, water, fisheries, and forest including access rights, management right, and alienation rights (The Interlaken Group the Rights and Resources Initiative (RRI), 2015). With the land tenure, local people believe that it can reduce the illegal forest clearance and encroachment from the community. Since there is no specific land tenure, the residents tend to enlarge their land as much as possible. Moreover, without recognition of customary right on their land, they were afraid of losing their remaining land, so they seem to use the land in unsustainable way to extract the maximums benefits of land. Then when their land becomes lack of fertilizer, they try to look for the new fertile land from forest area. Tenure and rights is the good measurement to reduce deforestation and degradation that is caused by land tenure and right issues and the problem of forest clearance for subsistent cultivation.

Agricultural intensification: Average score for this activity as 4.02. Approximately 86.8% of respondents perceived that agricultural intensification would reduce the forest clearing for agriculture because it could increase more productivity and incomes from the same size of lands as same land can be cultivated more than once time independent from rain season. Intensification of agriculture refers to a reduction in fallow, higher use of organic fertilizer to offset declining soil fertility, and investments

in mechanization and irrigation system (thereby increasing number of times for crop cultivation), which potentially offset the negative impact of population growth on farm size and can maintain or increase per capita food production (Binswanger-Mkhize & Savastano, 2017). Depending on locations, building water tanks and/or creating water reservoirs to store the water for year-round use can certainly increase crop production and improve health of local people.

Restore the degraded forest: The score for this activity was 4.02. This activity refers to enrichment planting on degraded forest land in the community forests. About 81.7% of respondents agreed that restoration of degraded forest could solve the problem of forest degradation. This method is suitable for the area of illegal logging, the forest that affected by drought and storm, and the forest loss due to human-induced forest fire in the project site.

Good land use planning: Average score for this activity was 3.85. 82.6% of respondents believed that the good land use planning could prevent land encroachment and clearing. A good land use planning could be achieved if local communities are consulted and approved the planning activities. Local people are concerned that their traditional land use and practices should be considered in any land use planning. This is to ensure the benefits for local people from development, and mitigate the negative impact on environment, especially to avoid unplanned deforestation and forest degradation.

Rooftop solar energy: Although local people's perception of rooftop solar energy is still low, use solar energy for meeting daily needs of energy by farmers at affordable prices can reduce the money spent by farmers for battery charges. Price of rooftop solar energy is declining day by day and with the Paris agreement for climate change mitigation and adaptation, introducing solar energy on farmers' owned rooftops can be an important that could reduce farmers' spending (therefore, farmers can use their remaining budget for other needs such as education for their children), reliance on wood for daily energy needs, and farmers' time for bringing battery to charge in the battery charging service providers.

Section IV: Conclusion and Recommendations

As evidence from survey and focus group discussion, the direct drivers that result in forest cover changes in the study area were illegal logging and unauthorized forest encroachment, commercial wood products, and land clearing for commercial cultivation (large economic land concession). In addition, there were six drivers of deforestation and forest degradation, but they were not serious as perceived by local people. They are charcoal production, land clearing for subsistent agriculture, new settlements, natural disaster (drought and storm), human induced forest fire, and

fuelwood for domestic usage. Questionnaire surveys and focus group discussions also reveal about the indirect drivers of deforestation and forest degradation. These indirect drivers were the limitation of law enforcement, high demand for wood, lack of land tenure and right and population growth.

The main agents of deforestation and forest degradation were furniture makers, medium and large scale agricultural investors, migrants and local people including charcoal makers, firewood collectors, and subsistent famers. The appropriate activities that would be accepted by local people to address the drivers of deforestation and forest degradation were to fuelwood efficient cookstoves. offer alternative sources of crop production through agricultural intensification and better management of water resources, financial incentives for agriculture, improve market access for agriculture products, law enforcement on illegal logging, community forest management, reforestation, environmental education on forest management, tenure and rights, agricultural intensification, restore the degraded forest, and good land use planning. Creating alternative sources of energy such as the introduction of rooftop solar energy could also reduce payment by farmers for energy use because current practices of battery charge costs farmers about five times of the energy price at the major cities in Cambodia.

Community forest management is the prominent approach for forest management and conservation. Therefore, this Tumring REDD+ project which implements within the area of community forest could be considered as more effective comparing to the REDD+ outside community forest. The REDD+ plus will not only enhance the effectiveness of community forest management and reduce emission from deforestation and forest degradation but also provide the alternative income for local people to support livelihood and sustain forest via carbon finance. Meanwhile, to make Tumring REDD+ project implementation more successful, there are some activities which need more intervention and collaboration from national and sub national partners

- Policy makers could be partial of successful of REDD+ implementation by avoiding planned and unplanned deforestation related development in REDD+ project area.
- Local livelihood support on improving market access for agricultural, intensification of agriculture and financial support on related agricultural activities is very important for local people in REDD+ area, especially the early stage of REDD+ development.
- Inform community forest members who live in REDD+ project area about all the processes of REDD+ and current stage of REDD+ project. Also, being transparency is important to sustain the support from local community.

CHAPTER 03

Development of Adjusted Forest Reference Emission Levels for Kampong Thom Province

Chapter 03

Development of Adjusted Forest Reference Emission Levels for Kampong Thom Province

Executive Summary

Adjusted Forest Reference Emission Level (adjusted FREL) is the prospective emissions above or below the default FREL, which is the emissions level determined from the past trend. Both adjusted and default FRELs a benchmark emission level in the absence of the REDD+ project activities. They are used as benchmark on emissions, against which carbon emissions from the implementation of the REDD+ activities can be compared in order to assess the performance for financial support. Since FREL is developed from the past trend, it is less complicated compared to the adjusted FREL, which is based on assumptions of the future activities or planned activities in order to meet the increasing demand of growing population and economic development. There are possible causes that result in accelerating deforestation in the tropics. These causes may include but not limit to construction of Asian highway, growing demand for growing population, natural disasters and/or climate-driven water shortage, rapid increase in tourisms. Two assumptions of the future rates of deforestation in Kampong Thom province are assumed in this report – the 30% and 50% increasing rates of deforestation. Accordingly, Adjusted FRELs by districts and provincial level were developed for 2006 and 2030 in five carbon pools.

Section I. Introduction to Adjusted FREL

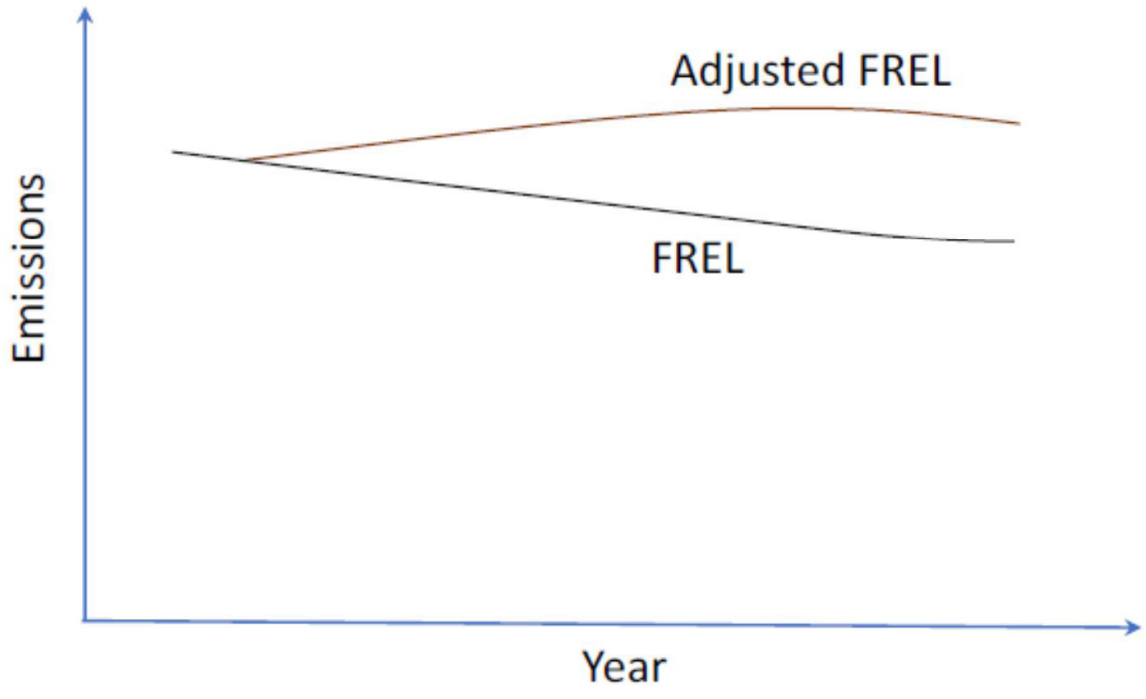
This report starts with a brief introduction, method, results on forest cover change and carbon stock changes, results on adjusted FRELs for Kampong Thom province by districts. Of particular focus, the report also focuses on some possible and potential causes of future acceleration of deforestation in Cambodia as well as in Kampong Thom province. Construction of Asian Highway Networks and other facilities to support such construction is likely the major cause of deforestation acceleration as more remote area can become quickly accessible. Natural disasters, growing population, and rapid increase of tourists would also accelerate future deforestation in Kampong Thom province.

Adjusted FREL refers to the adjustment of future emission level to ensure the accuracy of the assessment of the emissions because such level is important for measuring the emission reduction performance. Adjusted FREL can be lower or higher than the FREL determined from the past-trend deforestation (i.e. retrospective approach). Adjusted FREL can be lower in the event that future deforestation slows down due to shrunk forest cover or rate of deforestation slows down. Sasaki et al. (2016) estimated the FRELs in Cambodia every five years and they found that FRELs continued to decline as the area of forest cover in Cambodia declined even though the rate of deforestation remained unchanged. In most cases, however adjusted FRELs are likely to be higher than the past-trend FREL because such adjusted FRELs could ensure that

implementing the REDD+ activities could actually result in emission reductions, which can be translated into financial support.

Not many countries, provinces, or districts can claim for the adjusted FRELs. Claimers need to present convincing evident or justifications about the possibilities of increasing deforestation in the future in comparison to the past-trend deforestation. There are possibilities for claiming for adjusted FRELs. Claimers may present cases that their countries have experienced rapid economic or population growth in the past recent years, which was driven by the change in political landscape. For example, a country, which recently was lifted off from the international sanction, or a country that has changed from one political regime to another political regime may expect more support, more investment, more injection of funding from inside and outside their countries. Such investment could accelerate economic development, infrastructure development and population growth, and therefore demand for forest resources for multiple purposes (timber, land clearing for industrial crops, resettlement, etc.) is likely to increase, putting pressure on forests. If deforestation and forest degradation are accelerated, more emissions are also expected and thus FREL becomes higher. In addition to economic and population growth, countries or provinces or districts that have been devastated by natural disasters such as floods, drought, forest fires and/or other forms of natural disasters could also be eligible to claim for adjusted FREL. This is to ensure that REDD+ activities can result in emission reductions to some extent, except in the areas, where such disasters occur. Figure 1 shows the difference between FREL and Adjusted FREL.

Figure 1: Difference between FREL and Adjusted FREL



Section II. Study Methods

2.1. Forest Cover Changes

Forest cover, cover changes (activity data), carbon stocks, and emission factor are same as that used in the previous report on default FREL in Kampong Thom province. An analysis of forest cover was conducted at commune level according to 14 forest categories in Kampong Thom province. Under the current trend, total forest cover in Kampong Thom province was 776,220.9 ha in 2006 and 562,383.4 ha in 2016, losing about 21,383.7 ha annually or about 2.8% per year between 2006 and 2016. Evergreen forest lost the most at about 4.9% per year, followed deciduous forest at 4.3%. Over the same period, area of rubber plantation rapidly increased from just 41.6 ha in 2006 to 77,831.2 ha in 2016. Highest loss of forest cover is observed between 2010 and 2016, during which Kampong Thom province lost about 4.4% per year. Forest cover changes by categories and districts between 2006 and 2016 are provided in Annex.

Changes of forest cover vary from one district to another. Santuk annually lost 8,133.9 ha and Sandan 6,293.7 ha, Stoung 2,867.2 ha between 2006 and 2016. In percentage terms, Santuk annually lost 4.2%, Baray 4.0%, Prasat Sambour 3.9%, Stoung 3.2%, while Krong Stueng Saen experienced increase in forest cover at 11.4% per year. This increase was due to increase of wood shrub (from 1,349.2 ha in 2006 to 3,618.8 ha in 2016). Krong Stueng Saen has only two categories of forest cover, namely wood shrub and flooded forests. Between 2006 and 2016, Kampong Thom lost 21,911.5 ha year-1 or about 2.8%. Concerning carbon stocks in all forest cover categories and emission factors in all five carbon pools were obtained from different sources. Where data of a particular forest category is not available, data from the nearby countries with similar ecological and climatic characteristics were used. Annex for Chapter 3 presented these estimations.

2.2. Default FRELs for Kampong Thom province

As reported in early report, default FREL for Kampong Thom province is calculated using the following steps. Refer to previous report for detailed description on forest cover and carbon stocks changes and sources of data.

Default FREL for districts (j)

$$FREL_j(t) = \sum_{j}^{14} CE_{i,j}(t) \qquad (1)$$

CEi,j carbon emissions in forest cover i in district j ($MgCO2\ year^{-1}$)

Default FREL for Kampong Thom
Total FREL or default FREL for Kampong Thom is therefore

$$FREL_{default}(t) = \sum_{j=1}^{8} FREL_j(t) \qquad (2)$$

Carbon gain due to increase in forest area or carbon sequestration in district level are derived by

$$RM_j(t) = \sum_{i=1}^{14} CI_i(t) \qquad (3)$$

Total carbon sequestration (gains or removals) for Kampong Thom province are therefore

$$RM_{kthom}(t) = \sum_{j=1}^{8} CI_i(t) \qquad (4)$$

By subtracting RM from FREL, the forest reference level (FRL) for each district and total FRL for the whole province of Kampong Thom can be estimated. FRL provides an indication of the magnitude of net carbon emissions in the province, but financial incentives are provided for carbon credits from a reduction in carbon emissions below the FREL or from carbon sequestration (i.e. enhancement of forest carbon stocks) through regrowth, enrichment planting, or planting. By definition and eligibilities, afforestation and reforestation are not part of the REDD+ scheme.

2.3. Adjusted FRELs for Kampong Thom province

Until recently, there is no fixed rule or guideline on how to determine the adjusted FREL. One of the possible options is to use the default FREL as a basis for comparison. In this report, Adjusted FREL for Kampong Thom can be estimated by

$$FREL_{adjusted}(t) = FREL_{default}(t) \times (1+\propto) \qquad (5)$$

Alpha is the adjusted factor, ranging from 0% (no adjustment) to 100% (or 100% more emissions than the default FREL or more deforestation is expected if no implementation of REDD+ activities). Two scenarios of alpha are considered for this report – the 30%

and 50% increase of deforestation compared to that of the past-trend forest cover. Note that the past-trend forest cover was the base for development of the default FRELs for all districts in the province. Although information of development planning is very limited in Kampong Thom province, possible causes of future acceleration of deforestation could be discussed with reference to experiences elsewhere in the tropics. There are many factors could badly affect future forest cover and related carbon stocks and emissions in the province.

2.3.1. Development of ASEAN Highway

Cambodia has a total road network of about 47,207 km, including national and rural road network. Cambodia also has a total railroad of 652 km. Fast economic development and population growth in Cambodia and in the region, more and more road become crowded. Therefore, larger roads are being built or under planning. Construction of highway has been blamed for the causes of rapid deforestation elsewhere around the tropics (Godar et al. 2012 Barni et al. 2015) because it connects remote forests or undisturbed forests to many actors who are involved in illegal logging, clearing of land for claiming for ownership for sales later.

Under the Intergovernmental Agreement on Asian Highway Network, 3 Asian highway crossings are planned (AH1, AH11, and AH21 roads). Total length for all these three roads is about 1,935.8 km connecting Cambodia to Vietnam, Thailand, and Lao PDR (Ministry of Public Works and Transport, 2015). Although specific data was not given, construction of these roads will be in expenses of natural forests and these natural forests can be easily accessed once road construction is completed. Therefore, it is expected that more forest cover is lost during the upcoming years compared to the past trend of forest cover. This is why more deforestation (alpha) is likely to increase.

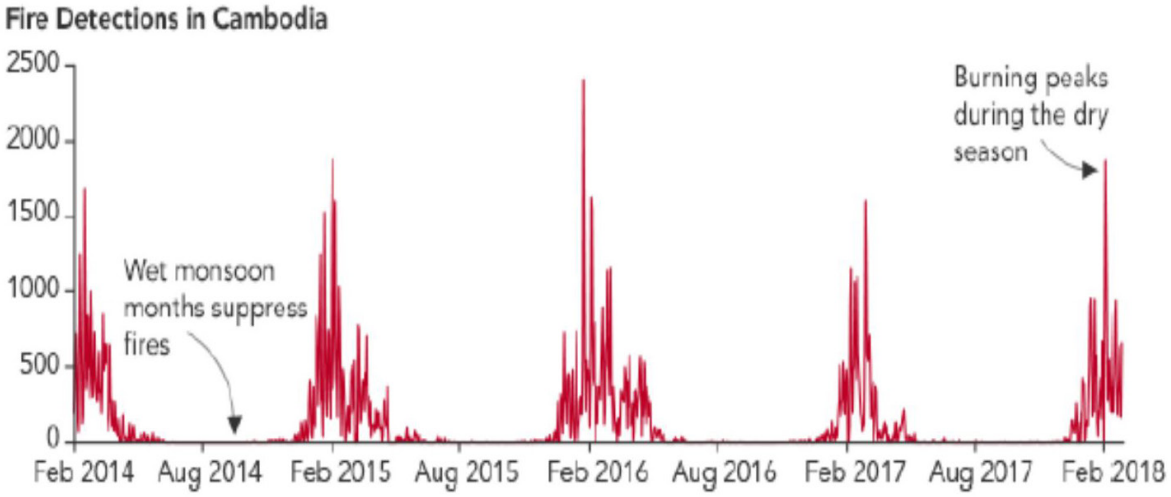
2.3.2 Population Growth

Demand from the growing population for various needs has also contributed to the acceleration of the loss of natural resources, especially forests. Previous studies have shown direct linkages between deforestation and population growth (Michinaka et al. 2013, Tsujino et al. 2019, Richards and Friess 2015, Gillet et al. 2016). In Cambodia, almost 100% of the rural population depends on fuelwood for daily energy needs such as for cooking, water boiling, making smokes to protect their cattle from insects. Some reports suggest that local people use about 3,000 kg to 10,000 kg of fuelwood per household annually depending on the size of the household. In addition to fuelwood, land is also needed to plat rice and other crops to meet the need of growing population. Overall population growth in Cambodia is 1.8% and total population is 16,562,416 in 2018. Currently, Kampong Thom has a total population of about 677,260 in 2019 and the average household per family is 4.4 people.

2.3.3. Natural Disasters

Natural disaster caused by wildfires, human-introduced fires, floods, disease outbreaks, climate change can accelerate deforestation. As deforestation continues to occur, more natural disasters are increasingly expected but how such event would occur is still difficult to predict. Every year from January through March, natural fires spread across Southeast Asia, especially at locations containing deciduous forests. In Kampong Thom, there is deciduous forest. NASA estimated that fires are usually intensified in February and data from 2014 and 2018 suggest that there are about 2000 fire spots detected in Cambodia in February alone (Figure 2). As the province is still facing rapid deforestation, it is likely that deforestation would be accelerated during the implementation period of the Paris Agreement. Although it is still unclear how natural disaster could be an exceptional case for achieving emission reductions or removal, it would be necessary for the province to prepare for such event, and thus it would affect the default FREL. With adjusted FREL, it could ensure that the province can achieve emission reductions in order to be eligible for performance-based financial support.

Figure 2: Fire detections in Cambodia from February 2014 to February 2018.



Sources: *NASA (earthobservatory.nasa.gov)*

2.3.4. Increase in Tourisms

Although increase in tourists could provide additional incomes to local people, increase in tourists also leads to increasing demand for infrastructures such as hotels, restaurant, road networks, and open more access by both local and foreign tourists to expose to the new forest locations, where more deforestation is likely to occur if there is no enforcement mechanism. Tourist arrival in Cambodia increases about 12% annually, to about 6.2 million in 2018. The number of tourists is expected to increase to 15 million by 2030. In 2018 alone, tourism sector generated a total revenue of USD

4.35 billion, increasing 19.8% in revenues compared to that in 2017. In the second half of 2018, international tourists visiting one location in Kampong Thom province – the Sambor Prei Kuk temple (a world heritage site) increased 67% while local tourists increased tenfold.

Due to limited data and for the sake of calculating adjusted FREL, alpha is assumed to be at 0.30 or 30% increase in deforestation and 0.50 or 50% increase distributed evenly by districts, where past-trend deforestation is observed. This assumption needs to be used carefully because the rates of future deforestation are difficult if not impossible to predict with certainty.

Section III. Forest Cover and Carbon Stock Changes in Kampong Thom Province

3.1. Forest Carbon Stocks Changes

Changes of forest cover result in changes of forest carbon stocks in the province. Evergreen forest had the highest carbon stocks followed by deciduous forest, wood shrub, forest regrowth, and semi-evergreen forest. Carbon stocks in evergreen forest declined to 38.9 million MgC (38.9 TgC) in 2016 from 75.6 TgC in 2006, losing 36.7 TgC or about 3.7 TgC (4.9%) annually over the same period. Deciduous forest declined from 14.3 TgC in 2006 to 8.9 TgC in 2016, losing 3.8% per year (Table 1). Flooded forest increased from 3.6 TgC in 2006 to 4.9 TgC in 2016. Rubber plantation experienced the increase of carbon stocks rapidly from just 0.6 TgC in 2006 to 5.9 TgC in 2016 at a rate of 58.6%.

This suggests that some part of the deforested lands was converted to rubber plantation. The total carbon stocks in all forests in Kampong Thom province was 128.8 TgC in 2006 but declined to 81.3 TgC in 2016, losing 4.8 TgC per year over the last ten years at a rate of 3.7% per year.

Table 01: Carbon stock changes in Kampong Thom by forest categories (2006-2016)

Categories	2006	2010	2014	2016	2006-2016 (per year)	
	(MgC)	(MgC)	(MgC)	(MgC)	(MgC)	(%)
Evergreen forest	75,608,766.8	72,253,155.5	44,058,684.4	38,888,036.5	-3,672,073.0	-4.9%
Semi-evergreen forest	2,844,667.3	2,743,771.7	2,057,176.0	1,990,367.7	-85,430.0	-3.0%
Deciduous forest	14,341,693.8	13,949,256.8	9,535,518.3	8,946,269.3	-539,542.4	-3.8%
Bamboo	27,852.2	27,852.2	192,166.0	191,137.6	16,328.5	58.6%
Wood shrub	19,286,135.9	17,408,386.8	10,793,936.6	10,574,900.9	-871,123.5	-4.5%
Rubber plantation	610,881.9	1,502,818.9	5,642,310.5	5,917,784.5	530,690.3	86.9%
Flooded forest	3,628,382.4	4,578,928.5	4,941,062.0	4,922,153.8	129,377.1	3.6%
Forest regrowth	10,885,197.9	10,646,384.7	8,985,796.9	7,620,126.3	-326,507.2	-3.0%
Tree plantation	1,595,960.5	1,046,761.7	2,132,225.9	2,214,074.0	61,811.4	3.9%
All forests	**128,829,538.7**	**124,157,316.8**	**88,338,876.7**	**81,264,850.7**	**-4,756,468.8**	**-3.7%**

3.2. Forest Carbon Stocks Changes by Districts

Carbon stocks distribution by district is shown in Table 2. Sandan and Santuk districts had the highest carbon stocks, 51.9 TgC and 33.1 TgC, respectively. Respectively, carbon stocks in the two districts decline 3.0% and 5.4% annually between 2006 and 2016. Other districts also experienced rapid decline of forest carbon stocks. For example, Baray lost 5.1%, Stoung 4.9%, and Prasat Sambour 4.2% annually over the same period between 2006 and 2016 (Table 2). Forest carbon stocks in Krong Stueng Saen increased 13.8% per year over the same period due to increase in wood shrub.

Table 02: Carbon stock changes in Kampong Thom by districts (2006-2016)

Districts	2006	2010	2014	2016	2006-2016 (per year)	
	(MgC)	(MgC)	(MgC)	(MgC)	(MgC)	(%)
Baray	3,150,440.3	2,323,382.9	1,589,702.4	1,529,567.7	-162,087.3	-5.1%
Kampong Svay	7,093,603.1	6,809,047.9	4,472,850.4	4,120,165.6	-297,343.8	-4.2%
Krong Stueng Saen	218,853.8	135,874.3	537,008.0	521,855.4	30,300.2	13.8%
Prasat Ballangk	15,641,106.0	16,686,996.0	14,600,545.0	13,950,684.7	-169,042.1	-1.1%
Prasat Sambour	5,933,084.4	5,876,591.3	3,528,252.2	3,413,185.8	-251,989.9	-4.2%
Sandan	51,901,665.2	49,320,003.8	39,376,861.8	36,449,440.1	-1,545,222.5	-3.0%
Santuk	33,062,103.5	30,977,755.8	17,857,793.2	15,256,626.6	-1,780,547.7	-5.4%
Stoung	11,828,682.3	12,027,664.9	6,375,863.9	6,023,324.9	-580,535.7	-4.9%
Total	**128,829,538.7**	**124,157,316.8**	**88,338,876.7**	**81,264,850.7**	**-4,756,468.8**	**-3.7%**

Section IV. Adjusted FREL vs Default FREL

4.1. Baseline Emissions by Forest Categories and Districts

As reported in previous report, baseline emissions are the emissions due to deforestation occurred during the 2006 and 2016. These emissions were estimated through projection using exponential decline trend. Adjusted FRELs for individual districts were obtained after default FRELs were determined. This is because adjusted FRELs used default FRELs as basis for triggering the shift of carbon emissions. For comparison purpose, baseline emissions were again added here in Table 3 and Table 4.

4.2. Adjusted FRELs and Default FRELs by Districts

Estimation of adjusted FRELs is affected by the assumption of the change of deforestation during the implementation of the REDD+ activities (i.e. during the Paris Agreement between 2020-2030). For this report, two scenarios of deforestation

rate were assumed – the increase of 30% and 50% (FREL30 and FREL50, respectively hereafter) rate of deforestation compared to the deforestation rate used for determining the default FRELs i.e. retrospective approach. These increases were assumed to occur equally for all districts, where deforestation occurred during the 2006 and 2016. Rate of forest increase in Krong Stueng Saen assumed to remain constant. Estimated results on baseline emissions, Default FRELs and Adjusted FRELs under the FREL50 by districts in Kampong Thom province are presented in the Annex. Overall, the emission level of the default FRELs is 11,361,871.5 MgCO2 in 2017 but emission level of adjusted FREL (FREL50) is 17,042,807.2 MgCO2. In 2030, both FRELs are 6,628,214.7 MgCO2 and 9,942,322.1 MgCO2, respectively.

FREL30 and FREL50 should provide useful information for monitoring the performance when REDD+ activities are implemented. For example, if default FREL is chosen for comparing performance, actual emissions must be below the blue line. This could mean that if rapid deforestation is expected during the 2020 and 2030, it is unlikely that emission reductions can be achieved. If FREL30 or FREL50 is chosen and accepted, actual emissions can be even above the blue line but below other two lines in order to be qualified for emission reductions under the performance-based payment scheme of the REDD+. Deciding which FRELs to be used required various stakeholder consultations to ensure that all agreed activities are pursued.

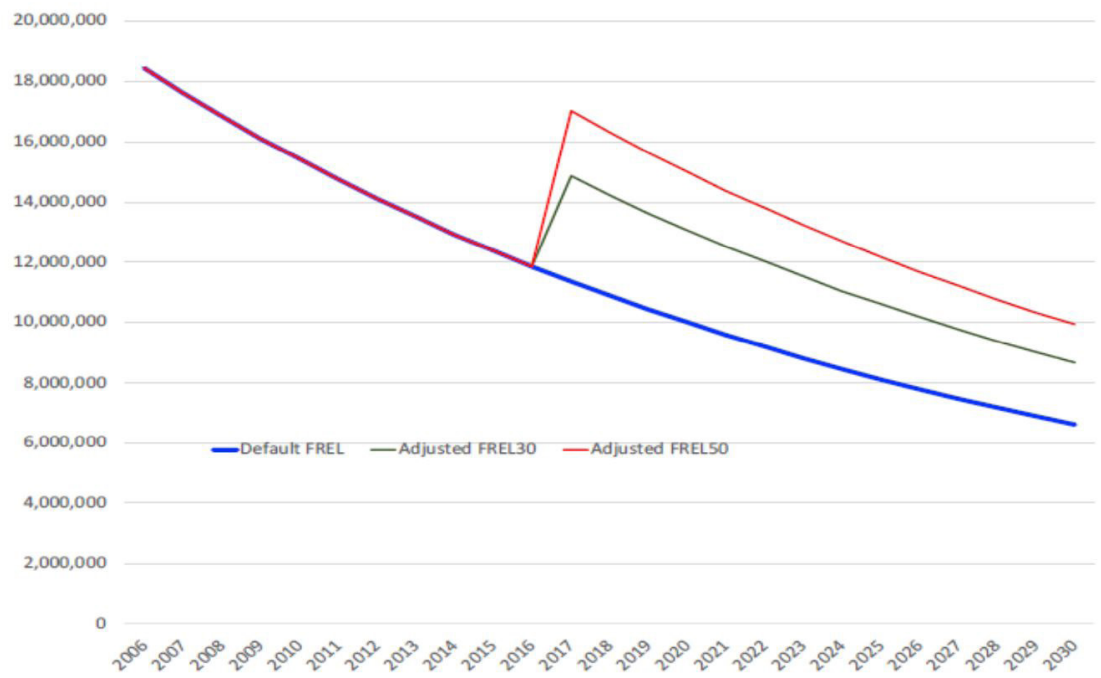
Table 03: Annual carbon emissions or removals by forest categories in Kampong Thom province (2006-2016)

Districts	2006-2016		2010-2016		2014-2016	
	($MgCO_2$)	(%)	($MgCO_2$)	(%)	($MgCO_2$)	(%)
Evergreen forest	13,464,267.8	4.9%	20,389,794.9	7.7%	9,479,521.1	5.9%
Semi-evergreen forest	313,243.2	3.0%	460,413.5	4.6%	122,481.8	1.6%
Deciduous forest	1,978,322.3	3.8%	3,057,381.2	6.0%	1,080,289.9	3.1%
Bamboo	-59,871.3	-58.6%	-99,785.5	-97.7%	1,885.3	0.3%
Wood shrub	3,194,119.5	4.5%	4,176,019.2	6.5%	401,565.5	1.0%
Rubber plantation	-1,945,864.3	-86.9%	-2,698,034.6	-49.0%	-505,035.7	-2.4%
Flooded forest	-474,382.8	-3.6%	-209,748.8	-1.2%	34,665.2	0.2%
Forest regrowth	1,197,192.9	3.0%	1,849,380.1	4.7%	2,503,729.5	7.6%
Tree plantation	-226,641.6	-3.9%	-713,357.5	-18.6%	-150,054.9	-1.9%
Removals	**-2,706,760.1**	**-64.7%**	**-3,720,926.4**	**-41.8%**	**-655,090.6**	**-2.3%**
Gross Emissions	**20,147,145.7**	**4.6%**	**29,932,989.0**	**7.1%**	**13,624,138.3**	**5.8%**
Net Emissions	**17,440,385.6**	**3.7%**	**26,212,062.6**	**5.8%**	**12,969,047.7**	**4.0%**

Table 04: Annual carbon emissions or removals by districts in Kampong Thom province (2006-2016)

Districts	2006-2016		2010-2016		2014-2016	
	($MgCO_2$)	(%)	($MgCO_2$)	(%)	($MgCO_2$)	(%)
Baray	594,319.9	5.1%	485,109.3	5.7%	110,246.9	1.9%
Kampong Svay	1,090,260.4	4.2%	1,643,205.9	6.6%	646,588.9	3.9%
Krong Stueng Saen	-111,100.6	-13.8%	-235,877.3	-47.3%	27,779.8	1.4%
Prasat Ballangk	619,821.2	1.1%	1,672,190.2	2.7%	1,191,410.4	2.2%
Prasat Sambour	923,962.9	4.2%	1,505,414.5	7.0%	210,955.2	1.6%
Sandan	5,665,815.9	3.0%	7,865,344.5	4.3%	5,366,939.8	3.7%
Santuk	6,528,674.9	5.4%	9,607,356.7	8.5%	4,768,805.4	7.3%
Stoung	2,128,631.0	4.9%	3,669,318.9	8.3%	646,321.4	2.8%
Removals	-111,100.6	-13.8%	-235,877.3	-47.3%	0	0
Gross Emissions	17,551,486.2	4.3%	26,447,940.0	6.6%	12,969,047.7	4.8%
Net Emissions	17,440,385.6	4.4%	26,212,062.6	7.1%	12,969,047.7	4.8%

Figure 3: Default FREL, Adjusted FREL30 and Adjusted FREL50 in Kampong Thom province (2006-2030)



Section V. Conclusion

Development of the adjusted FREL is challenging because of the uncertainties of the future activities. Accuracy of the adjusted FREL is very much dependent on assumptions of the future activities. In this report, data of forest cover changes in 2006, 2010, 2014, and 2016 were collected and processed to estimate the baseline deforestation, the deforestation in the absence of the REDD+ activities. Carbon stocks in five carbons were estimated in 2006, 2010, 2014, and 2016 in 14 forest cover categories in all the districts in Kampong Thom province. Default FREL was developed to create a carbon emission trend using the retrospective approach. This default FREL was calculated to form a baseline for understanding the business-as-usual scenario, against which adjusted FRELs for individual districts were developed with two rates of increasing deforestation, i.e. 30% and 50%.

Emissions for default FREL, adjusted FREL (30%) and adjusted FREL (50%) in Kampong Thom province are all same at 18,446,142.0 MgCO2 in 2006. Emission level for all FRELs begin to divert as time goes by. Emissions are estimated at 6,628,214.7 MgCO2 for default FREL 8,659,384.2 MgCO2 for adjusted FREL30% and 9,942,322.1 MgCO2 for adjusted FREL50% in 2030. Carbon removals due to increase of forest cover are 62,016.1 in 2006 and 4,730.7 in 2030. Obviously, any province or government would prefer to use the adjusted FREL for measuring the performance when REDD+ activities are implemented because of the huge potentials of emission reductions if compared to the default FREL. Nevertheless, claiming for credits under the adjusted FREL needs to have convincing justifications with supporting evident such as the proposed construction of highway, historical trend of incoming tourists, trend of natural disasters, and so on. In the case of Kampong Thom province, proper documentation of the planned deforestation activities and other factors that could trigger the acceleration of deforestation should be prepared and made it available. It is recommended that a taskforce be established to work on documentation and to develop the adjusted FRELs for individual districts, taking into consideration all available data.

CHAPTER 04

Reviews and Lessons Learned from the REDD+ Project Development in Cambodia

Chapter 04

Reviews and Lessons Learned from the REDD+ Project Development in Cambodia

Executive Summary

The main objective of this review is to analyze the most recent REDD+ development in Cambodia and what lessons can be learnt from for future improvement. Since national policies are the one part of REDD+ success, this review also identifies the forest related policies which are implemented in Cambodia and how they support forest protection and conservation. Three REDD+ projects including Oddar Meanchey (OM) REDD+ project, Keo Seima Wildlife Sanctuary (KSWS) REDD+ Project and Tumring REDD+ project (TRP) are specifically reviewed because they have been validated and verified to some degree. The methodology used in each project is identified, as well as the benefits from these REDD+ developments. All these three projects are implemented in collaboration with Forestry of Administration, and have Forestry of Administration as project proponent.

The three projects applied different VCS methodologies to estimate carbon accounting; however, the similar purpose of each project aiming to achieve is to estimate the emission reductions from deforestation and forest degradation through implementing REDD+ activities or measures over a project life time. In order to estimate carbon emission deduction, there are several steps to follows; though, the similar objective to fulfill is to quantify carbon baseline scenario emission and carbon project scenario emission. As a result, the estimation of annual carbon emission reduction of OM REDD+ project, KSWS REDD+ project and TRP are -272,926 tCO2e, 1,426,648 tCO2e and 325,680 tCO2e, respectively. All the projects have been validated, monitored and verified by the third parties to ensure the quality and accuracy of project implementation and actual emission reductions. The main three benefits are assessed, including climate change benefits (carbon emission reductions or removals), biodiversity benefits (biodiversity conservation), and community benefits (livelihood enhancement).

Based on the reviews, the current REDD+ projects require enormous amount of time and resources. Reducing such time requirement will certainly reduce costs and frustration, especially when carbon price goes down at the time when project is validated. It is necessary that upfront financial supports are needed for REDD+ project development and implementation until the REDD+ project can generate its own finance through selling carbon credits and other commodities. It is also recommended that project developers should focus on REDD+ project activities and related investment opportunities and income streams to reduce reliance on carbon credits because of volatility of the carbon markets and international regulation.

Section I. Forest and National Policies in Cambodia

Forest area in Cambodia is governed by three institutions, namely Forestry Administration (FA) of the Ministry of Agriculture, Forestry and Fisheries (MAFF), Fisheries Administration (FiA) of the Ministry of Agriculture, Forestry and Fisheries (MAFF) , and General Department of Administration for Nature Conservation and Protection (GDANCP) of the Ministry of Environment (MoE). The responsibility of FA is to manage the permanent forest estate including forest reserves, and conversion forests, while FiA is responsible for managing flooded forests and mangrove areas. Meanwhile, MoE is responsible for management of 5.9 million ha protected areas network of Cambodia including core areas of the Tonle Sap Biosphere Reserve (Royal Government of Cambodia, 2016).

During the period 1965-2014 Cambodia's forest cover has decreased from 73.04 percent to 49.48 percent (Royal Government of Cambodia, 2016). This significant change of forest cover had made the great concern to the nation. In 2007 after the UNFCC Conference of the Parties (COP) in Bali, Cambodia had adopted REDD+ to practice in the country. Along with the Royal Government of Cambodia commitment on reducing greenhouse emission through reducing the emission from the deforestation and forest degradation in the country, the first pilot REDD+ project was implemented in 2008 in Community Forests-Oddar Meanchey, then follow by another REDD+ project in Seima Protection Forest started in 2010. Even, REDD+ pilot projects have been implemented since 2008, Cambodia National REDD+ Strategy have just finalized and endorsed in December 2016. Therefore, the REDD+ projects have been aligned with national policy and forest related frameworks such as:

1.1. Law on Environmental Protection and Natural Resources Management 1996

This law aims at protecting and upgrading the environment quality and public health by means of prevention, reduction and control of pollution, assessing the environmental impacts of all proposed projects prior to the issuance of decision by the Royal Government, ensuring the rational and sustainable preservation, development, management and the use of the natural resources of the Kingdom of Cambodia, encouraging and providing possibility to public to participate in the protection of environment and the management of the natural resources, and suppressing any acts which may affect to environment.

1.2. Cambodia Millennium Development Goals (MDGs) 2003

One among the 9 goals of MDGs is "Ensure Environmental sustainability", and the overall target 7 under this goal is "integrate the principles of sustainable

development into country policies and programmes and reverse the loss of environmental resources, maintain forest coverage, promote access to safe drinking water and secure land tenure". The sub-targets to achieve this MDG 7 include maintaining forest coverage at the 2000 level of 60% of total land area, maintaining the surface of 23 protected areas at the 1993 level of 3.3 million ha, maintaining the surface of 6 new forest-protected area at the present level of 1.35 million ha, increasing the number of rangers in protected areas from 600 in 2001 to 1,200 by 2015 and reducing the fuel wood dependency from 92% of households in 1993 to 52% in 2015.

1.3. Law on Forest 2003

This law sets the framework for management, harvesting, utilize, development and conservation of the forests in Cambodia. The objective of this law is to ensure the sustainable management of these forests for their social, economic and environmental benefits, including conservation of biological diversity and cultural heritage. The chapters include sustainable forest management, permanent forest estates, concession management, management of production forest not under concession and protection forest, prohibited harvesting forest products and by-products and forest protection, customary user rights, management of community forest and private forest, and measures governing forestry activities.

1.4. Law on Fisheries (2006)

This law aims at managing fishery resources, enhancing aquaculture development and managing of production and processing, as well as promoting local community welfare. One chapter of this law addresses the management of inundated forest and mangroves. It guides management of inundated forest and mangrove fire management, protecting inundated forest and mangroves areas, and prohibiting the expanding agriculture land or using protected inundated area, cutting, reclaiming, digging out, clearing, burning or occupying flooded forests and mangrove, commercial collection, transportation and stocking of woods, firewood or charcoals of inundated and mangrove forest species, and construction of kilns, handicraft places, processing places and all type of plants using raw materials.

1.5. Protected Area Law 2008

The objectives of Protected Area law are to ensure the management, conservation of biodiversity, and sustainable use of natural resources in protected areas. According to this law, protected areas are categorized in to 8 categories including 1) national park, 2) wildlife sanctuary, 3) protected landscape, 4) multiple use area, 5) ramsar site, 6) biosphere reserve, 7) natural heritage site and 8) marine park. And each

protected area shall be divided into four management zoning systems including Core zone, Conservation zone, Sustainable use zone and Community zone.

1.6. National Forest Programme (NFP) 2010-2029

The overall mission of NFP is "to advance the sustainable management and development of our forests for their contribution to poverty alleviation, enhanced livelihoods, economic growth and environmental protection, including conservation of biological diversity and our cultural heritage" (MAFF, 2010). The National Forest programme focuses on "changing situations for Cambodian forest and society and its role in the global context with the objective of ensuring forest resources to provide optimum contribution to equitable macro-economic growth and poverty alleviation particularly in rural areas through conservation and sustainable forest management, with active participation of all stakeholders." To achieve this main objective, 9 strategic objectives are proposed.

1.7. Rectangular Strategy Phase III, 2013-2018

The strategic objective of the Royal Government of the Fourth Legislature focused on the management and conservation of forest and fisheries resources to ensure the sustainability of economic growth and improvement in livelihoods of rural population by further implementing forest community programs, monitoring forest exploitation, enforcing the Law on Forestry and strict measures against forest offenses; strengthening the management of protected areas, and deepening the reform of management of fishing lots and fisheries.

1.8. National Strategic Plan on Green Growth 2013-2030

This strategy promotes a national economy with growth stability, reduction and prevention of environmental pollution, safe ecosystem, poverty reduction, and promotion of public health service, educational quality, natural resources management, and sustainable land use and water resources management to increase energy efficiency, ensuring food safety and glorify the national culture (NCGG, 2013). The main part that discussed about forestry in this plan is in session of "Green Environment and Natural Resources Management". The Royal Government of Cambodia (RGC) has focus on clean development, non-pollution to water quality, soil quality, air quality, and sustainable management of forestry, fishery and water resources to improve livelihoods and public wellbeing of the people.

1.9. National Strategic Development Plan (NSDP) 2014-2018

In this development plan, there is the session of "environmental protection, conservation, and climate" which includes the main discussion of Green Growth and low-carbon Development. To achieve this NSDP, MOE has employed park rangers for patrolling, observing, monitoring, recording data, and preventing natural-resource-related crimes in managing the 23 natural protected areas and RAMSAR sites. MOE has established a green buffer zone to prevent encroachment on the protected area through developing agro-industry projects and ecotourism projects or setting up protected community area; meanwhile, forestlands within the protected areas are for local communities and ethnic groups to manage sustainably and use for no-timer forest products. Importantly, MOE has conducted environmental education activities based on four main pillars: formal environmental education, informal environmental education, capacity building, and cooperation and networking for environmental education.

1.10. National Biodiversity Strategy and Action Plan (NBSAP) 2016

The vision of this updated NBSAP and in pursuance of the National Strategic Development Plan, by 2050 Cambodia's biodiversity and its ecosystem services are valued, conserved, restored where necessary, wisely used and managed so as to ensure equitable economic prosperity and improved quality of life for all in the country. In Theme 9 of NBSAP, "Sustainable Forestry" is the main topic for discussion. To address the general concern of human induced activities such as illegal logging, inappropriate forest sub-product collection, land clearing for agriculture and ownership which make the negative impact on forest health, growth and regeneration, there are strategic objectives.

1.11. Cambodian National REDD+ Strategy (NRS) 2017-2026:

National REDD+ strategy contributes to the all the above policies. It has the goal of reduce deforestation and forest Degradation, meanwhile, promoting sustainable management, conservation of natural resources and contributes to poverty alleviation. To achieve this goal, there are three main strategic objectives to fulfill, including improve management and monitoring of forest resources and forest land use, strengthen implementation of sustainable forest management, and mainstream approaches to reduce deforestation, build capacity and engage stakeholders.

Section II. REDD+ Roadmap and Phase

The first National communication from Cambodia to the UNFCCC occurred in 2002 and the Royal Government of Cambodia approved the National Adaptation Programme of Action to Climate Change (NAPA) in 2006 (Walker, Cassarim, Harris, &

Brown, 2010). Royal Government of Cambodia had announced the support of REDD+ at UNFCCC Conference of the Parties (COP) in Indonesia in 2007. Then a Readiness Plan Proposal (R-PP) was submitted to the Forest Carbon Partnership Facility (FCPF) in 2009. Meanwhile, Cambodia became a partner country of the UN-REDD Programme in 2009, and signed a UN-REDD National Program in 2011(RECOFTC, 2014). Also, Cambodian national road map for readiness for REDD+ was developed in 2009-2010. REDD+ Roadmap aims at activities as follows:

- To create REDD+ readiness plan including stakeholder consultation
- To establish national REDD+ strategy and its framework
- To establish monitoring system as well as to promote the capacity building to utilize the system.

The 3-phase approach of REDD+ has been applied to practice in Cambodia including REDD+ Readiness Phase, Design of REDD+ Interventions Phase, and Implementation and Performance-based Payments Phase. The first phase, REDD+ Readiness, started from 2008 to 2016. Cambodia now is in the implementation phase of REDD+.

In order to take part in a national REDD+ system, Cambodia needs to establish national monitoring system which include reporting and verification of emissions reduction, as well as need to develop a national-level baseline referr¬ing to Reference Scenario or the Reference Level (RL) or the Reference Emissions Level (REL) if only applied to emissions from deforestation and forest degradation (Walker et al., 2010). The objective of forest reference emission level (FREL) is to project emissions and removals of CO2 in the future without REDD+ incentives. The FREL bases on historical information, meanwhile also consider national circumstances and relevant policies in order to meet international standards and requirements (Walker et al., 2010). Therefore, Cambodian initial Forest Reference Level was developed and submitted to UNFCCC in 2016. This reference level was assessed by using historical data and adjusted for national circumstances.

The national responsibilities for REDD+ readiness in Cambodia have been arranged, including RGC and Council Ministers, Ministry of Economic and Finance, Ministry of Land Management, Urban Planning & Construction, Ministry of Agriculture, Forestry and Fisheries, Ministry of Interior, Ministry of Environment and Ministry of Rural Development (Figure 1). All the assigned bodies play an important role in REDD+ development since they are more or less being part of or contributing to management of forest in Cambodia. Hence, the cooperation and support from all these relevant bodies is necessary for the success of REDD+ development. Moreover, REDD+ institutional arrangement was established (Figure 2), which consist of National Climate Change Committee, Cambodia REDD+ Taskforce, REDD+ Advisory Group, REDD+ Consultation Group, Taskforce Secretariat, Consultation and Safeguards

Technical Team, Benefits-sharing Technical Team, REDD+ Projects Technical Team, and MRV/REL Technical Team.

The main responsibilities of the National REDD+ Taskforce include development of National REDD+ registry, development of Guidelines for REDD+ project in Cambodia, determine benefits-sharing and REDD+ revenue management, setting Cambodia's RELs and rules for monitoring, measurement, reporting, and verification (MRV) via the REL/MRV working Group (Walker et al., 2010). Meanwhile, the Taskforce Secretariat has the responsibility of day to day management of the REDD+ Readiness process (UN-REDD, 2010).

Section III. Progress of REDD+ Programme in Cambodia

It is required that to obtain and receive results-based finance for results from the implementation of REDD+ activities, developing country parties should fulfill requirements of the UNFCCC Warsaw Framework including National REDD+ Strategy (NRS), Forest reference Level (FRL), National Forest Monitoring System (NFMS) and Safeguard Information System (SIS) and Summary of Information (SoI).

3.1. National REDD+ Strategies

Throughout the long-term consultancy process, Cambodia has completed the development of the NRS, which has been endorsed on December 8th, 2017 by the Prime Minister. Meanwhile, National Protected Areas Strategic Management Plan (2017-2031) has also been developed and approved and National Production Forest Strategy (2018-2032) has been drafted. The NRS has three strategic objectives 1) improve management and monitoring of forest resources and forest land use; 2) strengthen implementation of sustainable forest management; and 3) mainstream approaches to reduce deforestation, build capacity, and engage stakeholders. To achieve the goal of the NRS, an actions and investment plan (AIP) is needed to develop and implement and go beyond the forest sectors that are the direct and indirect drivers of deforestation, including, agriculture, energy and infrastructure and planning sectors.

Currently, the AIP has been developed to provide 1) a robust theory of change for reducing deforestation and forest degradation in Cambodia and the enhancement of forest cover; 2) a detailed action and investment plan for the implementation of the NRS; 3) an overarching resource mobilization framework, which includes potential sources of finance and strategy for resource mobilization by the government; and 4) a robust monitoring and evaluation framework. The draft AIP will be available for consultation at the end of 2018 and it is expected to finalize in early 2019.

3.2. Forest Reference Level (FRL)

The initial FRL that cover the period 2006-2010 and 2010-2014 was submitted to the UNFCCC on November 1, 2016. After clarification and revision in responses to the comments of the UNFCCCC, technical Assessment Team, this initial FRL was re-submitted on May 22, 2017and it was accepted finally. Cambodia is ready to improve its FRL in a phased-approach along with the increase in the number of map data and improvement in emission factors. Currently, overall consistency between FRL submissions and National GHG reporting is strengthened through establishment of REDD+ database, overview of NFMs document for submitting to the UNFCCC, Biennial Update Reports (BUR), Technical Annex for REDD+ result reporting over 2015-2016 is drafted.

3.3. National Forest Monitoring System (NFMS)

NFMS has been developed and finalized in 2017. NFMS is developed based on stepwise approach so that its effectiveness will be improved up on available data, technical resources and national capacity. Currently, Satellite Land Monitoring System is focused on activity data (land use map 2018), identify drivers of LU/LC change and time series analysis (national and subnational). Web-portal is on process to finalize and get approval on data and organize dissemination workshop of the NFMS web portal to relevant stakeholders. National Forest Inventory (NFI) design and field manual (Khmer-English) is in publication. NFI ToT workshop will be shortly organized, follow-up training on allometric modeling and Open Floris Collect will be conducted. All allometric equation for AGB and BGB for tree species and emission factors for specific forest types have been developed.

3.4. Safeguard Information System (SIS) and Summary of Information (SoI)

Cambodia is now on the process to develop SIS and SoI. So far, the following steps have been completed: developed a national approach to REDD+ Safeguards; undertook an initial assessment of its existing policies, laws and regulations (PLRs) associated with the Cancun Safeguards; and initiated a national clarification of the Cancun safeguards through the development of a set of 15 criteria, 24 indicators, and methods to collect the associated data. For the next step, the following tasks are to be undertaken: review the existing safeguard products and revised PLR analysis if needed; revised national clarification of Cancun safeguards combined with additional criteria for UNDP/GCF; assessment of respective framework associated with the PLR above, outlining institutional and implementation arrangements for relevant PLRs; preliminary environmental and social impact assessment of the relevant PaMs, and resulting management framework; SIS roadmap and SIS online portal; and SoI that is covering the years 2015-2016, assessing consistency with both UNFCCC and UNDP/GCF safeguard requirements.

Biennial Update Reports (BUR)

To access the pilot Green Climate Fund result-based payment (GCF-RBP), it is required to develop BUR as well. BUR contains five chapters including 1) national circumstance and institutional arrangement; 2) greenhouse gases inventory; 3) mitigation actions; 4) information on the support received and need; and 5) measurement, reporting and verification system. To ensure that BUR will be developed and completed on time before June 2019, the tasks have been split out in which GDANCP has been assigned to develop chapter 2 and chapter 3 and the rest chapter 1, chapter 4 and chapter 5 will be in charge by GSSD. Institutional arrangement and project support to develop the BUR has been set up meanwhile key deliverables with time line have been defined in Annex 4. Deliverables have been produced as time line. The second mission of the international GHG team will come to Cambodia on 26-29 November 2018 to deliver a comprehensive training on national GHG inventories and tools, organize an interim meeting to evaluate the progress and approve the draft structure of the BUR chapters.

Mainstream Gender into REDD+ Action and Investment Plan

To ensure that gender perspectives are effectively integrated into the REDD+ implementation framework, REDD+ secretariat has supported the assignment to mainstream gender into REDD+ Action and Investment plan. The objectives are 1) assess to what extent gender considerations are addressed within strategic documents, action plans and reports related to the REDD+ Programme in Cambodia, and identify any good practices undertaken and/or lessons learned on gender which can be used to help inform the National REDD+ Action and Investment Plan; 2) identify gender gaps in the REDD+ implementation; 3) identify entry points for mainstreaming gender within REDD+ Action and Investment Plan; and 4) Provide recommendations on how to make the REDD+ Action and Investment Plan gender responsive. The field assessment was recently completed and the first draft report has been submitted.

REDD+ Awareness Raising and Stakeholder Engagement

This year REDD+ programme planned to conduct a deeper drivers' analysis at the policy and subnational levels and to develop an Action and Investment Plan in response to drivers. The implementation of the AIP is required involvement and collaboration from subnational administration and community groups as their lives directly engage in natural resources use and management. Therefore, four REDD+ awareness raising events for subnational administration were organized, in which 410 participants attended. These participants include provincial governors, directors of provincial divisions and line departments, district governor and commune councilors from 16 provinces. Following these vents, two more REDD+ awareness raising events were

also organized, in which 165 people from community protected areas, community forestry, community fishery, and indigenous peoples from 10 provinces attended. Another two more REDD+ awareness raising events were also scheduled in December 2018 and other community networks from 10 additional provinces will attend.

Section IV. Current REDD+ Projects in Cambodia

REDD+ pilot projects are the first stage of REDD+ phase. Therefore, in order to move to the next stage, Cambodia has to work on pilot projects. Annex V shows the REDD+ project and potential REDD+ pilot sites in Cambodia which are under supervision of 3 institutes including Forest Administration, Ministry of Environment, and Fisheries Administration. Although many REDD+ project sites are listed in Table 4, only three projects have been validated, namely Oddar Meanchey Community Forestry REDD+ Project, Seima Protection Forest REDD+ project and Tumring REDD+ project.

These projects are currently registered in the registry system of the Verified Carbon Standards (VCS) and Climate Community Biodiversity (CCB) Alliance. Another project, the Southern Cardamom REDD+ Project is under validation. Due to the unavailability of information about the other REDD+ projects and some projects are in the very early stage, slow progress or no progress after feasibility study or do not succeed in getting validated from the third party, this report will review only three REDD+ projects including Community Forests Oddar Meanchey REDD+ Project, Seima Protection Forest REDD+ Project and Tumring REDD+ Project, which are already validated by VCS and CCB.

4.1. Oddar Meanchey Community Forestry REDD+ Project

The project area is located in the northwest of Cambodia in Oddar Meanchey Province. The area consists of 13 community forests, having the total area of 63, 831 hectares which among these, 56,050 hectares are the forested area (Terra Global Capital, 2012). The REDD+ project is expected to generate an estimated 6,143,767 VCUs or Verified Carbon Units over 30 years (Terra Global Capital, 2012). Oddar Meanchey was one of the most region that heavily covered by forest during 1970s. Due to the intense pressure of commercial and illegal logging, encroachment, forest fires and economic land concession, and several other factors such as rapid economic growth, population growth, migration, speculation of land, deforestation has occurred rapidly throughout the province which was accounted for 2% annually from 2002 to 2006 (Terra Global Capital, 2012). In response, Community Forestry (CF) area has been established by local community in order to protect the remaining forest lands. Therefore, this initiative has generated the opportunity for long term conservation of forest with the support from forest protection finance through the sale of carbon offset.

4.2. Seima Protection Forest REDD+ Project

The project area is located in eastern Cambodia, in Mondulkiri province with a small area extending into Kratie province. The Seima Protection Forest (SPF) (later on changed to Keo Seima Wildlife Sanctuary (KSWS)) covers the area of 292,690 ha, where the REDD project area covers 166,983 ha of forest in the core protection area of the Seima protection forest (WCS, 2014). The project is expected to reduce emission of 14 million tCO2e from unplanned deforestation over the next 10 years. There has been the threat of forest clearance for agriculture and unsustainable resource extraction such as hunting, logging and fishing in SPF, which harm both biodiversity and local forest-dependent livelihoods. The drivers are improvement of road access, population growth, limitation of law enforcement and governance framework, limited recognition of the biodiversity and environmental value. Therefore, in response to this situation, the FA, the WCS and other local NGO partners have worked together in developing SPF management system to conserve and restore the biodiversity and enhance livelihood of local people since 2002. However, all the interventions have been in limited scale and not match the level of threats, where deforestation rate and declining of biodiversity still increase. Hence, to make more support from different stakeholders, make the interventions more effective, and generate financial incentives for conservation in long-term, sustainable financing from carbon revenue for this site is crucial. (WCS, 2014)

4.3. Tumring REDD+ Project

The Tumring REDD+ project (TRP) is located in Kampong Thom province, which lies on the southwestern edge of Prey Long Wildlife Sanctuary (PLWS) and covering approximately 66,645 hectares of land located in the central part of Cambodia, to the west of the Mekong River (Wildlife Works Carbon LLC, 2017). TRP is designed to promote climate change mitigation and adaptation, maintain biodiversity and generate alternative livelihoods under REDD+. The TRP area is a buffer zone for Prey Long Wildlife Sanctuary. It is expected to reduce 2.8 million tCO2e of emission over a 10-year timeframe. Therefore, protecting TRP forest is essential for mitigating global climate change, biodiversity conservation and ensuring the ecosystem service provision for local community. Although, its importance, there have been uncontrolled conversion of forest land to agricultural land in small-scale or commercial leading to increasing of deforestation. To prevent this scenario, the FA, in consultation with the Korean government decided to establish this Tumring REDD+ project.

Section V. Drivers of Deforestation and Forest Degradation and Appropriate Measurements in Project Studied Areas

According to Cambodian UN-REDD+ program, there are two types of drivers of deforestation and forest degradation in Cambodia, direct and indirect. These drivers could occur both in forest sector and outside forest sector. The details of drivers are presented in Annex V. In Oddar Meanchey REDD+ project area, the main drivers of deforestation and forest degradation are conversion to cropland, timber harvesting (economic land concession), illegal logging, fuelwood collection, forest fires, and conversion to settlement (Terra Global Capital, 2012). The main cause of deforestation in Seima REDD+ project area is mainly caused by smallholder farmer (WCS, 2015). The drivers of deforestation and forest degradation in Tumring REDD+ project area are caused by the high demand for new agricultural and cash crop, the population growth, illegal logging, fuel gathering, and charcoal production (Wildlife Work Carbon LLC, 2017). The main agents of deforestation are in-migrants and outsides referring to landless households, forestland speculator or forest land grabber, and middleman. In order to address these drivers, appropriate measure have been proposed and practiced in these project areas. Table 7 shows the activities to be implemented in each REDD+ project.

Section VI. Methodology Used for Estimating Carbon Accounting

All the three REDD+ projects selected for this review employed the methodology of VCS and CCBA. Oddar Meanchey REDD+ project has followed the VCS methodology of VM0006 referring to the methodology for carbon accounting for mosaic and landscape-scale REDD+ projects. This methodology offers procedures for measuring emission reduction and/or removals from activities aimed at reducing unplanned deforestation and forest degradation of the mosaic configuration (Terra Glocal Capital, 2017). The methodology used in KSWS REDD+ project was VM0015 which is the methodology for Avoided Unplanned Deforestation (WCS, 2015). The TRP used the VCS VM0009 Methodology for Avoided Ecosystem Conversion, version 3.0. This methodology uses to estimate greenhouse gas emission reductions generated from avoiding planned or/and unplanned deforestation and protection from native grassland conversion as initiated by a variety of agents and drivers (Wildlife Works Carbon LLC, 2017).

6.1. Baseline

Oddar Meanchey REDD+ project's baseline scenario is based on historical data of changes in carbon stocks in the carbon pools within the project boundary. Historical reference period was from 28, 01, 1994 - 20, 12, 2008. the project will be verified every 2 years, and baseline will be updated every 10 years (Terra Glocal Capital, 2017). Besides, non-remote sensing and spatial available were also used together with the remote sensing imageries including:

- Map of Forest cover in 1976 (Mekong Secretariat)
- Land use in 2002 (Japanese International Cooperation Agency)
- Forest Cover in 2006 (Forest Administration)
- Road maps from 2005 (Department of Geography and the Japanese International Cooperation Agency
- Map of villages (Department of Geography, 2005 and Cambodia Mine Action and Victim Authority), and
- Administrative boundaries (Department of Geography, 2005)

KSWS REDD+ project's baseline scenario focused on different perspectives including 8 years of historical data and characteristic of the area such as development trend, land use change, biodiversity status, and community status. Then Liner regression was produced to identify baseline. The historical reference period runs for twelve years from 1 January 1998 to 31 December 2009. The crediting period of the project activity has started on 1 January 2010 and will run for 60 years. Monitoring and verification will take place at three points, or more if market conditions require it: Verification 1 - during 2015 (covering 2010-2014, years 1-5), Verification 2 - during 2017 (covering 2015-2016, years 6-7), and Verification 3 - during 2020 (covering 2017-2019, years 8-10).

The TRP was applied the national baseline data into practice. Reference emission level for Tumring REDD+ project is defined as synonymous with the national FRL area (the country of Cambodia) (Wildlife Works Carbon LLC, 2017). The reference period for the Cambodian national FRL is a 9-year period between 2006 and 2014 and 3 epochs were used to calculate historical deforestation rate , 2006, 2010 and 2014. The credit period of the project is 30 years from 01 January 2015. Baseline re-evaluation is conducted every 10 year; therefore it will be on or before 01 January 2025 and 01 January 2035. Reference period for the TRP is 01 January 2002 to 31 December 2014.

6.2. Additionality

Oddar Meanchey REDD+ project

In the absence of the planned project activities, the alternative scenario is that the mosaic deforestation in the project area would continue due to the lack of funding and enforcement capacity to implement the planned project activities. Regarding tree planting in deforested and degraded areas within the project area, it is expected that there would be some trees regenerated naturally but it would remain in a low-carbon state and subject to deforest or degrade by conversion to crop-land or settlements, logging, or forest fire. Moreover, the project activities planned are unlikely to occur in the project areas in the scenario without this project due to the lack of funding and finance. Besides, there is Forest Law which was endorsed in 2002; however, illegal logging, forest encroachment and migration for settlements in forest areas still occur

due to the limited enforcement capacity (Terra Global Capital, 2012). Therefore, Oddar Meanchey REDD+ project activity is not additional.

Keo Seima Wildlife Sanctuary REDD+ project

There are 3 alternatives scenarios which are likely to occur in the absence of REDD+ project. In scenario 1, continued grant-funded conservation is likely to happen but there are the rising threats from residents and migrants due to improving road access and other drivers as well as the decline of non-REDD funding for conservation action. In scenario 2, economic land concessions in parts of the project area, plus continued grant-funded conservation probably occur. This scenario is likely to happen since economic land concession has already affected the Mondulkiri Protected Forest during 2007, and is recently affecting large sections of nearby Wildlife Sanctuaries and the SPF Buffer Area. For scenario 3, greatly increased expenditure on conservation and increase conservation effort without being registered as a VCS AFOLU project is not likely to happen since there is no evidence that adequate funding and very secure political support for forest conservation area in Cambodia especially in project area are likely to be available in the foreseeable future. However, beside the carbon market-related income, there is the potential of financial or economic benefits to the project proponents from ecotourism. The revenue could be from entry fee or selling ecotourism service. However, comparatively to the finance generated by VCS related revenue, this scenario is not the most preferable. According to the analysis, this REDD+ project can be considered additional to climate, community and biodiversity benefits, but yet for conservation baseline scenario, it would not happen in the absence of REDD+ finance. Therefore, for conservation baseline scenario (selected for this project), KSWS REDD+ is not additional (WCS, 2014).

Tumring REDD+ project

The alternative land-use scenarios to the proposed REDD+ project area is continuation of the pre-project land use, project activity on the land within the project boundary performed without being registered as the VCS AFOLU project, or activities similar to the proposed project activity on at least part of the land within the project area at a rate from legal requirement (Terra Glocal Capital, 2017).

1. Continuation of the pre-project land use: this is the most likely alternative land use scenario. Without project activities, unplanned deforestation, degradation and conversion in the project boundary would continue occurring which caused by both legal (community members are allowed sustainable use of forest products) and illegal (conversion of forest area to agricultural land) activity.

2. Project activity on the land within the project area performed without being registered as the VCS AFOLU project: there have been limited conservation activities previously in some part of project boundary. Due to the lack of a consistent funding, the scope of the projects activities and their effectiveness to reduce deforestation and forest degradation is very limited.

3. Activities similar to the planned project activity on at least part of the land within the project boundary are at a rate of legal requirement: the land area of project boundary is the type of Cambodian state owned by Cambodian Forest Administration. Therefore, legal requirement activities such as conserve the forest and reduce deforestation and forest degradation are implemented. Even the area are conserved and protected under national legislation, the significant forest degradation and deforestation has occurred for 10 years. This is due to the lack of funding to enforce the forest boundaries and patrol the forest area.

According to the analysis of the project baseline scenario, the most credible is the first scenario, continuation of pre-project land use activities including conversion to agriculture. In the absence of a REDD+ project, there would be the ecosystem conversion in the project area. Therefore, this REDD+ project is not additional.

6.3. Process of Estimation of Emission or Removal

According to characteristic of projects, each project study has followed different methods (VM0006, VM0015, VM 0009) of carbon emission calculation. However, the main similar idea is to find baseline emission and project emission, and finally the net emission or emission reductions. The VCS program has grouped projects into 3 kinds according to its size such as micro projects (under 5000 tCO2-eq per year), projects (5000- 1 000 000 tCO2-eq per year) and mega projects (greater than 1 000 000 tCO2-eq per year). Therefore, Oddar Meachey REDD+ project and Tumring REDD+ project fall into the category of normal project, while KSWS REDD+ project is a large project. For Oddar Meanchey REDD+ project, the carbon credits are from reducing emission from deforestation and forest degradation. For KSWS REDD+ project, carbon credits are from the net emission deduction from deforestation and forest degradation (the first 3 years) and from the removals (the other 7 years). The emission projection for KSWS REDD+ is only for the first 10 years. The projection beyond this period will be made after revising the baseline. And for TRP, the carbon credits are from removals.

MRV in each project is similar. Field based sampling of forest carbon stocks and monitoring land use change via analysis of classified Landsat image were utilized in order to achieve accuracy in estimating carbon emission. All the projects are required by the VCS and CCB to be validated, periodic monitored, and verified by a third-party.

Section VII. Community and Biodiversity Benefits

7.1. Oddar Meanchey REDD+

Based on the results of the SCS Greenhouse Gas Verification activities, Oddar Meanchey project meets the quality standard defined by CCBA, and is qualified for Gold level based on its optional Climate Change Adaptation, Community, and Biodiversity CCB Criteria. One of the main benefits for local people in project area is reinforcement of land tenure. This process is costly and time consuming and requires multiple government support. The reinforcement of land tenure can help communities especially the poor household in securing and protecting land tenure and assist them to obtain a legal and enforceable right to their forest resources, as well as motivate them to implement sustainable land-use. The project also support the process of resolving conflicts related to boundary conflicts. Additionally, development of sustainable land-use plans is the other main benefits for community. This activity is in-part dependent on land tenure formalization; however, the land use plans have to be developed as the guide to improve forest conditions and agricultural production. Therefore, locations of areas for ANR, NTFP development, sustainable harvesting operations, and fire prevention have been identified with the help of communities. The total area of 64,318 ha of project zone represents 10% of Oddar Meanchey Province area, and approximately 15% of its remaining evergreen forest are protected through improved protection from illegal logging, fire, and through ANR activities. Therefore, unique habitat for amphibians, reptiles, mammals and birds is restored.

7.2. Keo Seima Wildlife Sanctuary REDD+

By protection of the forest in project area, over 2,500 households (about 12,500 people) within the 20 REDD+ participating villages get the basic needs and maintain traditional cultural identity. The tenure right of forest communities is strengthened, and landlessness is reduced through legal and planning support for indigenous communal land titling, participatory land-use planning (PLUP), and land-use agreements. Seven indigenous communal land titling areas were established. The project supports alternative livelihoods and skill development opportunities for local communities. Activities include the establishment of the Jahoo Gibbon Camp ecotourism enterprise, community savings groups, and market garden development. Furthermore, the project provides agricultural extension and infrastructure support; for example, the project provided extensive enhanced agricultural and livestock productivity trainings during the verification period. As for biodiversity benefits, nearly 25,000 ha of forest areas are prevented from unplanned deforestation during the verification period. Ongoing patrolling has reduced illegal land conversion, logging and unsustainable

NTFP harvest, as well as poaching of wildlife by active hunters. As a result, important species such as Asian Elephant, Black-shanked Douc, Yellow-cheeked Crested Gibbon, Eld's Deer, Gaur, Banteng, and Green Peafowl are protected. The KSWS REDD+ project is qualified for Gold Level based on its optional Exceptional Biodiversity Benefits CCB Criteria (WCS, 2016).

7.3. Tumring REDD+

Tumring REDD+ project aims at reducing poverty and improve overall livelihoods over the project's lifetime. The activities of trained extension officers and water management will lead to greater crop diversification, and increased agricultural education will lead to better process from crops and water availability. Moreover, the TRP also aims at increasing the communities level of awareness and knowledge which lead to reduce threat to forest and improve livelihood. It is expected that increasing agricultural yields and infrastructure will lead to higher farm incomes and less isolation, which also included in this project. Similar to previous two REDD+ projects, this project will also assist local communities by promoting effective land-use planning and granting secure land tenure. The project will increase forest protection by expanding the current government ranger and community protection force. The project will protect the western edge of the Prey Long Landscape; therefore, viable populations of threatened species, such as the clouded leopard, dhole and bear are preserved. The protection of this project area of 67,791 ha also contributes to fulfill Cambodia's commitments under the Convention on Biological Diversity (CBD).

Section VIII. Project Financing and Benefits Distribution

The Oddar Meanchey REDD+ got support from international donors in implementing the project. However, some activities of the project such as training, capacity development, workshop and technical assistance will be implemented after getting the finance from selling carbon credits. According to Government Decision No. 699 ("Sor Chhor Nor"), the project revenues will be used for improve the quality of the forest, maximize the benefits to the local communities who are participating in the project, and study potential sites for additional forest carbon credit REDD+ projects. However, until now this project has not generated the revenue from selling carbon credits yet.

The work in Keo Seima Wildlife Sanctuary has been supported mostly by international donors, including private foundations, bilateral aid agencies, and multilateral institutions. These donors' funding has been enough to maintain core operations, though the project seeks carbon finance to ensure the long term sustainability of the project (WCS, 2016). According to the project proponents, the benefits 50% from

selling carbon credits will distribute to local community related development projects. In 2016, KSWS REDD+ carbon credits of 360,000 tonnes of carbon were sold to the Walt Disney Company and generated the revenues of USD$2.6 million. Tumring project got the support from Royal Government of Cambodia Forestry Administration. The majority of finance support for development of the project was provided by South Korea, and the Korea Forest Service. Since Tumring is the new project and just got validation from VCS and CCB, more information about the benefits sharing and use of carbon financing is not yet available.

Section IX. Lessons Learnt and Recommendations

REDD+ has been implemented at three levels, international, national and project (sub-national) level. For international level, it involves the negotiations with global institutions such as the UNFCC, the UN-REDD program and the World Bank's FCPF. For national level, the consultations were made among the related ministries such as FA, FiA and MOE. Also there was the establishment of National REDD+ Taskforce for managing the REDD+ program in Cambodia. As at project level, all the three REDD+ are implemented as project level. Although, the three REDD+ projects are under the supervision of FA, Pact Cambodia was the main body that led and implemented the pilot project in Oddar Meanchey, while WCS was the main actor for the Seima pilot project. Meanwhile, these Oddar Meanchey and Seima REDD+ project got supports and involves from various national and local organization (Ngoun, 2014). All the three projects have been worked well in engaging local communities, and getting their supports and involvement.

For methodology, all the three REDD+ projects excluded planned (authorized) deforestation from their baseline. As for carbon pools selected in the project, even there are six different pools to be measured including above ground biomass, belowground biomass, dead wood, litter, soil organic carbon, and harvested wood, all the projects included only maximum three pools, namely aboveground biomass, belowground biomass, and deadwood. As in Tumring REDD+, only two carbon pools were included; aboveground biomass and belowground biomass (noticed that the first draft of Tumring included standing deadwood, but this pool was considered insignificant in validated document). The REDD+ project implementation timeframe of Oddar Meanchey and Tumring is 30 years, and 60 years for Keo Seima; therefore, including more carbon pools would yield more emission deduction over the timeframe.

The REDD+ project has been considered and committed by RGC and related partners. Since the readiness phase of REDD+, RGC were very actives in communication, consultation with relevant stakeholders of international level and forest related institutions at national level. Therefore, many REDD+ initiatives and pilot projects

has been implemented. However, due to complicated process of REDD+ projects development and getting them verified by VCS and CCB, up till now there are only two REDD+ projects got verification and one REDD+ project got validation from VCS and CCB. Hence, the national level including National REDD+ Taskforce and international organizations should put more effort in speeding up the REDD+ projects implementation in order to get them verified by VCS and CCB, as well as get them sold as soon as they are validated or verified. The longer the project prolongs without carbon finance, the more difficult to sustain the operation of the project.

The main challenge for all the REDD+ projects development is the investment cost in Project Design Document Development (PDD), Validation and Verification. Due to this challenge, several REDD+ initiatives could completed only their feasibility study, and/ or PDD, and failed to get validation or failed to proceed further process. Based on annual report of Forestry Administration on Korea-Cambodian REDD+ joint project in Tumring, it is estimated that 45% of the total investment funding from Korea Forest Service is gone to third party to develop PDD, validation, and verification. And getting carbon credit registration on the international voluntary market will cost additional fee charge according to market standard (Forestry Administration, 2016). Hence, before starting the REDD+ projects, project proponents should critically consider about the finance supports that they have or they can earn from different sources and how far the projects can reach. Or all the project proponents who have the same objectives should focus on one or two REDD+ projects together rather than work on different projects at the same times and cannot complete the whole procedure.

REDD+ project requires significant of resources and time to development as an example in Oddar Meanchey, Mondulkiri and Kampong Thom province. Even Oddar Meanchey REDD+ project is the first REDD+ project in Cambodia and got the Gold level from CCB alliance's standard for its exceptional social and biodiversity benefits, there is not yet any finance generated from selling carbon credits. However, this REDD+ project has provided non-monetary benefits such land tenure registration, using mosquito nets to prevent domestic animals from insects and saving energy by using feulwood efficient cook stoves. For Keo Seima REDD+ project in Mondulkiri, the carbon credits were sold to the Walt Disney Company in the amount of US$2.6 million worth of 360,000 tonnes of carbon emissions to offset its global carbon footprint in 2016 (Seangly & Kotoski, 2016). It was stated that 50% of revenue from REDD+ projects will benefit to local people; however, the formal documentation on how the revenues are distributed yet to be found. As Tumring REDD+ project have just got validation in June 2018, it will be able to sell carbon credits after registration of Verified Carbon Units (VCUs). According to lesson learn from Oddar Meanchey REDD+ project, alternative benefits (non-monetary) (i.e. land tenure classification, social capital enhancement, and increasing resource use for local people) and finance besides selling carbon credits such as income form entry fee of tourists, payment for

ecosystem services (PES) and job opportunities (ecotourism, forest tracking, bird and animal watching) should be considered more. PES and ecotourism could be used as the alternative option in case the carbon credits could not be sold.

Community forestry can be considered as the most effective and cost efficiency approach to address deforestation and forest degradation. Among the three projects studied, Oddar Meanchey and Tumring REDD+ project are implemented in community forestry. Though, the huge fund and sufficient supports from different donors are still needed. And the finance from selling carbon credits has been expected to be the main source to sustain the long term of REDD+ project implementation. Therefore, some activities in Oddar Meanchey REDD+ projects are pending since there are no carbon finance revenues. Thus, the backup plan for such this situation is necessary to maintain the project life.

All the three REDD+ projects studied include three benefits such as climate change, biodiversity and community benefits. Since the main focus of the REDD+ project is to protect and to preserve the forest from degradation and deforestation, biodiversity will be protected along with the protection of forest. The community benefits are to improve livelihood and land tenure status, but the main motive for this improvement is to protect forest from local illegal logging or encroachment, and encourage them to participate more in forest protection. Therefore, it should not be expected REDD+ as the main tool for poverty deduction.

CHAPTER 05

The assessment of existing benefit sharing mechanisms in forestry and REDD+ Projects forward designing an effective national REDD+ incentive allocation in Cambodia

Chapter 05

The Assessment of Existing Benefit Sharing Mechanisms in Forestry and REDD+ Projects Forward Designing an Effective National REDD+ Incentive Allocation in Cambodia

Executive Summary

REDD+ countries which implement REDD+ under UNFCCC are intending to achieve Warsaw Framework for REDD+'s requirements by completing four key elements, SIS, NFMF, NRS/REDD+ action plans, and FREL forward receiving result-based payment. However, although REDD+ countries received payment under REDD+ mechanism, countries need to address an issue of incentive allocation (or benefit sharing mechanism) to pay for REDD+ efforts which will be delivered effectiveness, efficiency, and quittable to stakeholders in addressing drivers of deforestation and forest degradation. In addition, REDD+ countries may also receive funds from bilateral, multilateral and development partners for upfront implementation of national forest program or actions for demonstration activities to pilot projects, enhance capacity and incentivize future results-based payments. REDD+ countries are required to develop a system for allocation of incentives and distribution of benefits.

Since, the government of Cambodia adopted the National REDD+ Strategy (2017) and being develop sub-national REDD+ investment plan (or REDD+ management plan at the sub-national), Cambodia's NRS is aiming to establish national REDD+ fund and incentive allocation mechanism (or benefit sharing mechanism) appropriate to its national circumstances, and requirements. In doing so the mechanism should build on the principles of effectiveness, efficiency, and equity as a recommended best practice in REDD+ by CIFOR 2012. This assessment report aims to review existing benefit sharing mechanism (BSM) under Community Forestry (CF), Community Fishery (CFi), Community Protected Area (CPA) and Voluntary REDD+ Projects in Cambodia. The experience and lesson learn were analyzed to propose principles; guidelines equipped with actions to enhance government policies to address an issue of REDD+ benefit sharing mechanism in Cambodia.

Section I: Background

The Cancun Agreements issued at the Conference of Parties (COP) 16 held in Mexico in 2010 provide strong support for policy approaches that deliver positive incentives for countries and their actors to engage in REDD+ (reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries). Thus far, a number of decisions related to REDD+ have been made on subjects including implementation, principles and safeguards, assessment of results, and reference levels. However, decisions are yet to be made regarding how to deliver positive incentives allocation (benefit sharing) for countries and their involving actors to reduce emissions from the forest sector through REDD+ implementation activities. As of now, it is up to each country to decide upon how REDD+ should be implemented within the framework agreed, including issues related

to how to distribute benefits at the national, regional and local levels, considering their national circumstances but also following inter alia the safeguards listed in the Cancun Agreement. Forests support the livelihoods of millions of rural indigenous peoples and communities who depend on forest resources for subsistence and income. Given the importance of forests for rural livelihoods, participating countries are required to apply safeguards in order to ensure "full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities" in REDD+ (as stated in the Cancun agreement).

The application of such safeguards is not only an important means of avoiding and mitigating possible negative impacts of REDD+ on these people but it can also serve to promote their active participation in forest and land conservation, as well as to reducing rural poverty which may contribute to achieving long term sustainable management of forests and carbon sequestration. On the contrary, the failure to involve local people and institutions in REDD+ and benefit sharing may risk lowering their incentives to engage in sustainable forest and land management, and thus may undermine the ultimate purpose of REDD+. Hence, it is imperative that indigenous peoples and local communities are also included in benefit sharing and that benefits are distributed in a manner that are equitable, transparent and cost-effective equitable.

Benefits are not limited to a monetary value but also include non-monetary values that may arise from improved forest governance. For instance, effective forest policies, programmes and measures to achieve REDD+ goals may not only generate income from carbon related payments but also deliver a broad range of multiple non-monetary benefits. REDD+ can contribute to new job opportunities, clarification and likely issuance of land tenure for communities and increased rural incomes and preservation of important ecosystem and environmental services and biodiversity.

The Royal Government of Cambodia (RGC) is a signatory to the United Nations Framework Convention on Climate Change and is a REDD+ partner country. The objective of REDD+ is to reduce emissions from deforestation and forest degradation, and the conservation, sustainable management of forests and enhancement of forest carbon stocks. REDD+ participant countries shall be eligible for Results-Based Payments (RBP) for verifiable emission reduction and/or enhanced carbon stocks.

Cambodia has taken a first step towards getting ready for REDD+ through the REDD Road Map and with the support of UN-REDD and other supporting frameworks are building capacity to plan and implement REDD+. Two REDD pilot projects commenced in 2008 and 2009 and it is expected that the different actors involved in forest and land use planning need further capacity building including an improved understanding

of benefits sharing, multiple benefits and costs associated with REDD+. In 2017, the NRS was adopted by the RGC, confirmed its REDD+ implementation at the national level under result-based payment mechanism of the UNFCCC, however Cambodia will consider implementation of sub-national and voluntary market-based REDD+ projects subject to specific criteria[viii] . The NRS aims to achieve a key milestone by 2026. The objective of NRS is to reduce its annual deforestation by half compared to the rate during the FRL period of 2006-2014, reduced emission would be eligible for results-based payment.

To achieved the objective above and while enhance strategy to seek for financial payment from UNFCC, the RGC with financial support and technical support from UNDP-FCPF, had enhanced institutional capacity, promote awareness raising among stakeholder holders, conducts wide range of PaMs to address driver of deforestation and forest degradation, while develops systems and policy to meeting the requirements from UNFCCC toward receiving results based finance for the efforts in reducing deforestation and forest degradation in the country. The GCF was tasked by UNFCCC to serve as financial hub and channels finance to develop country to address climate change, is meant to provide and catalyse necessary finance to support countries in achieving their targets under the Paris agreement, where countries committed to lower emissions and limit global temperature rise by 2°. The GCF aims to deliver equal amounts of funding to mitigation and adaptation, while being guided by the UNFCCC's principles and provisions[ix]. These funds are meant to be used to build institutional and regulatory frameworks, help local organisations apply for direct access accreditation, support development of a pipeline of projects and engage the private sector.

At its fourteenth meeting, the GCF Board requested the Secretariat to develop a request for proposals (RFP) for REDD+ results-based payments (RBPs), including guidance consistent with the Warsaw Framework for REDD+ and other REDD+ decisions under the UNFCCC.[x] The objective of the RFP pilot programme for REDD+ RBPs is to operationalize REDD+ results-based payments and test the procedural and technical elements of RBPs using the GCF resources in the learning stage.[xi] This piloting programme for results-based payments, a $500 million USD programme, will run until 2022.[xii]

Is important to highlight the GCF acknowledges it does not currently have a full procedure or process for countries to meet and access REDD+ Results Based Finance, but rather interim arrangements. This mainly because GCF policies and procedures were designed for upfront investments, whereas the REDD+ RBP pilot programme will include payments for results from investments which were made in the past. Accordingly, the application of such policies and procedures to projects whose implementation period has passed will need to be considered when operationalizing the proposed pilot programme. When submitting proposals to the GCF, they must

meet the following criteria:

By the time of submission of a Concept Note, the following information related to UNFCCC requirements, including the elements reflected in decision 1/CP.16 paragraph 71, should be in place and made publicly available (e.g. on the Lima REDD+ Information Hub):

1. The National REDD+ Strategy (or Action Plan);
2. FREL/FRL that is applied to the results period for which payments are sought are submitted to the UNFCCC and have undergone the Convention's Technical Assessment[xiii] of FREL/FRL;
3. National Forest Monitoring System (description provided in the BUR Annex);
4. A safeguards information system (SIS) to inform how the safeguards are addressed and respected, and a summary of information on how all the Cancun REDD+ safeguards were addressed and respected.

Why REDD+ benefit sharing is a matter?

A decision on how to distribute benefits and to whom and in what form sat different levels will require careful analysis of possible options suitable to the national circumstance of Cambodia. For this reason, there is a need to assess and learn from national as well as international experiences with regard to benefit sharing mechanisms used in the forest sector (e.g. Payments for Environmental Services (PES) and REDD+ pilot projects). Such decisions will also require extensive consultation with relevant representatives of government at national, provincial and local levels as well as discussions with all relevant stakeholders in order to ensure a common understanding and broad acceptance of a benefit sharing mechanism that is suitable for Cambodia. At the same time, ensuring the full and effective participation of all relevant stakeholders will contribute to avoiding the creation of unrealistic expectations about REDD+ benefits which in some cases has been noted as a problem in the past.

An important component of a REDD+ project is the benefit sharing of carbon revenues among stakeholders on a manually agreed system. This is to ensure that local communities actually benefit from their participation in project development and implementation that results in the reduction of deforestation and forest degradation and related emissions. Under a national REDD+ mechanism, clear guidelines and regulations would rule on the manner in which REDD+ revenues that accumulate should be transferred to different national, provincial, district and community stakeholders who are responsible for actually decreasing carbon emissions and deforestation. Since Cambodia does not yet have a fully operational national REDD+ mechanism, however, the IFWRD will lead the effort to develop draft guidelines and regulations that will be used to govern the manner in which REDD+ revenues might be distributed to provinces, districts, and communities.

Since the province is the jurisdictional unit that will generate carbon credits in this project, REDD+ revenues may also accrue directly to the province. The initial focus, therefore, will be on how the province might establish and operate a benefit-sharing mechanism within the province. As a secondary focus, the IFWRD will draft national regulations for review and possible adoption by the Cambodian government to effectively and equitably distribute REDD+ revenues. Aside from the REDD+ implementation under UNFCCC, various models of REDD+ implementations are existing in Cambodia, these modalities were seen in the form of national REDD+ implementation program, voluntary REDD+ project, and bilateral REDD+ projects. Those models being discuss by stakeholders and high senior government officers on how to nest those models together under national REDD+ program, serval issues need to be addressed both political and technical issue.

One the proposal on nesting REDD+ approach being proposed by difference REDD+ implementer, an issue on benefit sharing from REDD+ was a part of the issues, whether:

- What is the benefit from the implementation REDD+ program?
- Who would be a right beneficiary to received REDD+ benefits?
- What are the decision mechanisms in distributing? and
- What are the government policy and regulation to facility an effective REDD+ BSM?

To ensure REDD+ benefit will be shared effective, sufficiency and equity in address drivers of deforestation and forest degradation in Cambodia. A part of the supporting activities of ITTO-REDD+ Project is to conduct an assessment on existing REDD+ mechanism sharing mechanism and community based national resource management in Cambodia toward proposing principles and rule for REDD+ benefits sharing at national level.

Section II: Objectives and Scope

The objective of this assignment is to review lesson learn from difference model of benefit sharing mechanism both in REDD+ project and community base national resources management in Cambodia, and propose principle and rule for REDD+ BSM in Cambodia. The scope of this assignment is only conduct desk review and conduct consultative meetings and consultation with stakeholders, the reviews mainly focus

Table 1: Case reviewed under the assessment report

No.	Community Based-Natural Resource Management	Methodology	Funding Sources	Status
1	Community Forestry	CF guideline	Donor and Government funding	Received formal agreement
2	Community Fishery	CFi guideline	Donor and Government funding	Received formal agreement
3	Community Protected Area	CPA guideline	Donor and Government funding	Received formal agreement
No.	**REDD+ Projects**	**Methodology**	**Funding Sources**	**Status**
1	Oddar Meanchey REDD+ Project	VCS & CCB-MV0006	Donor based funding	First VCUs issued in 2015
2	Keo Seima Wildlife Sanctuary REDD+ Project	VCS & CCB-MV00015	Donor based funding	2nd VCUs issued
3	Southern Cardamom REDD+ Project	VCS & CCB-VM0009	Donor based funding	Under validation
4	Prey Lang Joint Credit Mechanism-REDD+	JCM-REDD+ Meth	Public and private funding	PDD being develop
5	Tumring REDD+ Project	VCS & CCB-MV0009	Bilateral Funding	Completed validation and preparation for verification

on model of benefit sharing within the cases reviewed which are shown in Annex VI.

Methodology and Approach

The assessment was conducted followed three key steps: Step1: conducted literature review based on case study, research papers, various reports published, based on the review, the consultant drafted a first draft of the report for the Project Manager of ITTO for his technical review and feedbacks. The following step is, once inputs and feedback received from the ITTO-PM, the consultant conducted a revision of the first draft of the assessment. Step2: the consultant conducted stakeholder interview and consultative meetings with stakeholders. Feedback and inputs from stakeholder used to revise second draft of the assessment report, and follow the final step is report validation meeting which is the final draft of the report to be submitted to ITTO-PM

for his approval.

Section III: Results and Discussion

3.1. Existing Benefit Sharing Mechanism under CF, CFi and CPA

A. Prey Kbal Bai Community Forestry

The Prey Kbal Bai CF offers one example of benefit sharing options used under Community Forestry, this CF was established in 2008 with 248 families participating, a total of 317 people. It is located in Snay village, Kampong Svay commune, Kampong Thom province, covering 678 hectares. The CF members and CFMFC have developed their own mechanisms of sharing benefits derived from: 1) tree planting project, 2) CF products, and 3) Tree nursery group following the Internal rule as follows CF regulation. Benefits derived from project such as tree planting project will be used to cover costs for seedling transportation, tree planting arrangement; tree planting labors; and administration. According to the CF rules, 30 % of benefits derived from CF products, i.e. income from selling the forest products, will be transferred to CF Development Fund and 70% will be transferred to CF members who are involved in those activities and 40 % of benefits (in the form of seedlings) produced by the tree nursery group will be planted in CF areas; 60 % of the seedlings will be sold and 20 % of the income generated from this sale will be used for maintaining a tree nursery and the balance 80 % will be distributed among the tree nursery group members.

B. Thmat Poy Community Protected Area

The Thmat Poy Community Protected Area (CPA) provides another example of benefit sharing options used under Community Protected Area. It was established in 2003, located in Pring Thom commune, Churm Ksan district, and Preah Vihear province. This CPA generates income from ecotourism by watching birdlife (Troryorng Yak and Troryorngchamkomkorsor). In 2010 only 95 tourists visited the CPA, generating revenues of USD3,310, but by 2013 the number of tourists had increased to 163, generating revenue of USD 17,034. The CPA members have agreed that the revenue generated from eco-tourisms is to be used for:

- USD 10,500 for road construction in 2 Km;
- USD 6,600 for building 6 wells

- USD 800 as contribution to school, pagoda, and others.

C. Chey Sen Community Fishery

The Chey Sen Community Fishery is located in Kopong Plunk Commune, Siem Reap Province. The community members have developed Community Fishery by-law and regulation in 2013. In 2016, the community received legal community fishery agreement from the government to manage the flooded forest and wetland for 15 years contract. The area was managed for tourist purpose to generate income support daily livelihood of fishery families (community members), while sustainable fishery resources for their subsistence uses. Benefits (monetary) earnt from tourist activities, according the rules, 70% percent were hand-over to fishery household (who directly serve tourist), and 30% pay to Community Fishery Fund to provide support to community fishery household to conduct patrol to crack-down illegal fishery and illegal flooded forest clearing, while amount of fund pay for administrative.

3.2. Voluntary REDD+ Project

A. Oddar Meanchey Community Forestry REDD+ Project

The OddarMeanchey Community Forestry REDD+ pilot project was introduced by the Community Forestry International and jointly launched with the Forestry Administration (FA) in February 2008 as the first REDD+ pilot project in Cambodia. The project area is located in northwestern Cambodia, covering 13 community forestry sites with a total area of 64,318 hectares and 58 villages with a total number of about 10,000 households. Since 2009, Pact has served as an implementing partner in collaboration with the 13 Community Forestry Groups, Terra Global Capital (TGC), Children's Development Association (CDA), Monks Community Forestry and local authorities. The goals of the project include: 1) mitigation of climate change impacts by sequestering 8.3 million tons of carbon dioxide (over 30 years); 2) improvement of local livelihoods; and 3) protection and enhancement of forests and biodiversity. Over its 30-year crediting period, the project is expected to generate approximately 8 million tons CO2e of emission reductions.

Proposed OMCF-REDD+ shares of incentives among stakeholders

Pact devised a draft 30 years budget plan that includes information of percentage share of payment received from the carbon market among different stakeholders. This proposed plan is still subject to the approval by the RGC. The plan includes the following as beneficiaries, some of whom are considered as beneficiaries simply because of the nature of voluntary market projects.

- TGC, with the role of facilitating the carbon assessment and accounting to be validated under VCS and CCBA and the carbon credit sale to potential buyers;
- The Forestry Administration with the role of an appointed agency that sells forest carbon credits in Cambodia to the buyers under VCS voluntary market;
- Local governments with the role to protect CF areas from intruders and regulate land conflicts;
- Pact (international NGO) with the role of a project implementer;
- CDA (local NGO) with the role of liaising and coordinating all local actors; and
- CF groupswith the role of patrolling, assisting natural regeneration, replanting, preventing forest fire and sustainably extracting NTFPs

According to the budget plan, a total of 84% of the payment will be deducted from the payment to support implementation and transaction costs for TGC, FA, PACT, CDA and CFN. In consequence, 16% of the net income is left for distribution among 13 CF groups. The budget plan does not include local governments as beneficiaries. Benefit-sharing encompasses not only financial benefits, but also social and environmental benefits as well. These may include employment opportunities, skills training, empowerment of vulnerable populations, and better protection of forests and the environmental services they provide. This document sets out the terms and provisions for a benefit-sharing mechanism to be reviewed by all key stakeholders.

Proposed use of incentives by community forestry groups

The official letter issued by the RGC (No. 699 dated 26 May 2008) provides further guidance that net revenues (after implementation and transaction costs are subtracted) should be used for the following three types of activities:

1. Maximize incentives to communities for livelihood improvement (e.g. through a community development fund);
2. Develop new REDD+ project initiatives by expanding REDD+ areas; and
3. Improve forest quality in the project area.

Since the project inception, community members have been informed that they would receive payments under the voluntary market project, and this enhanced their motivation to participate in the project. However, communities were not informed about the precise amounts of payments that they would receive or how these payments would be distributed among the community.

The delay in payments did not match the expectations of the community and this led to a decline in community interest and motivation and affected the quality of their engagement in the project. Nevertheless, members of the community forestry group have received both non-monetary and monetary benefits:1) non-monetary benefits, such as NTFPs for daily use, and improved tenure rights through a 15- year agreement between FA and thirteen CF Groups.2) monetary benefits, such as the revenue from the sale of NTFPs.

Propose Fund flow in OMCF-REDD+ Project

The specific benefit-sharing mechanism and how funds will be channeled to Project Stakeholders, including the TWG F&E, FA, Pact, Terra Global Capital (TGC), local NGO partners, and Community Forest Management Committees (CFMC).

Step 1: Transfer of Funds from the Buyer

Verified Carbon Units (VCUs) will be deposited on the Markit Registry following the project verification which occurs every two years. Upon the delivery of the VCUs and satisfaction of the Buyer's requirements, funds will be transferred by the Buyer to the designated project bank account(s), through the use of escrow accounts setup with the Registry. The TWG Secretariat will confirm and circulate information on the transfer to the Implementing Partners to inform them on the date and amount of the transfer.

Step 2: Delivery of TWG Secretariat and FA Management Costs

The TWG plays an important role in channelling the carbon revenues to the Implementing Partners, and the FA plays a critical role in implementing and monitoring the project activities and the associated budgets. Sufficient resources in the TWG are necessary to ensure that these tasks are carried out efficiently and effectively. Based on a pre-approved budget, 5 percent of the revenues will be allocated to the TWG and FA to cover the office running costs, travel and equipment. The TWG and FA are responsible to determine the most effective way of supporting the critical human resources for the project, understanding that these funds will also be subject to external audit.

Step 3: Delivery of FA Implementation Costs

Based on a previously approved annual budget and workplan, funds will be disbursed by the TWG to the Oddar Meanchey FA Cantonment Office via bank transfer. These funds will be used to fulfill the responsibilities of the FA Cantonment in implementation, including forest law enforcement and forest restoration, among others. In addition to its regular reports, the FA Cantonment shall provide a quarterly financial and narrative report specific to the project funds to the TWG and copied to the Implementing Partners.

Step 4: Delivery of Project Funds to Implementing Partner

Based on a previously approved annual budget and workplan, which are part of a deliverables-based contract, funds will be disbursed by the TWG to the project Implementing Partner (IP) by bank transfer. The IP will utilize these funds for direct implementation as well as capacity development and sub-grants to local partners - such as Children's Development Association (CDA) and Community Forestry Network (CFN), whose work will be closely monitored by the IP. The IP will provide a quarterly narrative and financial report to the TWG based on the achievement of deliverables. The IP will deliver both funding and technical support to the local level. Some of this funding will provide employment for local people to engage in project activities, such as forest patrols, tree planting, forest carbon monitoring, etc, according to the project workplan. Regular meetings and trainings will serve to improve skills and coordination while building local management capacity of the community forests. These are amongst the many non-monetary benefits that OM CF REDD+ stakeholders will enjoy.

Step 5: Net Income

According to preliminary financial projections, the project will generate net income (revenue remaining after project costs are covered) after approximately 4-6 years. This net income shall be allocated according to Govt. Decision 699 and the existing Agreement between the Forestry Administration and Terra Global Capital (date: 30 March, 2009). As mandated, a minimum of 50% of net income must be delivered to local communities for community development. The remainder may be allocated by the FA to new REDD+ and/ or improved forest quality projects. The TWG will decide how the net income shall be divided between the three major priorities of community benefits, new REDD projects, and improved forest quality as specified in Government Decision No. 699 by assigning a percentage proportional to each priority. The proportion of benefits assigned may be reviewed and revised on an annual basis in consultation with the members of the TWG. (The TWG may consider establishing an endowment fund for after the project is completed).

A small grants mechanism will be provided to support the 13 Community Forestry (CF) groups in the project with criteria based on a set of parameters established by the Project Team. CFMCs will be eligible to apply for support for a range of activities related to rural development, and they will be responsible to draft brief applications. CFs with weaker skills in project proposal development shall be provided with training support. A provincial-level Grants Fund Board with participants from the local FA, local NGOs, and CFN shall be convened to evaluate proposals and deliver funds. The communities

shall be eligible to apply for grants based on a semi-annual funding cycle. The Fund Board will aim to allocate grants equitably among the 13 communities, based on a set of criteria to be developed by the Fund Board in consultation with local communities. These criteria could include population size, forest area protected and performance, strength of application, etc. Funds allocated to improve forest quality and support other REDD+ initiatives beyond Oddar Meanchey will be allocated by open bidding managed by the TWG F&E.

Step 6: Reporting

An international standard financial audit will be conducted annually for OM REDD project activities and payments. The TWG Secretariat will have responsibility for contracting the auditor. The auditor shall have access to all relevant project partner accounts, including accounts of the TWG, FA, Pact, and other partners. A summary of the resulting auditor's report shall be made posted on the internet and made publicly available. Additional information on the effectiveness of the established benefit-sharing mechanisms will be collected at the annual project meeting and through an independent project evaluation (scheduled to take place every three years). The results of the audit reports, IP reports, and evaluations will be available to the public through the TWG website.

B. Seima Wildlife Sanctuary REDD+ Project

The Seima Protection Forest REDD+ pilot project was initiated in July 2008 by the Wildlife Conservation Society (WCS) in collaboration with FA. Implementing partners included local NGOs such as the Cambodia Rural Development Team (CRDT) and the Community Legal Education Centre.This project aims to support protection of old-growth forests 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. It is also home to a population of approximately 10,000 Bunong IPs, who have been living in 20 villages across the landscape. They rely heavily on forest resources and practice traditional swidden agriculture. Since January 2010, the Seima project has sought to secure validation and verification under the VCS and CCB standards, with validation that took place in November 2013. While the crediting period continues for 60 years, it is estimated that the project will generate approximately 58 million tons CO2 of emission reductions over its first ten years.

Sales of carbon from Seima pilot project has not taken place and thus no monetary incentives have been distributed amongst those who have participated in the development and implementation of this project. Yet, in terms of non-monetary incentives, the project sought to secure usufructuary rights of local communities to timber and NTFPs, and their customary tenure

on agricultural, fallow and residential lands through its indigenous communal titling support. This process entailed mapping communal lands in collaboration with communities and developing the legal documents needed to request communal land titles from the government. In contrast with the Oddar Meanchey case, the project implementer, WCS, was highly cautious about raising any expectation among local communities about monetary incentives. In fact, the project places a strong emphasis on non-monetary incentives such as secure tenure, improved forest conditions, and employment opportunities. Even when they refer to monetary incentives, they are mainly mentioned as collective incentives or in-kind incentives that would contribute to forest

Table 2: Support made to participated community under REDD+

Category	Examples of incentives type for communities
Core state forest management activities *Not conditional on behaviour.*	- Continued and secure access to natural resources, including non-timber forest resources such as resin, that may otherwise be destroyed - Secure and formal property rights to land and forest resources - Equitable zoning and access systems for communities with rights of use - Improved forest quality - Employment in community-based patrolling and monitoring
Alternative livelihood projects *Needed in part to reduce drivers of deforestation at source. Some could be made conditional on behaviour.*	- Community livelihood development, e.g. livestock raising, agricultural intensification, savings groups and/or micro-finance for enterprise development - Financial incentives and increased community empowerment and capacity - Most likely administered through a „community development fund „at the village or project level. - Some incentives could be awarded at the household level
Other incentives *These only affect deforestation through conditionality, and so all should be conditional.*	- Additional incentives payments for conservation activities or outcomes - This might be a bonus payment for exceptional performance, awarded to households or villages - Could include support for public services that are not alternative livelihoods per se, for example roads, health clinics, schools, other infrastructure

Sources: *adopted from Keo Seima WS REDD+ Project Monitoring Report (2016)*

management activities, alternative livelihood activities, and other benefits

C. Cambodia-Korea REDD+ Joint Project

The Forest Administration (FA) signed a MoU with Korea Forest Service (KFS) on 10th December 2014 to implement the project namely Korea-Cambodia Reducing Emissions from Deforestation and Forest Degradation (REDD+) Joint Project (KCRP). The project is implementing within 4 years (2015-2018) which covers an area (PA) of 67,791.17 hectares in Kampong Thom province, and Project Accounting Area (PAA) is 41,195.00. FA is an implementation agency with financial support from Korea Forest Service (KFS), and Wildlife Works Carbon (WWC) is a project carbon developer. The project aims to contribute to the long-term greenhouse gas emission reduction from forestry sector and enhances livelihood of targeted forest-depended community in the project area through the implementation REDD+ program. The project is seeking for certification under VCS and CCBA standard for issuing its REDD+ verified credits. The project is expected to generate net annual emission reduction (NERs) of 385,333 tCO2e, and 11,559,975 tCO2e over 30 years (2016-2025) of the project life, the project received successful validation on Sept 2018 by the third party SCS, currently the Project Manage Unit (PMU) is working closely with its KFS, WWC, and Community Forestry groups to prepare for project verification, as planed the verification will be taken place by late of 2019.

Proposed benefit sharing mechanism for Tumring REDD+ Project

Cambodia-Korea REDD+ is a bilateral REDD+ Project between the RGC and ROK, piloted REDD+ project to seek for VCS &CCB's certification. The final objective of this project is to generate VCUs under VCS&CCB standard, in the MoU singed in December 2015, both parties agreed to share a proportional of VCS, each count has right to use the shared VCUs. ROK confirmed its VCUs will be use to meet ROK's NDC as part of the mitigation (international offset). Cambodia side is in the process of revising its NDCs and considering REDD+ as part of its NDCs.

D. Joint Credit Mechanism for REDDD+

UNFCCC's decision 1/CP.18 para 41, acknowledges that Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets and non-markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries. JCM was an initiate of Japan government and it aims to contributes to the ultimate objective of the UNFCCC by promoting private sector contributions under bilateral cooperation. Under JCM, Japan confirms the use of

JCM outcomes to meet its Higher Ambition of it NDC. Japan will achieve the target of 26% reduction through domestic emission reductions and removals without using international credits while the amount of credits acquired by Japan under the JCM will be counted as Japan's reduction. It was expected that 10 million tCO2 to be realized by 2030 from the JCM pipeline projects. Implementation of JCM projects is to be scaled-up through further mobilize resources of private sectors.

Cambodia was selected by Japan as one of the 17 JCM partnered countries, on 11th April 2014, both Japan and Cambodia signed an MoU on the Low Carbon Growth partnership, it aims to investment and development of low carbon technology. In 2015, the first meeting JCM joint committee (JC) (Cambodia and Japan) was conducted. The JC set between the 2 countries functions to develop Rules and guidelines, approve methodologies & projects, and 3rd party Entities for validation & verification and registry system. By 2018, in Cambodia, 6 JCM Projects being implement in main sector (forestry, energy and water resources). JCM REDD+ was among 6, the implementation of JCM-REDD+ is follow the adopted JCM+REDD+ guideline (i.e Project Validation and Verification, Safeguard, PDD development, and Registration).

About Prey Lang JCM REDD+

This is a partnership project between MOE, CI and Mitsui & Co., LTD. The partnership agreement was made in 2017. The project financed by Mitsui & Co., LTD for the implementation in three phases. Within phase 1, the Mitsui being make payment with an amount not to exceed US$ 1,221,004 (the "Project Fund"). The amount of the Project Fund for the Patrol Activities to be paid to MoE shall not exceed US$ 600,000; the amount of the Project Fund for the Support Activities to be paid to CI shall not exceed US$ 196,204; and the amount of the Project Fund for the JCM Activities shall not exceed US$ 424,800. Mitsui being make payments of the Project Fund to an account to be designated by CI, the CI is responsible for paying the applicable Project Funds to MoE for the Patrol Activities under the terms of the Funding Agreement. In no case shall Mitsui be responsible for making any payments to MoE in connection with the Project.

The Project consists of two main groups of activities:

(i) Conservation of the Sanctuary through actions of the Parties to prevent deforestation including the Patrol Activities and Support Activities, and
(ii) Implementation of such REDD+ project under the JCM in connection with

the JCM Activities.

Proposed benefit sharing under JCM-REDD+ in Cambodia

Since Japan has decided to utilize JCM credits to meet its higher ambitious of its NDC. The benefit sharing (JCM-REDD+ verified emission reduction) will be shared between both countries (Cambodia-Japan), the decision-making on JCM-REDD+ credits sharing will be made by JC. The JCM registry system will be set up to tracking the exchange of JCM-REDD+ ER, the system will also be disclosed for the public.

Section IV: Discussions

4.1. Lessons from community based natural resource management in Cambodia

- Legal rights of the community to own the resources (forest, land and fishery) is a legitimate measure and provide secure ownership to community and it is strongly connected with benefit sharing under REDD+.

- Clear Plan and Define clear type of benefits, experience from CF exemplifies the importance of developing a clear plan for the purposes and proportion for which different types of benefits should be shared.

- Income from tourisms constitutes important income sources for villagers under community protected area and community fishery. Experiences show that such incomes may be distributed for activities that contribute to the entire community such as construction of roads and wells, and schools, as well as for individuals who have contributed to eco-tourism works.

- Effective participation from local stakeholder, to ensure community members effectively participate in resources management, thus there is need to enhance both information dissemination and increase awareness raising of local community what type of benefits to be generated from their resource management and engage them in the whole process of designing benefit sharing from resource management.

4.2. Lessons from REDD+ Projects in Cambodia

- High transection cost and complicate procedure require by voluntary REDD+ standard, major investment cost and require high technical expert,

especially national expert. Minimizing transaction costs is important to maximize incentives to be distributed to communities, OMCF-REDD for instant. In consequence, local communities, actual protectors of forests, receive considerably little rewards (less than 20 %) compared to other stakeholders. Thereby, minimizing transaction costs is important to allow for maximum incentives to be distributed to communities.

- The government is an official owner of all VCUs thus government is leading actor in sharing benefit generated under various modality of REDD+ implementation in Cambodia.

- High expectation from local stakeholders on fund from REDD+, raising high expectation from REDD+ benefit among stakeholders especially local community will post high risk of whole REDD+ mechanism and create conflict among actors that involve with REDD+ implementation.

- Non-monetary incentives as important REDD+ incentives for communities: In both cases (community fishery, community fishery and Community Protected Area), one of important incentives that REDD+ for communities is found to be non-monetary incentives such as secure tenure for local communities.

- Forest land tenure right was one of the key criterial for REDD+ benefit sharing under REDD+, it means that actors who have legal right to manage resources might have more change to get benefit than those without.

- Agreed on REDD+ fund management mechanisms, without an agreement among actors on REDD+ management mechanism, it will create risk of corruptions and will be led to miss use of REDD+ funds in the future (monetary benefits).

- The risk of raising expectation for monetary incentives. As the OMCF-REDD+ case indicates, raising expectation about financial payment that would come through REDD+ implementation is a double-edged sword for project proponents. While on the one hand, the promised of financial payment helps project proponents attract enthusiasm and participation from various stakeholders. If their motivation to forest management becomes closely tied to financial payment, and if the project takes longer than expected to deliver the payment and the payment amounts are small, the project proponents may struggle to maintain those enthusiasm and participation in the end. It is therefore extremely important for project proponents to be strategic and careful about how much and when to divulge information on financial incentives to their stakeholders, although how this can be done without violating the stakeholders' right to Free, Prior, and Informed Consent is hard to envisage.

Section V. Propose Principles, Elements and Guideline for designing REDD+ fund allocation and benefit sharing system

5.1. Principles

REDD+ countries can decide how REDD+ funds should be distributed at the national, regional and local levels. Existing literature on REDD+ proposes that the system for allocating REDD+ funds, in the form of incentives and benefits should build on the three principles of effectiveness, efficiency and equity (e.g. CIFOR 2012):

- Effectiveness: that incentives serve to reduce maximum possible emissions
- Efficiency: that incentives contribute to reducing emissions in a manner that minimizes costs (while being consistent with a rights-based approach).
- Equity: that incentives are shared in a fair and equitable manner particularly for the benefit of the most vulnerable.

The Cancun Agreement adopted at COP16 in Mexico, 2010 provides additional guidelines and states that REDD+ actions should be "used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits" (the Cancun Safeguards (e)). Decisions about the allocation of national funds, considered to be a part of REDD+ actions, also need to consider best options for incentivizing local actions that contribute to the protection and conservation of natural forests, ecosystem services, and the enhancement of social and environmental benefits. The Cancun Agreement further states that REDD+ actions should adhere to the following safeguards principles:

- Transparent and effective national forest governance structures
- Full and effective participation of all relevant stakeholders
- Respect for the knowledge and rights of indigenous peoples and members of local communities.

5.2. Design elements

Existing literature on REDD+ benefit sharing point to several inter-linked issues that need to be taken into consideration in designing a national benefit sharing approach for REDD+.

Define REDD+ beneficiary

REDD+ implementation will involve a range of stakeholders such as national, sub-national government, community institutions and NGOs.

- National independent agencies are required for functions such as decision making on allocation of funds
- National government agencies may take a primary role of designing and implementing national level, or programmatic REDD+ Policies and Measures (PAMs)
- Subnational government agencies provincial, district and commune level government may take a lead role in implementing PAMs, for instance, through strengthening forest patrolling, law enforcement, and clarifying tenure and demarcating forest boundaries, reforestation, etc.
- Local actor communities, Indigenous Peoples, landowners, NGOs, and the private sector may engage in the implementation of local REDD+ measures, for example, protecting these areas against encroachment and illegal logging, participating in reforestation.

Costs for benefit sharing and REDD+ management

These stakeholders and institutions are likely to bear variable costs for REDD+ implementation such as transaction costs that are fixed costs associated with the national REDD+ programme, such as the costs of implementing the NFMS and SIS, and the costs of operating institutions associated with implementation. Implementation costs are costs incurred for implementing policies and measures to reduce emissions or to promote conservation and sustainable management of forests. Some of these are programmatic in nature, for example, support to implementation of measures under the National Forest Programme and the National Protected Area Strategic Management Plan, and support to forest law enforcement. Costs of providing incentives to stakeholders to undertake actions to reduce emissions are also included.

There may be other activities that the RGC may decide to consider in allocating REDD+ funds. A portion of the funds may be allocated to cover some of transaction costs that may incur from operation of national funds, national forest monitoring system, safeguard information system, funding of the taskforce, Secretariat, and the Consultation Group. Part of the funds may be allocated to cover implementation costs of the key policies and measures selected under a

REDD+ national strategy. These may include

- Key national policies such as the national forest programme, upcoming national protected area strategic management plan, and fisheries plan.
- In addition, activities to incentivize local actions to reduce emissions will also be financed.

Funds allocated for these activities will be decided by the RGC and such decisions will also give consideration to the amount of REDD+ funds available at the national level. Nevertheless, the maximum possible amount of funds should be targeted at activities to incentive local actions to reduce emissions that will support implementation of key PAMs to effectively reduce GHG emissions from the forestry sector. For example, a national REDD+ strategy may identify strengthening of forest law enforcement and local forest tenure as key PAMs, which implementation of the National Forest Programme as a priority. National agencies and sub-national governments would receive funds to cover partial transaction costs associated with REDD+ operations. For implementing PAMs, there may be a range of actors that would become eligible recipients depending on the decision of the national REDD+ strategy regarding key PAMs. If the strategy identifies clarification and strengthening of local forest tenure as a key measure for REDD+, fund recipients would be national and sub-national governments in the form of budgetary support for example to CF, CPA and CFi as local communities and Indigenous Peoples are ultimate beneficiaries from improved local forest tenure. Likewise, if strengthening forest law enforcement is identified as a priority, national and subnational government may receive budgetary support to implement appropriate measures.

Define basis for allocating benefits of REDD+

To allocate funds and share benefits in an effective, efficient and equitable manner, clear and objective criteria has to be developed. Such criteria can use outputs or inputs-based approaches that are directly linked to the primary objective of reducing emissions, protecting and conserving natural forests and ecosystem services, while enhancing social and environmental benefits.

- Output performance-based approach refers to allocation of funds based on measurable impacts, such as the amount of emissions reduced
- Input-based approach refers to provision of funds based on inputs of time and costs.

An output-based approach can be advantageous as it builds on actual impacts related to forest carbon. However, assessment of reduction of emissions at

a scale and location relevant to eligible actors can be expensive as it requires assessment of baseline data on forest carbon volume and regular monitoring. Alternative measures could include assessment of forest extent and quality, and of social and environmental benefits, such as increased household incomes, narrowing poverty gap, and improved agricultural productivity.

Due to high costs associated with the output-based approach an input-based approach that builds on simpler measurements of time, number of trees planted, may be preferable. A combination of input-and output-based approaches could also be used depending on the types of actions. For afforestation, the extent of new forests could be measured. In contrast, incentivization of reduction in forest degradation may require input-based measures initially, observing changes in forest quality will only be possible over time relative to forest type and level of degradation.

With both approaches challenges remain in determining the magnitude of benefits to be allocated to stakeholders to incentivize actions that provide optimum results. These challenges can be mitigated, firstly, by ensuring decision on incentives are conservative, as a subsequent reduction in levels of incentives is likely to be a major de-motivation factor for local stakeholders. Secondly, piloting of REDD+ interventions, supported by research on impacts can clarify the relationship between actions and results. Finally, as desired impacts yield broad societal benefits, mainstreaming of incentivization so that costs are not solely dependent on REDD+ revenues will become important.

Define clear type of benefits

In the REDD+ context, benefits refers to both monetary and non-monetary benefits (USAID 2012, CIFOR 2012).

- Monetary benefits refer to cash, that may be payable to individuals or collectives -- communities, management committees, etc.
- Non-monetary benefits can be classified into direct and indirect benefits. Direct benefits accrue from REDD+ activities such as increased job opportunities; enhanced availability of NTFPs, fuelwood and fodder; improved public infrastructure; and improved forest tenure. Implementation of REDD+ may generate increased employment opportunities at national and sub-national level.

Landowners, local communities and indigenous peoples could benefit from secure tenure rights to forests and forest products; increased availability of fuelwood, timber and NTFPs due to improved condition of forests. Indirect

benefits include improved ecosystem services and associated environmental benefits such as supply of clean water, and enhanced biodiversity. Since planning for REDD+ implementation will necessarily involve local consultations as part of the Free, Prior and Informed Consent process, views on benefits can be obtained through the same process. The mechanism for delivery of cash incentives will be through financial institutions. Recipients would have to be legal entities that can receive money, and this would require eligibility criteria.

Mechanisms for REDD+ benefit distribution

Distributing non-monetary is more challenging as incentives related to livelihood or agricultural productivity training would need to be delivered by an institution that could be a government extension service, an NGO, or a private sector entity. The most appropriate delivery agent and mechanism would need to be developed. Delivery of incentives in the form of improved social infrastructure would be the responsibility of local government agencies, as also, private sector entities could be considered. To minimize risks delivery of the incentives would need to be monitored. The REDD+ grievance mechanism would serve as a safeguard.

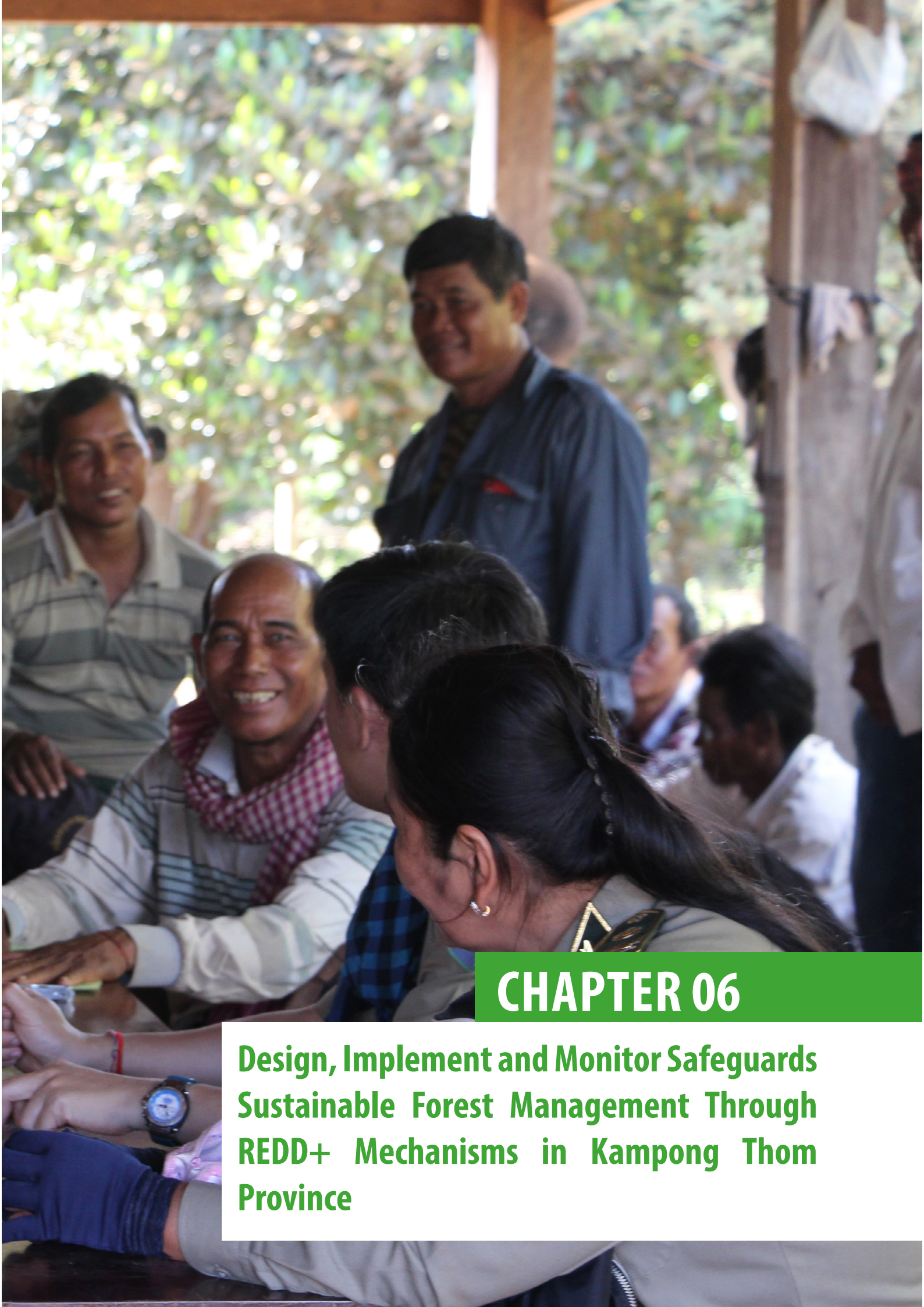
The basis for sharing benefits is diverse and include

- **Contracts:** Experience with CF, CPA and CFi indicate that formal recognition of forest tenure for communities is a lengthy process. The three cases in Cambodia - community forest, community protected area, and community-based ecotourism - all shared benefits from forest products, and, revenues from eco-tourism based on a formal contract between governments and communities with the aim of sustainably managing forests.
- **Outputs:** this model has not been implemented in Cambodia
- **Proposals:** This model have been tested by donor funding project such as USAID, others international NGOs.
- **Social criteria:** social criterial had been show case in Community Forestry's regulation, where vulnerable household or women head household shall receive benefit higher than normal household, and less requirements from CF regulations on resources used.

Section VI. Alternative Policy for designing National REDD+ BSM

The following next steps are recommended for designing a national system for benefit sharing for REDD+ Cambodia:

- Formulate Policy and/or Prakas to define key policies and measures (PaM) to be used under REDD+ through the national REDD+ Action Plan including the development of REDD+ actions to be implemented at sub-national level.
- Select activities to be used for incentivizing local actions. Identification of PAMs will enable selection of activities and targeted beneficiaries for incentivizing local actions to reduce emissions.
- Select basis and data on which decisions for distributing benefits will be made. Based on the selection of key activities and targeted beneficiaries to deliver incentives, subsequent decisions need to be made regarding the basis and data to be used for decisions on benefit sharing.
- Design a system to collect and monitor data and distribute benefits based on the collected data.
- Once the above decisions have been made, decisions should be made on how to collect and monitor data and distribute benefits. The system must ensure that beneficiaries are incentivized in an appropriate manner and at the proper time. The design of such as system needs to be assigned to an independent body which is not eligible to receive incentives. This could be contracted to an agency responsible for forest monitoring.
- As a next step a national consultation should be held where the approach for Cambodia can be discussed and validated, and consensus developed for next steps that will contribute to the design of a benefit sharing mechanism for inclusion in the National and sub-national REDD+ action plan.



CHAPTER 06

Design, Implement and Monitor Safeguards Sustainable Forest Management Through REDD+ Mechanisms in Kampong Thom Province

Chapter 06

Design, Implement and Monitor Safeguards Sustainable Forest Management Through REDD+ Mechanisms in Kampong Thom Province

Section 1. Background

1.1. REDD+ Evolution at Global Level

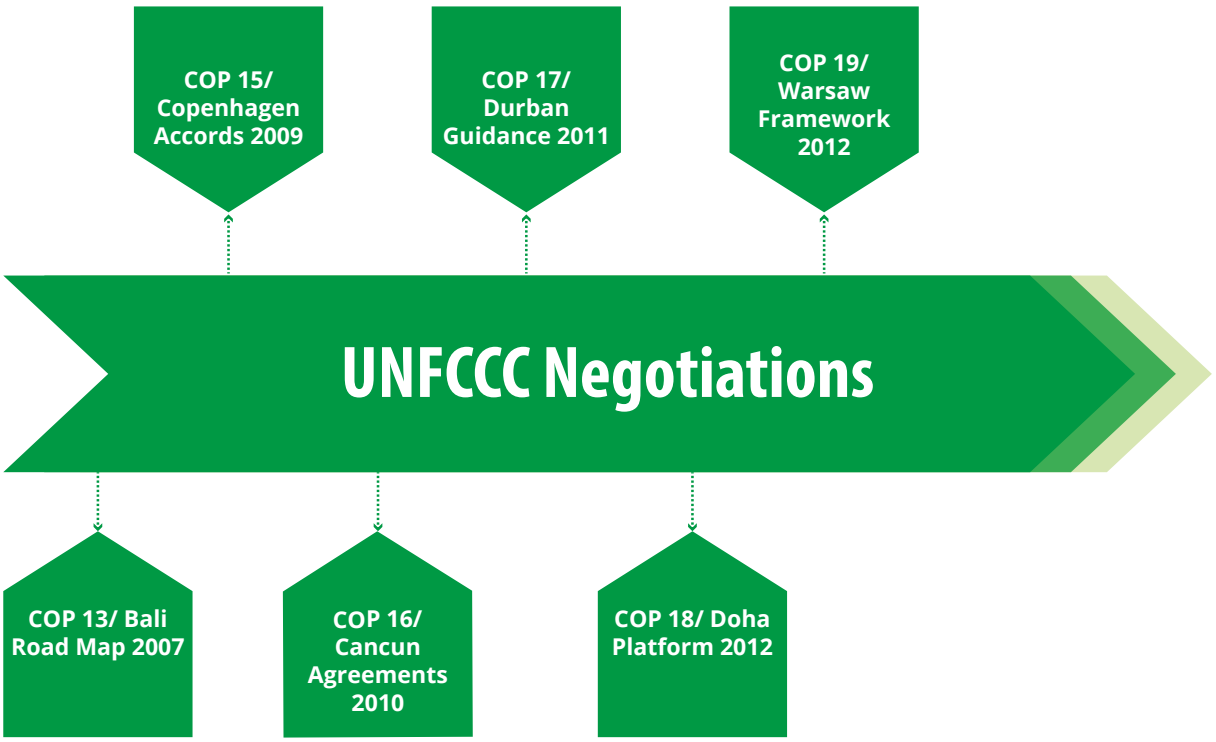
Tropical forests are among the most important and complex ecosystems on Earth. They provide a wide range of environmental services, including biodiversity conservation, water supply management, carbon sequestration, flood control, and protection against soil erosion and desertification[xiv] . About 10 million people worldwide are employed in forest management and conservation and it is estimated that 1.6 billion people – including more than 2,000 indigenous cultures – depend on forests for their livelihoods[xv] . Similar to other natural resources, tropical forests have also been under increasing pressure from human activities. They continue to disappear at an alarming rate, leading to substantial decreases not only in biodiversity but also the carbon contained therein[xvi] . This decline in forested areas has also negatively affected the livelihoods of forest-dependent communities. Increasing recognition of these issues has resulted in growing attention on forests at the United Nations Framework Convention on Climate Change (UNFCCC). Starting in 2007, within the broader context of climate adaptation and mitigation discussions, member countries of the UNFCCC have been actively negotiating a policy initiative that entails development and implementation of projects that would contribute to solving these forest-related problems. That initiative is now known as REDD+. According to the UNFCCC, REDD+ is officially defined as "policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries"[xvii] .

As a concept, REDD+ has been considered a success because it has ushered in a new approach to environmental governance for participating countries to address tropical deforestation and global climate change issues with large-scale result-based financing as its defining characteristic[xviii] . The 2010 annual meeting of the UNFCCC in Mexico represents an important milestone in this respect as it recognizes the climate change mitigating role of forests in developing countries and the corresponding need for international financial support for developing countries to reduce their deforestation rates[xix] . The three major issues discussed at the subsequent UNFCCC meeting in South Africa in 2011 were: the structure and governance of the Green Climate Fund, which represents the long-term finance commitment of USD 100 billion by 2020; the role of private sectors in the international climate change negotiations; and the design of an effective regime for forest-based climate change mitigation and adaptation, particularly policy for REDD+ development and implementation. At the 2012 UNFCCC meeting in Qatar, member countries reaffirmed that a significant share of new multilateral funding

for adaptation will flow through the Green Climate Fund.

This possibility of substantial international payment to address deforestation, climate change and its associated issues has attracted approximately 50 countries to pilot over 300 REDD+ projects across the globe[xx] . Table 1 presents the list of countries that have been receiving supports from either and/ or both the UN-REDD Programme and the World Bank's Forest Carbon Partnership Facility (FCPF) to get ready for REDD+. Finally, at the recent 2013 UNFCCC meeting in Poland, seven decisions were adopted under the Warsaw Framework for REDD+ that should guide the implementation of the UNFCCC REDD+. This last UNFCCC negotiation has been considered as the key to completing the building blocks for the global architecture for REDD+.

Figure 1: The evolution of REDD+ negotiations at the UNFCCC



Sources: *Author's construction based on information collected from desk review*

Table 1: REDD+ participating countries

UN-REDD Programme Countries (n=12)	Both UN-REDD and FCPF Countries (n=23)	FCPF's Participant Countries (n=13)
1. Bangladesh 2. Bhutan 3. Côte d'Ivoire 4. Ecuador 5. Mongolia 6. Nigeria 7. Pakistan 8. Philippines 9. Solomon Islands 10. Sudan 11. Sri Lanka 12. Zambia	13. Argentina 14. Bolivia 15. Cambodia 16. Central African Republic 17. Colombia 18. Costa Rica 19. Democratic Republic of Congo 20. Ethiopia 21. Gabon 22. Guatemala 23. Guyana 24. Honduras 25. Indonesia 26. Kenya 27. Mexico 28. Nepal 29. Panama 30. Papua New Guinea 31. Paraguay 32. Peru 33. Republic of Congo 34. Tanzania 35. Vietnam	36. Cameroon 37. Chile 38. El Salvador 39. Ghana 40. Lao People's Democratic Republic 41. Liberia 42. Madagascar 43. Mozambique 44. Nicaragua 45. Suriname 46. Thailand 47. Uganda 48. Vanuatu

Sources:
1. UN-REDD Programme http://www.un-redd.org/Partner_Countries/tabid/102663/Default.aspx
2. World Bank's FCPF https://www.forestcarbonpartnership.org/redd-countries

Table 2: Warsaw Framework for REDD+

Decisions	Descriptions	Links
9/CP.19	Work programme on results-based finance to progress the full implementation of the activities referred to in decision 1/CP.16, paragraph 70	English
10/CP.19	Coordination of support for the implementation of activities in relation to mitigation actions in the forest sector by developing countries, including institutional arrangements	English
11/CP.19	Modalities for national forest monitoring systems	English
12/CP.19	The timing and the frequency of presentations of the summary of information on how all the safeguards referred to in decision 1/CP.16, appendix I, are being addressed and respected	English
13/CP.19	Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels	English
14/CP.19	Modalities for measuring, reporting and verifying	English
15/CP.19	Addressing the drivers of deforestation and forest degradation	English

Sources: *UNFCCC (2013)*

It should be noticed that all 48 REDD+ participating countries, including Cambodia, are at various stages in regards to the development of national REDD+ strategies that will guide the implementation of REDD+ activities in their countries. These countries have also decided to follow the phased-approach as suggested by Angelsen and colleagues[xxi] in order to (1) design their national policies and measures for REDD+, (2) consult and build consensus with their stakeholders, (3) pilot or test REDD+ projects. This phased-approach is commonly known in the policy discussion as the three phases of REDD+, which include (1) the readiness phase, (2) the implementation phase, and finally (3) performance-based payments phase. Angelsen and colleagues (2009) recommended that sufficient flexibility should guide the overall design and the transitions between the three phases to accommodate the national circumstances of REDD+ participating countries. It is possible that country move from phase 1 to phase 2 if they can.

Table 3: Actions and corresponding financial instruments for the three phases

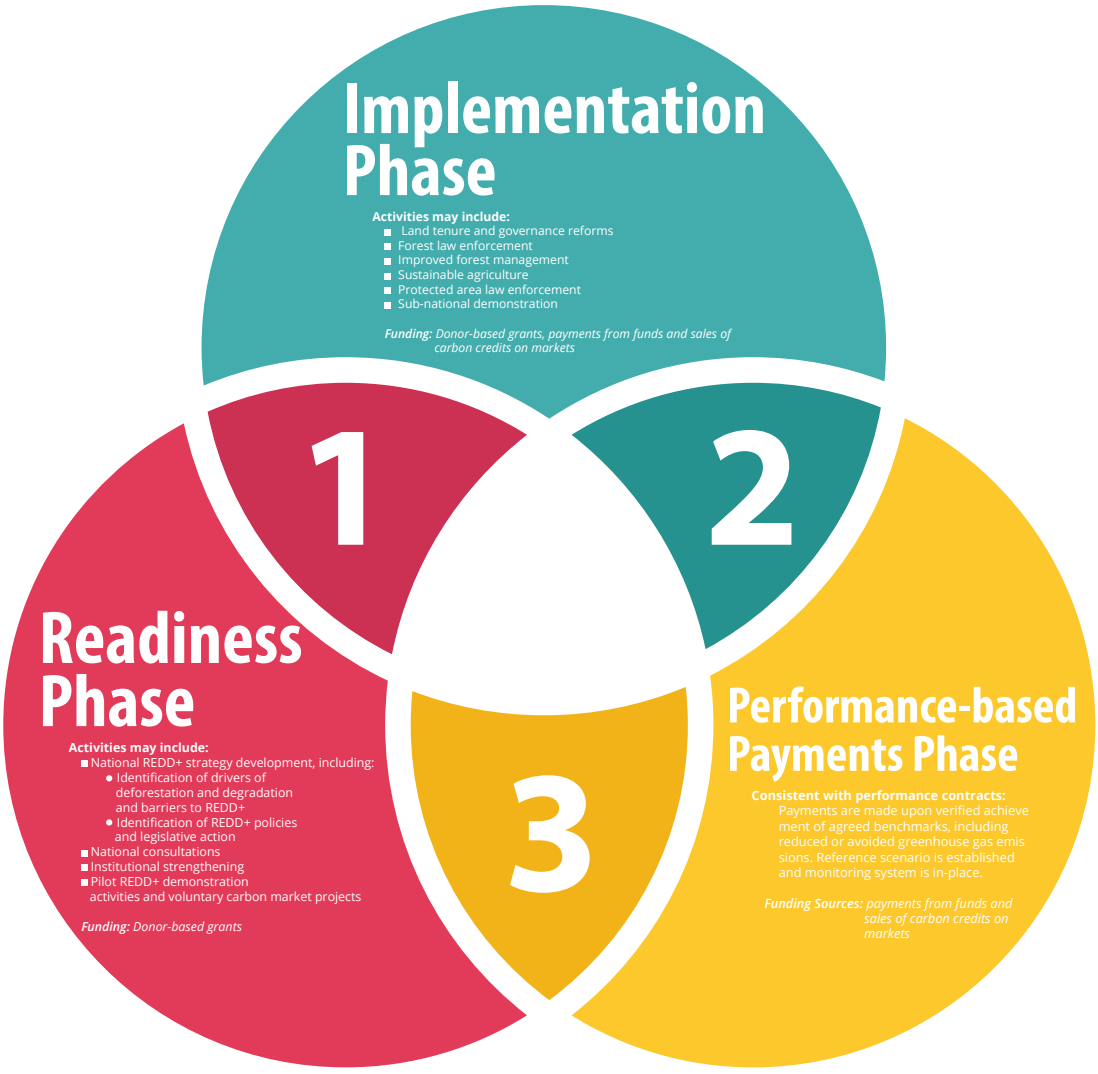
Phase	Scope	International Financial Instrument
Phase 1	National REDD strategy development, capacity building, institutional strengthening. Demonstration activities. Strategy development elements include, inter alia, reference level and monitoring, reporting, and verification (MRV) assessments and participation of indigenous peoples and local communities (see Chapters 3, 4, and 5, respectively).	Voluntary contributions. **Eligibility:** Demonstrated cross-sectoral commitment to REDD strategy development within the national government. **Examples:** Forest Carbon Partnership Facility of the World Bank (FCPF) and United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) "readiness" funding.
Phase 2	Implementation of National REDD Strategy PAMs. Strategy implementation elements include, inter alia, reference level setting, improvement of MRV, and participation of indigenous peoples and local communities.	Global facility (unitary fund, or clearinghouse that records eligible bilateral and multilateral contributions relative to binding commitments). **Eligibility:** Demonstrated cross-sectoral commitment to REDD strategy implementation within the national government. Continued access dependent upon performance, including proxy indicators of emission reductions and/or enhanced removals. **Example:** Brazil's Amazon Fund.
Phase 3	Quantified changes in GHG emissions and/or removals.	Transition from global facility to integration with compliance markets. **Eligibility:** Compliance-grade MRV and emissions/removals accounting relative to agreed reference levels.

Sources: *Angelsen and colleagues (2009)*

1.2. REDD+ in Cambodia

At the 2007 UNFCCC conference in Indonesia, the Royal Government of Cambodian (RGC) announced that Cambodia intends to implement REDD+ pilot projects. Since then Cambodia has been making significant progress towards establishing REDD+ national level coordination and arrangements. Similar to other REDD+ participating countries, Cambodia is following the three REDD+ phases, which include (1) readiness, (2) implementation, and (3) performance-based payment. As of 2019, Cambodia completed the readiness phase and conversations have started amongst the various groups of stakeholders on the how and when Cambodia is moving on the phase 2. The three phases of REDD+ in Cambodia. The figure includes information on activities and funding sources for each phase.

Figure 2: The 3-phase approach as applied in Cambodia



Sources: *Royal Government of Cambodia and UN-REDD Programme (2011)*

Box 1: REDD+ readiness achievements and gaps

National REDD+ Strategy

Achievements: The final document was approved by the RGC in December 2017 and a National Investment Framework is now being finalized.

Gaps: Very little REDD+ NS awareness in the general public, intensive engagement efforts are necessary. NRS lacks a financial instrument which can receive and channel RBPs to beneficiaries transparently and equitably and needs a stronger inter-coordination between ministries (especially MoE and MAFF). Non-forestry drivers also must be addressed to have a complete action towards drivers of deforestation and forest degradation.

National Forest Monitoring System (NFMS)

Achievements: The design of a National Forest Monitoring System was completed in September 2017.

Gaps: NFMS is not yet operational but for REDD+ needs to be fully operational, and formally institutionalised to support the development of the REDD+ Technical Annex as part of the BUR with REDD+ results at least twice over the project lifetime. Full LULUC assessment of the country needs to be undertaken to support implementing and reporting progress on the nationally determined contributions (NDC) in the land use, land use change and forestry (LULUCF) sector.

Forest Reference Emission Level / Forest Reference Level (FREL/FRL)

Achievements: FRL submitted to UNFCCC in 2016. The FREL comprises a deforestation baseline for 2006 to 2014 based on activity data from 2006 to 2014 (land use change maps). FRL will serve as the basis for measuring, reporting and verifying forest carbon emission reductions associated with implementation of REDD+ activities in the context of RBPs. The FRL is national.

Gaps: The FRL needs to be supplemented by results from a national inventory of forest biomass to obtain a more accurate and transparent estimate of (historical) emissions. The FRL may need to be adjusted in future to meet specific technical requirements established (e.g. by GCF) to access RBPs.

Safeguards and Safeguards Information System (SIS)

Achievements: Up to the end of 2018, significant policy analysis and consultations have been completed to design and establish an SIS.

Gaps: If it is not apparent that an SIS is ready for implementation. Cambodia needs to submit a summary of information on how UNFCCC Cancun Safeguards are addressed and respected in implementation of REDD+ activities. It lacks an SIS that addresses UNFCCC, GCF and other donors safeguard requirements (however the SIS is expected to be completed early 2019).

Sources: *Cambodia National REDD+ Strategy*

The RGC recognises that deforestation and degradation are significant sources of greenhouse gas emissions both nationally and regionally. As an active Party to the UNFCCC, Cambodia fully supports actions to reduce emissions and also wishes to implement more climate friendly sustainable management of tis natural resources, particularly concerning forest conservation and protection of biodiversity. Cambodia has been a strong supporter of the adoption of REDD+ and in started its REDD+ Readiness process in 2008; two REDD+ pilot projects were established the same year. The Cambodia REDD+ Readiness process was implemented from 2008 until 2016. In 2010, the National Roadmap was finalised and a National REDD+ Programme was established in 2012, leading to stakeholder engagement, capacity building and full implementation of institutional arrangements.

In 2014 preparation of the National REDD+ Strategy (NRS) started, considering the Cancun Agreement, Warsaw Framework and the Paris Agreement, as well as RGC policies, including the national Climate Change Strategic Plan (2014 – 2023). The product of the process is the National REDD+ Strategy 2017 – 2026, which sets out Cambodia's vision, mission and goals for reducing emissions from deforestation and degradation:

VISION: The vision of Cambodia's National REDD+ Strategy is to contribute to national and global climate change mitigation through improving the management of its natural resources and forest lands, and biodiversity conservation and sustainable development.

MISSION: The mission of the Strategy is to strengthen the functioning and capacity of national and sub-national institutions for effective implementation of policies, laws and regulations to enhance management of natural resources and forest lands, and biodiversity conservation.

GOAL: The goal is to reduce deforestation and forest degradation while promoting sustainable management, conservation of natural resources and contribute to poverty alleviation.

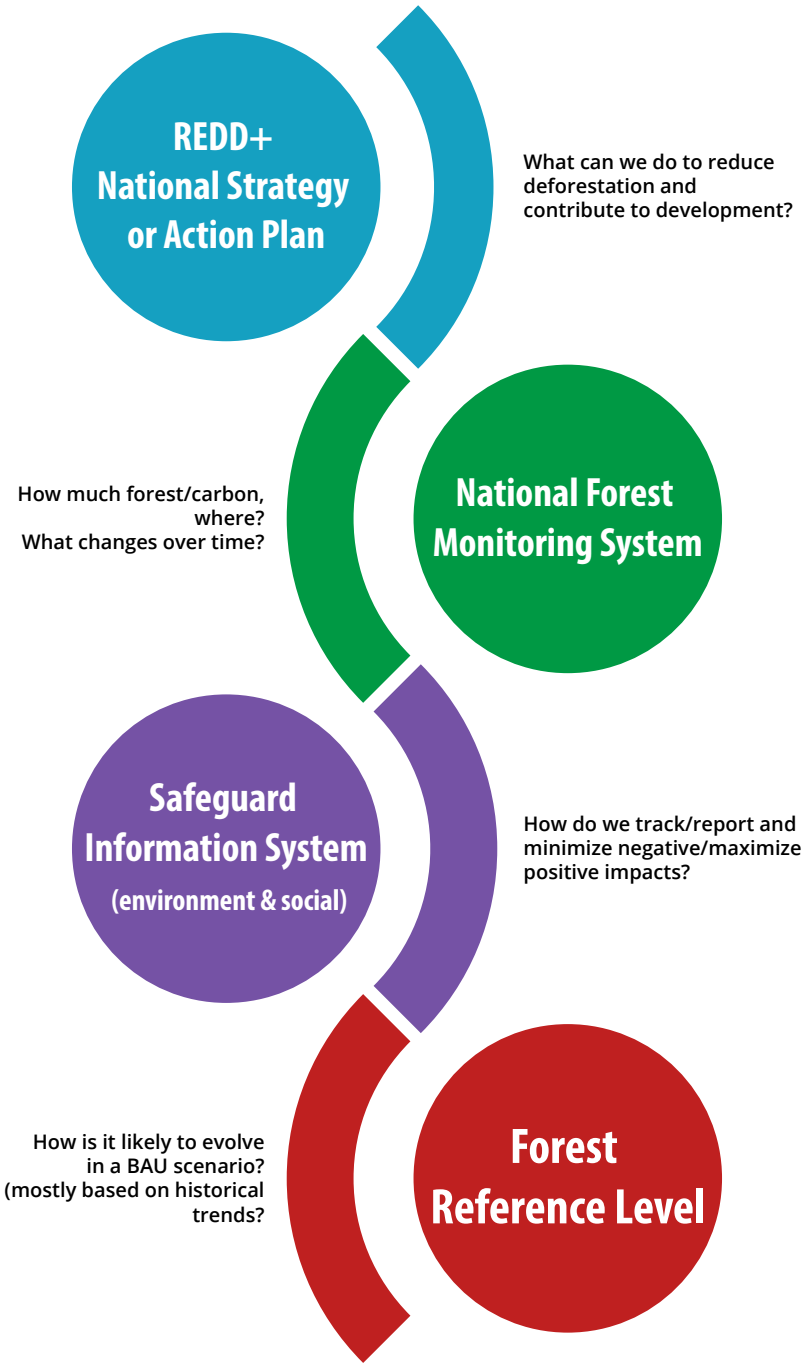
The NRS has three Strategic Objectives with 19 associated 'Strategies' as actions:

1. Improve management and monitoring of forest resources and forest land use
2. Strengthen implementation of sustainable forest management
3. Mainstream approaches to reduce deforestation, build capacity and engage stakeholders

The NRS is split into two phases for implementation, Phase I (2017 – 2021) is the development of an action plan, finalization of institutional arrangements and addressing drivers through existing laws, policies and institutions. Phase I NRS also

includes the prioritization of securing financial resources (non-results based) and updates to the Forest Reference Level (FRL), National Forest Monitoring System (NFMS) and Safeguards and Safeguards Information System (SIS) as part of the basic national REDD+ framework (Figure 3).

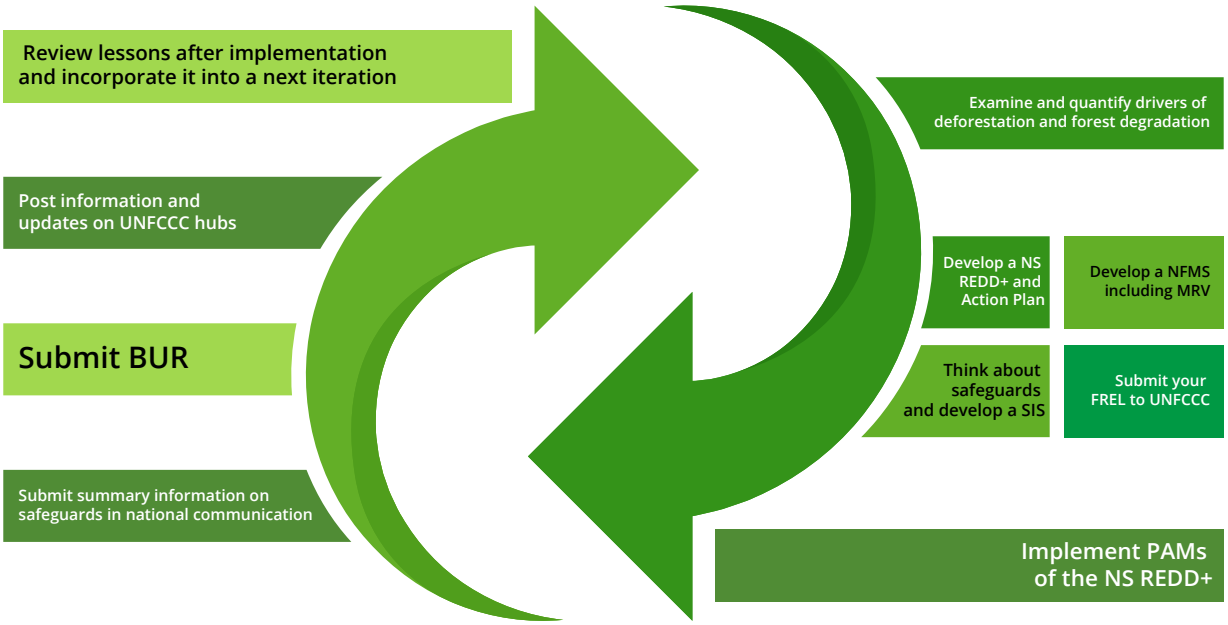
Figure 3: The Warsaw Framework for REDD+



Source: *Cambodia National REDD+ Strategy 2019*

Phase II of the NRS (2022 – 2026) will 'complete the transition from readiness to implementation and prioritize the achievement of measurable results'. It will include a review of Phase I and access forest and land cover change as well as establish a monitoring mechanism to address drivers of deforestation and degradation; compliance with the Warsaw Framework for REDD+ will be ensured. The intention is that implementation of the NRS will facilitate all steps needed to access 'results-based payments to be collected by Cambodia (Figure 4) and the steps or components completed, underway or to be implemented to allow for results-based payments to be sought, there are however some gaps, despite the considerable achievements.

Figure 4: Steps needed in order to access results-based finance (payments)



Source: *Cambodia National REDD+ Strategy 2019*

1.3. Objectives of this report

This report has four main objectives and is structured into 5 chapters, starting with this introduction as Chapter 1. The first objective, secttion 2, is to take stock of literature on the latest scientific knowledge and policy guidance at national and international level pertaining to development, implementation and monitoring of REDD+ Safeguards Information System (SIS). Section 3, the second objective, conducts an assessment of SIS that has been developed by the Cambodia National REDD+ Programme to reflect on the principles, criteria and indicators proposed under this national system. The third objective, section 4, is to assess the SIS that has been developed, implemented and monitored by the Wildlife Conservation Society for the Keo Seima Wildlife Sanctuary REDD+ Project to extract lessons learned from this local REDD+ intervention. Based on observations from section 2 to 4, the final objective of this report, Chapter 5, is to propose how a safeguards information system could be developed, implemented and monitored for Kampong Thom Province.

2. REDD+ Safeguards Information System: Global Assessment

2.1. Justifications for REDD+ Safeguards

According to the UNFCCC decisions, the term "safeguards" refer to principles to avoid or mitigate negative impacts of REDD+ while, if possible, ensuring that REDD+ deliver social and environmental co-benefits. REDD+ safeguards are mainly to address the following potential social and environmental concerns.

Social concerns: In developing countries, hundreds of millions of rural indigenous peoples (IPs) and local communities depend on forest resources for subsistence and income[xxii] . Yet, their rights to access, own, manage, and use forest resources have received limited legal recognition in many countries. There are the following potential social risks under REDD+:

Social risk 1: Adverse impacts on the livelihoods of IPs and local communities:

- ***Restriction and ban on their customary use of forests:*** REDD+ may not recognize their customary rights to territories and resources and may (further) restrict and prohibit their use of forests in order to sequester forest carbon[xxiii].
- ***Involuntary resettlement of IPs and local communities:*** In the worst case, they may lose customary access to forests and may even be forced to move out from the forests in which they presently settle.

Social risk 2: Exclusion and further marginalization of IPs and local communities (especially those who are most vulnerable) in decision making and benefit sharing:

- REDD+ may exclude IPs and local communities in decision making and benefit sharing[xxiv] . Even if they are included in these processes, socially vulnerable people such as the poorest of the poor, people of lower classes, and women may be excluded and further marginalized under REDD+[xxv].

Environmental concerns: Forests provide important ecosystem services such as supply of clean water, prevention of soil erosion, and preservation of biodiversity[xxvi] . Main environmental risks with REDD+ include:

Environmental risk 1: Conversion of natural forests

- REDD+ may be used for the conversion of natural forests into mono-

culture planted forests, with adverse impacts on existing ecosystem services and biodiversity[xxvii] .

Environmental risk 2: Displacement (of pressure to outside REDD+ areas)

- Efforts to reduce deforestation and forest degradation in one area may shift such pressure to forests located outside the REDD+ areas. For example, if REDD+ introduces restrictions on the use of a particular forest, those who used to use the forest (e.g. local communities, the private sector, governments) may exploit the forests in other areas[xxviii].

Environmental risk 3: Reversals

- Risk of reversals refers to the possibility that areas protected and treated under REDD+ will be deforested and degraded in the future after carbon accounting and accreditation is completed[xxix].

In this context, REDD+ safeguards have been developed to achieve the following goals:

1. Reduce risks: Safeguards are expected at minimum to avoid, eliminate or minimise the potential negative social and environmental impacts of REDD+.
2. Increase benefits: In addition to reducing risks, REDD+ actions are envisaged to provide co-benefits. Co-benefits generally refer to additional benefits – beyond carbon – including improved forest governance, securing and clarification of customary tenure rights for local forest-dependent people, creation of job opportunities and improved ecosystem services and biodiversity.

2.2. UNFCCC Decisions on REDD+ Safeguards

There are three UNFCCC decisions, namely Cancun Agreements, Durban Guidance and Warsaw Framework for REDD+, that provide important guidance for all countries to follow in designing and implementing REDD+ safeguards. The Cancun Agreements outline seven safeguards that REDD+ participating countries should promote and support under REDD+. Durban Guidance provides guidance for how to provide information on how safeguards are addressed and respected. The Warsaw Framework for REDD+ introduces an agreement that most recent summary of information on how all of the Cancun safeguards have been addressed and respected before REDD+ countries become eligible to receive results-based payments. The Framework also entails a decision on the timing and the frequency of presentations of the summary of such information. According to UNFCCC decisions, countries are to develop their own

country approach to safeguards involving work on 1) Policies, Laws and Regulations (PLRs); and on 2) safeguard information system. In the following section, the report introduces key safeguard principles and criteria proposed by different global initiatives. To make visible how they address different risks, the report divided the UNFCCC safeguards into two categories: governance and social, and environmental principles.

Box 2: Cancun Agreements (Decision 1/CP.16, Appendix I)

When undertaking the activities referred to in paragraph 70 of this decision, the following safeguards should be promoted and supported:

a. That actions complement or are consistent with the objectives of **national forest** programmes and **relevant international conventions and agreements;**

b. Transparent and **effective national forest governance structures,** taking into account national legislation and sovereignty;

c. **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 United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;

d. The **full and effective participation of relevant stakeholders,** in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of this decision;

e. That actions are consistent with the **conservation of natural forests and biological diversity,** ensuring that the actions referred to in paragraph 70 of this decision **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;**

f. Actions to address the **risks of reversals;**

g. Actions to reduce **displacement of emissions.**

Box 3: Durban Guidance (Decision 12/CP.17)

*Decision 12/CP.17 agrees that systems for providing information on how the safeguards referred to in appendix I to decision 1/CP.16 are addressed and respected should, taking into account **national circumstances and respective capabilities,** and **recognizing national sovereignty and legislation,** and relevant **international obligations and agreements,** and respecting **gender considerations:***

a. Be consistent with the guidance identified in decision 1/CP.16, appendix I

b. Provide transparent and consistent information that is accessible by all relevant stakeholders and updated on a regular basis;

c. Be transparent and flexible to allow for improvements over time

d. Provide information on how all of the safeguards are being addressed and respected;

e. Be country-driven and implemented at the national level;

f. Build upon existing systems, as appropriate.

Box 4: Warsaw Framework for REDD+ (Decision 12/CP.19)

1. Developing countries should provide **a summary of information** on safeguards, throughout the implementation of the activities;
2. The summary of information referred to the above should be provided periodically and be included in national communications, or communication channels agreed by the Conference of the Parties;
3. The summary of information could **also be provided, on a voluntary basis, via the web platform on the UNFCCC website;**
4. Developing countries should start providing the summary of information in their national communication or communication channel, including via the web platform of the UNFCCC **after the start of the implementation of activities;**
5. The **frequency of subsequent presentations of the summary of information** should be consistent with the provisions for submissions of national communications from countries not included in Annex I to the Convention and, on a voluntary basis, via the web platform on the UNFCCC website.

Figure 5: Proposed systems of safeguards (source: UN-REDD programme)

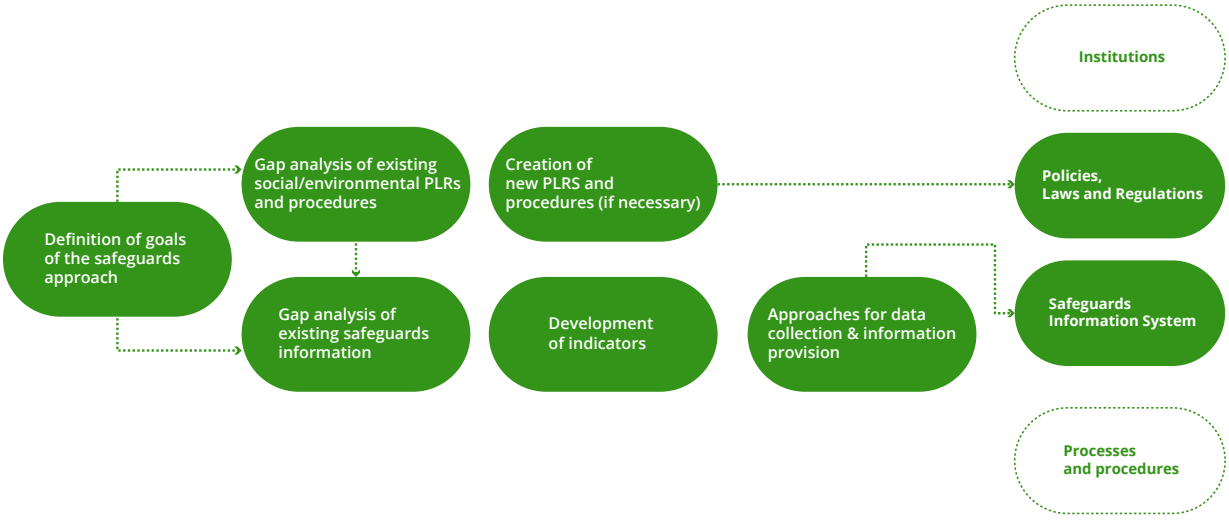


Table 4: Governance and social and environmental principles under the UNFCCC

Governance and Social Principles	• REDD+ activities and safeguards should take into account and be consistent with the objectives of national forest programmes and relevant international conventions and agreements • Transparent and effective national forest governance structures, taking into account national legislation and sovereignty • Respect for the knowledge and rights of IPs and members of local communities including the application of FPIC procedures, in reference to the UNDRIP • Full and effective participation of relevant stakeholders in REDD+, in particular IPs and local communities • Enhance social benefits

Environmental Principles	• Not to be used for conversion of natural forests • Address the risks of reversals • Reduce displacement of emissions • Conservation of natural forests and biodiversity and • Enhance environmental benefits (e.g. biodiversity and ecosystem services)

2.3. Key safeguard initiatives at the global level

Different safeguard initiatives for a national or sub-national jurisdictional level REDD+ are currently available at the global level. These are:

1. UN-REDD Programme: Social and Environmental Principles and Criteria (SEPC) and BERT
2. World Bank FCPF: Strategic Environmental and Social Assessment (SESA)
3. The Climate, Community and Biodiversity Alliance (CCBA) and CARE International: REDD+ Social and Environmental Standards (SES)

SEPC and SESA were proposed under UN-REDD and the World Bank's FCPF respectively which are major global institutions that assist developing countries, including Cambodia, to be ready for REDD+. The SEPC were developed as a guiding framework with the aim to assist participating countries in developing their own national safeguards with a complete coverage of the Cancun safeguards. The SESA has mainly been developed with the aim of meeting the World Bank Operational Policies and Procedures. Yet, while the World Bank developed the SESA to support countries to meet the World Bank safeguards, the concept/process behind a SESA can be used by a delivery partner for FCPF to support countries to meet the Cancun Safeguards (e.g. through the use of the SEPC/BERT). The CCBA and Care International's SES was developed as a result of extensive consultations with a range of stakeholders including civil society and the private sector. It is important note that this report does not include other safeguard measures such as VCS and CCBS that are developed for REDD+ at the project level since this report's primary aim is to assist development of a national approach to safeguards.

2.3.1. *UN-REDD: Social and Environmental Principles and Criteria (SEPC)* [xxx]

The UN-REDD Programme developed SEPC to provide a guiding framework for addressing social and environmental issues with the goal to assist the participating countries in developing their national approaches to REDD+ safeguards in line with the UNFCCC decisions. SEPC consists of 7 Principles and 24 Criteria. In addition to

the SEPC, the Benefits and Risks Tool (BeRT) has been developed to assist with the review and gap analysis of countries' PLRs in relation to these safeguards. The BeRT has been designed to help countries to ensure that there are PLRs that promote and support, and that aim to ensure that REDD+ activities are consistent with, the Cancun safeguards. This tool includes three modules, which focus on the identification of the following:

1. REDD+ actions
2. Potential risks and benefits from these actions, in relation to the Cancun safeguards
3. Policies, laws and regulations (PLRs) relevant to these risks and benefits, in relation to the Cancun safeguards; as well as gaps in the PLRs that may need to be addressed

Box 5: Seven principles of UN-REDD SEPC

1. Apply norms of democratic governance, as reflected in national commitments and Multilateral Agreements
2. Respect and protect stakeholder rights in accordance with international obligations
3. Promote sustainable livelihoods and poverty reduction
4. Contribute to low-carbon, climate-resilient sustainable development policy, consistent with national development strategies, national forest programmes, and commitments under international conventions and agreements
5. Protect natural forest from degradation and/or conversion
6. Maintain and enhance multiple functions of forest including conservation of biodiversity and provision of ecosystem services
7. Avoid or minimise adverse impacts on non-forest ecosystem services and biodiversity

2.3.2. World Bank's Forest Carbon Partnership Facility (FCPF): Strategic Environmental *and Social Assessment (SESA)*

In principle, all countries that receive FCPF funding must comply with the World Bank's Operational Policies and Procedures. Relevant Operational Policies for REDD+ include:

- Environmental Assessment (OP/BP 4.01)
- Natural Habitats (OP/BP 4.04)
- Forests (OP/BP 4.36)
- Physical Cultural Resources (OP/BP 4.11).
- Indigenous Peoples (OP/BP 4.10)
- Involuntary Resettlement (OP/BP 4.12)

In order to comply with these operational policies and other relevant procedures, as a first step, countries need to conduct a Strategic Environmental and Social Assessment (SESA). SESA helps countries to identify potential environmental and social risks associated with REDD+ projects, i.e. whether or not REDD+ projects may violate any of the Bank's operational policies and procedures. Second, countries should develop an Environmental and Social Management Framework (ESMF) based on the results of SESA to present concrete strategies and means for addressing potential adverse social and environmental impacts for REDD+ activities. In the case where an organisation other than the World Bank is selected as a "Delivery Partner" for the FCPF, the Common Approach to Safeguards can be applied. Thus, delivery partners can use their own safeguards and mechanisms as long as they are substantially equivalent to, or more stringent than, the World Bank's standards. In the case of Cambodia, UNDP has been selected as a delivery partner for the FCPF REDD+ readiness project. Under the Common Approach, UNDP is able to use its own standards.[xxxi]

2.3.3. The Climate, Community and Biodiversity Alliance and CARE International: REDD+ Social and Environmental Standards (SES)[xxxii]

The REDD+ SES were developed as a result of a series of consultations with governments, NGOs, civil society organisations, IPs' organisations, international policy and research institutions and the private sector. The goal of SES is to provide a voluntary but comprehensive framework for safeguard measures that conform to the UNFCCC standards and serve as guidance for governments, NGOs, other agencies that implement subnational and national REDD+ programs. The SES comprised of 7 principles and 28 criteria to be applied for all countries that choose the SES as a safeguard tool. Indicators can be developed to fit with the context of a particular country, through a country-level multi-stakeholder consultation process.

Box 6: Seven principles of REDD+ SES

1. The REDD+ programme recognises and respects rights to lands, territories and resources.
2. The benefits of the REDD+ programme are shared equitably among all relevant rights holders and stakeholders.
3. The REDD+ programme improves long-term livelihood security and well-being of IPs and local communities with special attention to women and the most marginalised and/or vulnerable people.
4. The REDD+ programme contributes to good governance, to broader sustainable development and to social justice.
5. The REDD+ programme maintains and enhances biodiversity and ecosystem services.
6. All relevant rights holders and stakeholders participate fully and effectively in the REDD+ programme.
7. The REDD+ programme complies with applicable local and national laws and international treaties, conventions and other instruments.

2.3.4. Key principles/criteria included within SEPC (UN-REDD Programme), World Bank's), and SES (CCBA & Care International)

At minimum, RGC should address and respect the Cancun (UNFCCC) safeguards. This section presents how other global initiatives address Cancun safeguards in order to assist the government to take into consideration kinds of safeguard principles and criteria proposed at the global level. For the analysis, we categorised all key safeguard principles and criteria included under SEPC, SESA and SES according to the types of UNFCCC safeguards. As the below Table 5 shows, by and large, the three proposed systems for national safeguards address the seven UNFCCC safeguards although there are also differences in the kinds and degrees of concrete criteria that each safeguard framework calls for a national safeguard system.

Table 5: Comparison of SEPC, SESA and SES against Cancun safeguards

Cancun safeguards	SEPC (UN-REDD)	SESA (World Bank)	SES (CCBA and Care International)
Consistent with the objectives of national forest programmes and relevant international conventions and agreements Reflect the national circumstances and existing information structures	• Contribute to low-carbon, climate-resilient sustainable development policy, consistent with national development strategies, national forest programmes, and commitments and under international conventions and agreements (P3) • Ensure consistency with and contribution to o national climate policy objectives o national poverty reduction strategies and other sustainable development goals o national biodiversity conservation policies and other environmental and natural resource management policy objectives o international commitment on the environment (P4)	• R-PP to be structured to comply with the UNFCCC and all other relevant international and national agreements and laws	• Coherent with relevant policies, strategies and plans at all relevant levels (p4) • Contributes to achieving the objectives of sustainable development policies (P4) • Comply with applicable local law, national law and international treaties, conventions and other instruments ratified or adopted by the country (P4) • Respect, protect, and fulfil human rights (P4)
Transparent and effective national forest governance structures taking into account national legislation and sovereignty	• Apply norms of democratic governance (P1) • Ensure the transparency, accountability of fiduciary and fund management systems (P1) • Ensure legitimacy and accountability of all bodies representing relevant stakeholders including through establishing responsive feedback and grievance mechanisms (P1) • Promote coordination, efficiency and effectiveness among all agencies and implementing bodies relevant to REDD+ • Promote and enhance gender equity and women's empowerment (P2) • Promote and support the rule of law, access to justice and effective remedies (P1) • County specific indicators can be developed	• ESMF can be revised over time	• The REDD+ program contributes to good governance, to broader sustainable development and to social justice (P4) • The governance structure of the REDD+ program are clearly defined, transparent, effective and accountable(P4) • Improved governance in the forest sector and other relevant sectors (P4) • Effective coordination between agencies/organizations responsible for the design, implementation and evaluation of the REDD+ program and other relevant agencies (P4) • Finances of the REDD+ program are managed with integrity, transparency and accountability (P4)
N.A. (Additional)		• Identify, avoid and mitigate potential adverse impacts on the rights and welfare of the people who depend on forest including Indigenous Peoples (OP 4.10 and 4.36)	• Conduct transparent and participatory assessment of predicted and actual benefits, costs, and risks of the REDD+ program for relevant rights holder and stakeholders groups at all levels, in order to mitigate negative and enhance positive effects on them with special attention to women and marginalized groups (P2)
Respect for the knowledge and rights of IPs and members of local communities including the application of FPIC procedures, in reference to the UNDRIP	• Respect and protect stakeholder rights to land, territories and resources including carbon (P2) • Seek Free Prior Informed Consent (FPIC) (P2) • Ensure no involuntary resettlement (P2) • Respect ad protect traditional knowledge and cultural heritage and practices (P2)	• Pay special attention to the issues of land tenure, resource-use rights and property rights. Clarify and ensure their rights to land and carbon assets, including community (collective) rights (OP 4.10 & Guideline on stakeholder engagement). • Undertake free, prior informed consultation with affected Indigenous Peoples (OP 4.10) • Avoid or minimize involuntary resettlement and compensate those who are replaced (OP 4.12)	• Identify, recognize and respect both statutory and customary rights to lands, territories and resources of indigenous peoples or local communities (P1) • Where the REDD+ programs enables private ownership of carbon rights, recognition the rights based on the statutory and customary rights to the lands, territories and resources (P1) • Identify all rights holder and stakeholder groups and characterizes their rights and interests and their relevance to the REDD+ program (P6) • Require FPIC of Indigenous Peoples and local communities affecting their rights to lands (P1)

			• Respect, support and protect rights holders 'and stakeholders' traditional and other knowledge, skills, institutions and management systems (P1)
Full and effective participation of relevant stakeholders in REDD+	• Full and effective participation of relevant stakeholders in design, planning and implementation of REDD activities with particular attention to indigenous peoples, Local communities and other vulnerable and marginalized groups (P1)	• Involvement of stakeholders especially indigenous peoples in the preparation process to incorporate their views and concerns (OP 4.01) • Consultation and benefits to indigenous peoples (OP 4.10) • Inclusion of a broad range of relevant stakeholders for the consultation process at the national and local levels including indigenous peoples, forest dependent communities, women and other marginalized groups (Guideline on stakeholder engagement).	• Fully involve rights holders and stakeholder groups in REDD+ program design, implementation and M & E through culturally appropriate, gender sensitive and effective participation (P6)
N.A. (Additional)		• Establish effective resolution of grievances and disputes • Impartial, accessible and fair mechanisms for grievance, conflict resolution and redress must be established (Guideline on stakeholder engagement).	• Effective resolution of grievances and disputes relating to the design, implementation and evaluation of the REDD+ program
Enhance social benefits	• Promote sustainable livelihoods and poverty reduction (P3) • Protect and enhance economic and social well-being of relevant stakeholders with special attention to the most vulnerable and marginalized groups (P3) • Ensure equitable, non-discriminatory and transparent benefit sharing among relevant stakeholders with special attention to the most vulnerable and marginalized groups (P3)	• Realize the potential of forests to reduce poverty in a sustainable manner, and integrate forest effectively into sustainable economic development (OP 4.36)	• Provide positive impacts on the long-term livelihood security and well-being of Indigenous Peoples and local communities with special attention to women and the most marginalized/vulnerable groups (P3) • Transparent., participatory, effective and efficient mechanisms are established for equitable sharing of benefits of the REDD+ program among and within relevant right holders and stakeholder groups (P2)
N.A. (Additional)		• Identify, avoid and mitigate negative impacts on forest health and quality including forest conversion and degradation (OP 4.01, 4.04, 4.36)	• Identify, avoid and mitigate negative impacts on biodiversity and ecosystem services (P5)
Conservation of natural forests and biodiversity Enhancement of environmental benefits (e.g. biodiversity and ecosystem services)	• Maintain and enhance multiple functions of forest including conservation of biodiversity and provision of ecosystem services (P6) • Ensure that land-use planning for REDD+ explicitly takes account of potential synergies and trade-offs between the multiple functions of forest and the benefits they provide, respecting local and other stakeholders' values (P6) • Ensure that planted and natural forests are managed to maintain and enhance ecosystem services and biodiversity important in both local and national contexts	• Preservation of areas with high biodiversity value and promotion of the protection of ecosystem services (OP 4.01, 4.04, 4.36) • Protect the vital local and global environmental services and values of forests (OP 4.36) • Enhance positive impacts (OP 4.01)	• Maintain and enhance biodiversity and ecosystem services (P5) • Enhance positive impacts (P5)

Not to be used for conversion of natural forests	• Avoid conversion of natural forest to planted forest, unless as a part of forest restoration, and make reducing conversion of forest to other land uses a REDD+ priority (P5) • Avoid or minimise degradation of natural forest by REDD activities and reduce degradation due to other causes (P5)		• Avoid conversion or degradation of natural forests or other areas that are important for maintaining and enhancing biodiversity and ecosystem services (P5)
Address the risks of reversals	• Address the risk of reversals of REDD+ achievements (P4)		
Reduce displacement of emissions	• Avoid or minimise indirect land-use change impacts of REDD+ activities on forest carbon stocks, biodiversity and other ecosystem services (P5) • Avoid or minimise adverse impacts on carbon stocks, other ecosystem services and biodiversity of non-forest ecosystems resulting directly or indirectly from REDD+ activities (P7)		

Section 3. Development of Safeguards Information System in Cambodia

Cambodia has interpreted the 7 broad principles of the Cancun Agreements to the national context and circumstances, which has been unpacked into interpretative elements. This section provides the clarification of the Cancun safeguards in accordance with Cambodia's national context. In the final series of decisions on REDD+, which were agreed upon in Paris at COP 21, the UNFCCC "strongly encourages" developing country Parties, when providing the Summary of Information (SoI) on how the Cancun Agreements are being addressed and respected, to include, inter alia: "a description of each safeguard in accordance with national circumstances".[xxxiii] The purpose of the clarification is to specify how the principles/objectives encompassed in the Cancun Agreements translate into concrete rights and obligations in the context of Cambodia. In other words, the clarification contextualizes the general principles outlined in the Cancun safeguards into specific principles and objectives that are to be followed and promoted in the context of the implementation of REDD+ activities in Cambodia, and which are anchored in the country's Policies Laws and Regulations (PLRs).

Table 6: Cambodia's Clarification of Cancun Safeguards

Safeguards	Cambodia's Clarification
A	***The REDD+ Strategy is designed in compliance with the objectives of national forestry policies, considering jurisdictional arrangements, and consistent with provisions of the relevant treaties and international conventions to which Cambodia is a ratified party*** Core elements of Cambodia's clarification of safeguard A The National REDD+ strategy is consistent with the objectives of relevant national forest policies. The National REDD+ strategy is consistent with relevant and applicable international conventions and agreements.

B	***The rights of access to information, accountability, justice, gender equality, land tenure and fair distribution of benefits will be clarified, respected and promoted in the scope of the application of the National REDD+ Strategy.*** Core elements of Cambodia's clarification of safeguard B Right to access information is promoted in the context of the implementation of the REDD+ strategy. Accountability is guaranteed in the context of the implementation of the REDD+ strategy. Right to access justice is recognized and protected in the context of the implementation of the REDD+ strategy. User rights over forest land (particularly of indigenous people and women) are recognized and protected in the context of the implementation of the REDD+ strategy. Gender equality is promoted and ensured in the context of the implementation of the REDD+ strategy. Fair distribution of benefits is recognized and promoted in the context of the implementation of the REDD+ strategy.
C	***The REDD+ Strategy will be implemented in accordance to the rights of recognition of, and respect for the rights of original ethnic minorities, indigenous peoples and local communities; including the rights to non-discrimination, traditional knowledge and culture, self-determination, benefit sharing and collective tenure rights.*** Core elements of Cambodia's clarification of safeguard C The rights of original ethnic minorities, indigenous peoples and local communities are promoted and protected in the context of the application of the REDD+ strategy. Traditional knowledge is recognized and protected in the context of the application of the REDD+ strategy.
D	***The right to participate, in an effective manner including Free Prior Informed Consent for relevant original ethnic minorities, indigenous peoples and local communities will be recognized and promoted under the implementation of the National REDD+ Strategy.*** Core elements of Cambodia's clarification of safeguard D Relevant original ethnic minorities, indigenous peoples and local communities have the right to participate in the implementation of the Policies and Measures (PaMs). Right to a Free, Prior and Informed Consent is recognized and protected in accordance with the relevant legal obligations.
E	***The National REDD+ Strategy will be implemented to promote the conservation of natural forests and biodiversity, the enhancement of social and environmental benefits, and will not result in the conversion of natural forests.*** Core elements of Cambodia's clarification of safeguard E The conservation of natural forests and biological diversity is recognized and protected in the context of the implementation of the REDD+ strategy. The REDD+ strategy will not incentivize the conversion of natural forests. Enhancement of ecological, biological, climatic, cultural and natural heritage and socio-cultural, benefits
F,G	***Risks of reversals and displacement of emissions of the REDD+ PaMs will be addressed through the MRV and national forest monitoring system.*** Core elements of Cambodia's clarification of safeguard F & G Addressing risks of reversals is required by the REDD+ strategy. Addressing risks displacement of emissions is required by the REDD+ strategy

3.1. Overview of Cambodia's Safeguard Information System

The development of a Safeguards Information System (SIS) is one of the three safeguard-related requirements[xxxiv] outlined by the UNFCCC and is linked to the delivery of results-based payments[xxxv] from REDD+. The main objective of the SIS in Cambodia is to provide information that is accessible by all relevant stakeholders to demonstrate that the seven Cancun safeguards are being addressed and respected throughout the implementation of the PAMs. Cambodia intends to utilize the information compiled and managed by the SIS as the basis for the preparation of its SOI to the UNFCCC.

Cambodia SIS website can be accessed here: https://cambodia-redd-safeguards.org.

According to the UNFCCC guidance on SIS design, countries should, as appropriate, build upon existing systems that are deemed relevant for providing information on the REDD+ safeguards. In order to determine the extent to which it is possible to build on existing systems, countries are, therefore, expected to identify existing information systems and sources that are potentially relevant to the SIS, and assess the extent to which they can provide the necessary information to respond to the SIS information needs.

Cambodia already has information systems in place to gather and report information on how their PLRs are being implemented. The databases and information systems of the National Committee for Sub-national Democratic Development (NCCD) will be utilized to gather information about the application of the REDD+ safeguards.[xxxvi] The landing page for the various NCDD databases is: **http://db.ncdd.gov.kh/**

Table 7: Summary Table of NCDD Databases

Name of Database	Date of Operation	Frequency of Data Collection	Types of Information Collected	Jurisdictional Specifics
Commune Database (CDB)	2002	Annually, with training, collection and compilation occurring from November to February	Includes over 100 questions, including on ethnicity, age, gender, vulnerable groups, social information, economic level and employment status, education, health, administrative information, and so on.	Data is collected and compiled at the village, commune and district level, with the focal points being the village chief, the commune clerk, and the district officer responsible for administration. Once compiled and certified, the information is forwarded to the provincial Department of Planning.

Sub-National Project Database (SPD)	2002; online since 2009	Annual in terms of data collection, development of priorities, conduct of district integration workshop; tracking and monitoring on a roughly quarterly basis.	Selected information (project location, budget, beneficiaries, etc.) on all proposed government projects occurring at the sub-national level, commune by commune, that will NOT be funded through the Commune/Sangkat Fund.	Overseen by provincial Department of Planning
Project Implementation Database (PID)	2003; online since 2009	Annual cycle, with more frequent tracking and monitoring	Detailed information on all projects funded by the C/S fund, commune by commune. Information tracked includes bidding procedures and a range of safeguards relating to land, IP, environment, etc. Selected communes are also on a "watchlist" regarding particular safeguards.	Overseen by Planning and Investment Division of provincial administration with additional oversight by NCDD Safeguard Advisor and NCDD Approval Officer
M&E Monitoring Tool	2015, currently operational in 121 districts and khans	Frequent and ongoing	District level performance monitoring (e.g. spending, staffing, etc.)	Fully administered by District administrations, with limited NCDD oversight
M&E Database System	2015; online	Annually	Detailed monitoring, limited to health, economic, and education sectors	Information is collected at the commune level, then compiled by the district administrations. Tracked information is derived from ministries

Five different information systems have been identified (see Annex XI). The core functions of the SIS in Cambodia are:

Figure 6: Institutional arrangements of SIS in Cambodia

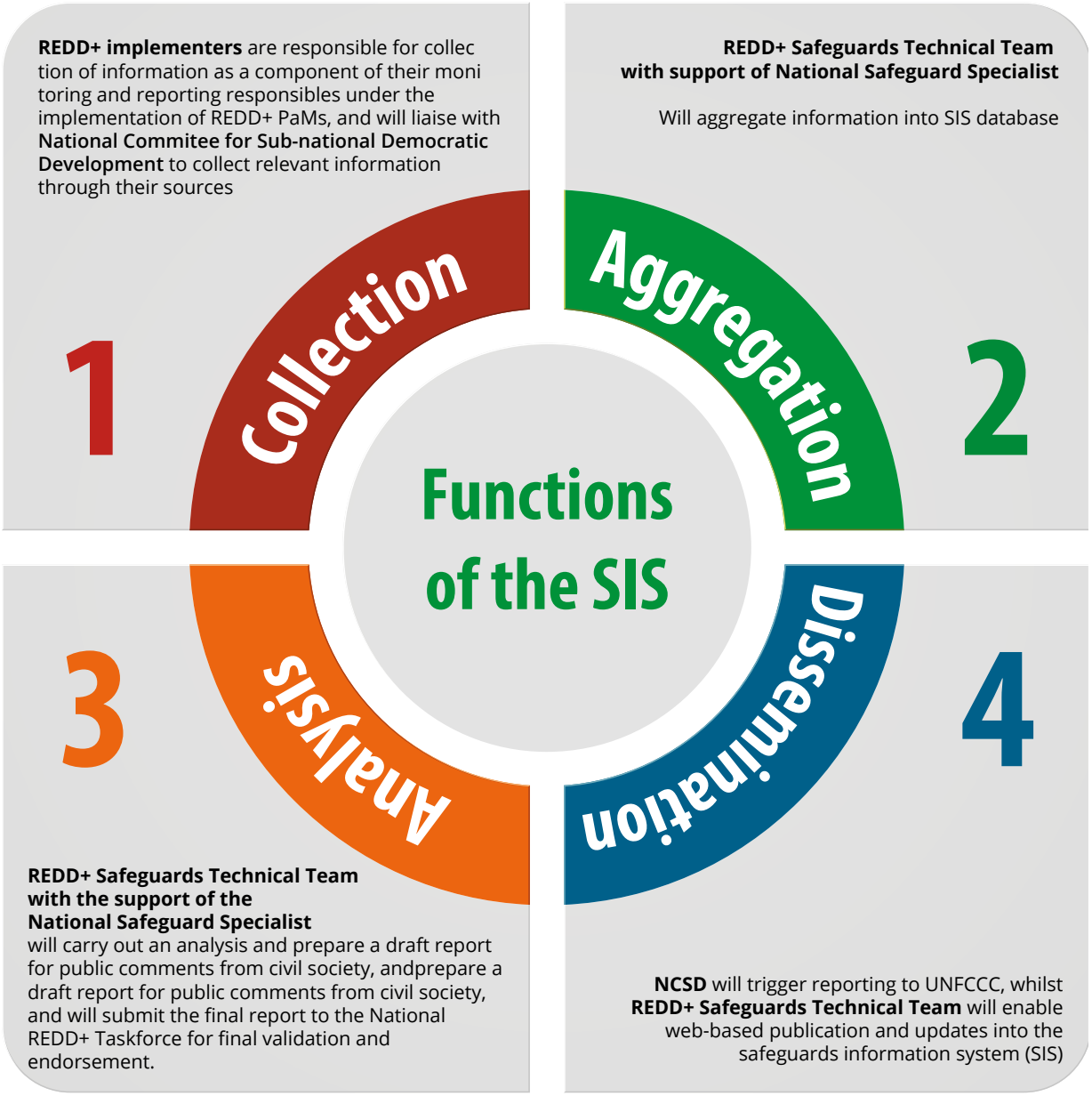
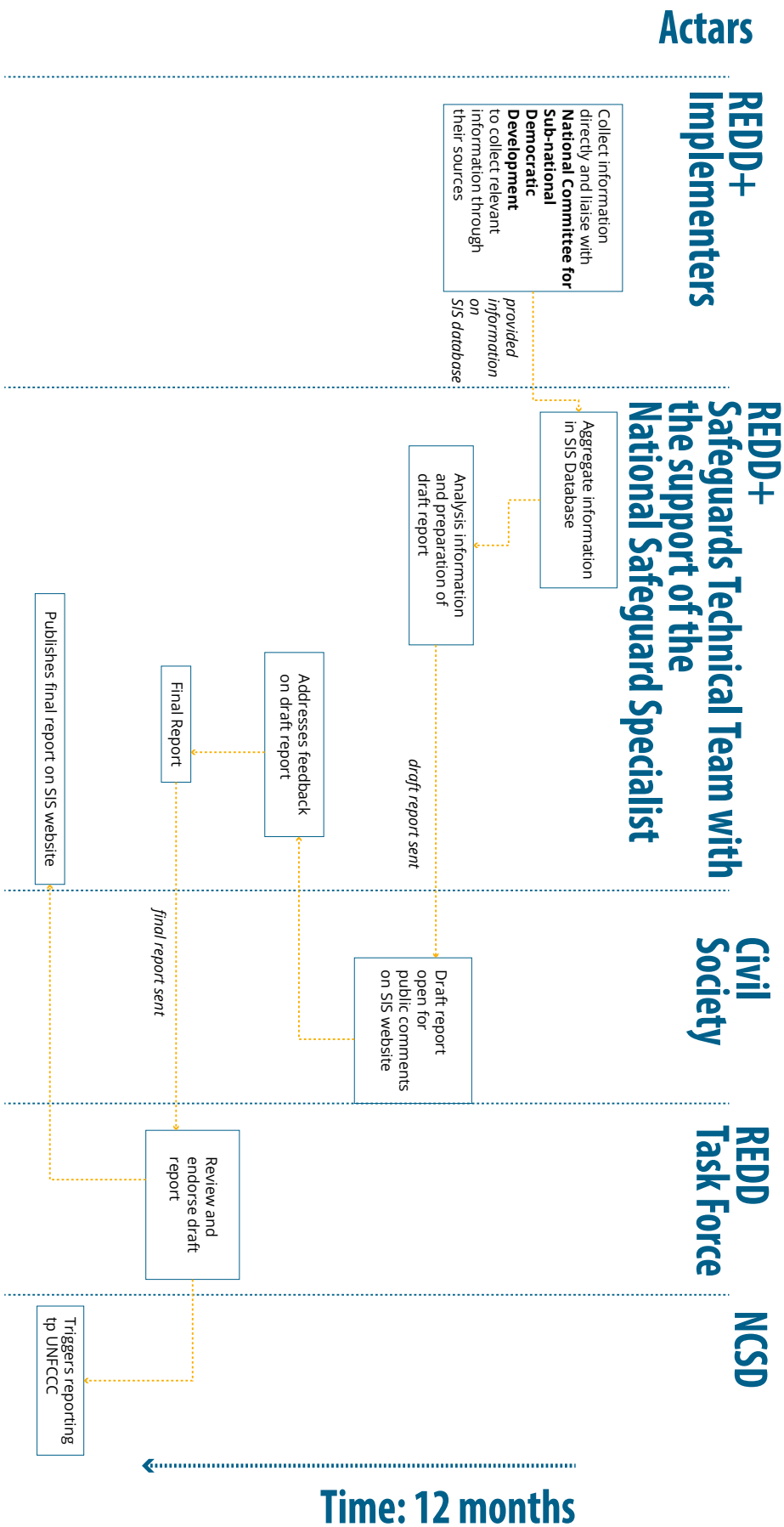


Figure 7: SIS process



Function 1: Collection of information

This function refers to the process of collecting information on the ground and is linked to the monitoring and reporting responsibilities under the implementation of REDD+ PAMs. It was determined that the collection of information is to be carried out by the REDD+ implementers as a component of their monitoring and reporting responsibilities under the implementation of REDD+ PAMs in each province. To be able to collect the necessary information for purposes of the SIS, specific template reports will be followed, which allow for collection of information by province and by PAM. Information will be collected and reported every 12 months, to allow for its analysis and preparation of a national report every 12 months. REDD+ implementers will collect information directly and will liaise with the NCDD to gather additional and complementary information about the application of the REDD+ safeguards. Additionally, the REDD+ Safeguards Technical Team will encourage relevant stakeholders (academia, consultancy firms, NGOs, international agencies, civil society, etc.) to submit complementary information on how the REDD+ PAMs have been implemented in consistency with the UNFCCC REDD+ safeguards, and these have been addressed and respected. This information will be considered in the process of analysis of information.

Function 2: Aggregation of information

This function refers to the process of aggregating the information from all PAMs at national level through the SIS database, with the purpose of being able to report on the application of the safeguards at national level. The REDD+ Safeguards Technical Team will be responsible for the aggregation of the information. This will involve a process of verification of all data that have been collected, and the generation of draft provincial reports and a draft national report. This draft national report is the basis for the preparation of the SOI, which will be a summary of the national report. At this stage, the REDD+ Safeguards Technical Team will review and consider the information submitted by non-governmental stakeholders through the SIS website and recorded in the SIS Database with regards to how the REDD+ activities have been implemented in consistency with the UNFCCC REDD+ safeguards, and these have been addressed and respected. This process will take 30 working days and be carried out every year.

Function 3: Analysis of information

The function of analysis aims to offer a qualitative and quantitative assessment of the information in order to determine to what extent the safeguards are being addressed and respected at national level. The REDD+ Safeguards Technical Team will analyse all information collected through SIS database. As the information is of qualitative and quantitative nature, the Safeguards Technical Team will need to provide an overall assessment of how the safeguards have been addressed and respected. The draft national report will be submitted for a public comment period.

The draft report will be posted on the SIS website, and public will have 30 working days to submit any written comments to the REDD+ Safeguards Technical Team. The REDD+ Safeguards Technical Team will address feedback received within 30 days of finalizing the public comment period. Based on comments received, the REDD+ Safeguards Technical Team will issue a responsiveness summary that summarizes all comments and responses to each and will submit the final report to the National REDD+ Taskforce for final validation and endorsement.

Function 4: Dissemination of Information

This function refers to the process of disseminating the information through the SIS. Although UNFCCC guidance is not detailed in relation to this function, it requested that the SIS should: "provide transparent and consistent information that is accessible by all relevant stakeholders."[xxxvii] For Cambodia this means that there is an expectation that SIS information will be disseminated both internally (national level) and externally (international reporting) through appropriate means (e.g. website, etc.). At the domestic level, once the National REDD+ Taskforce endorses the final report, it will be published as a final version on the SIS website. Information and updates on the SIS website will be done frequently, and a national report will be published every year. The report will also be sent to the NCSD to trigger the reporting to the UNFCCC for the preparation of summary of information.

Section 4. Assessment of Seima Safeguards Information System

The main objective of this section is to identify the kinds of social and environmental safeguards adopted by the Keo Seima Wildlife Santuary REDD+ project in Mondulkiri province in order to draw lessons from the applications of these safeguards[xxxviii].

4.1. Description of Seima REDD+ Project

The Keo Seima Wildlife Sanctuary (KSWS) covers 292,690 ha. It is located in eastern Cambodia, mainly in Mondulkiri Province with a small area extending into Kratie Province. The REDD+ Project Area covers 166,983 ha of forest in the KSWS Core Protection Area. The KSWS was created by a Prime Ministerial Sub-Decree in late 2009. This upgraded the conservation status of the former Seima Biodiversity Conservation Area, which operated during 2002–2009. Since 2002, the Forestry Administration (FA) has collaborated with the Wildlife Conservation Society (WCS) and other local NGO partners to develop management systems for the KSWS, both to conserve and restore the biodiversity values and to protect the livelihoods of local people. The conservation project has a holistic approach with four direct interventions: strengthening legal mechanisms and political support,

direct law enforcement, strengthening community natural resource management, and developing alternative livelihoods. Effective law enforcement is essential as it underpins all other activities. The sustained investment in supporting land titling for all indigenous communities in the landscape is particularly notable as it protects livelihoods and land rights while also forming a strong basis for cooperation with project implementation. In 2016, the KSWS was transferred to the Ministry of Environment (MoE) as part of a national jurisdictional transfer of all protected areas to MoE management.

The project is structured around four direct and three indirect interventions. Concerning direct interventions, the Seima project focuses on the following:

- Develop the key legal and planning documents needed to manage KSWS. The project participated in the 2016 jurisdictional shift from the Seima Protection Forest under Forestry Administration management to the Keo Seima Wildlife Sanctuary under the Ministry of Environment (MoE). Likewise, during this period the project has been engaged in providing expert support and feedback on the Cambodian Environment and Natural Resources Code, which includes key supporting components for REDD+, community co-management, and wildlife conservation.

- Reduce forest crime through direct law enforcement. Law enforcement continues, with 56 arrests, 257 warnings, and extensive confiscations of illegal equipment, including 610 snares, 32 guns or crossbows, 504 chainsaws, 215 hand tools, 223 motorbikes, 62 cars, 12 trucks, and 10 tractors during the monitoring period.

- Establish sustainable community use of land and natural resources. Implementation during this monitoring period has been through continued efforts to establish Indigenous Communal Title (ICT) tenure for communities who wish to participate. Additionally, a project to establish a Community Protected Area (CPA) and community-based non-timber forest product (NTFP) enterprise within the leakage area has begun.

- Support alternative livelihoods that reduce pressure on forest and natural resources. This has included ongoing support for ecotourism through the Jahoo Gibbon Camp, NTFP enterprise design and training, and training on methods of vegetable cultivation and livestock raising.

Indirect interventions at Seima REDD+ project has included the following:

- Effective monitoring. The project continues to monitor the site for

deforestation using remote sensing imagery and conducts ground monitoring through ongoing patrols and science survey activities. This period has seen improvements to the remote sensing monitoring methods, using newly available free imagery from the European Space Agency (ESA). This period also saw the five year update of the Basic Needs Survey, which is used to monitor community livelihood status. The project continues to use the Spatial Monitoring and Reporting Tool (SMART) and has initiated adoption of mobile technology through trainings in the use of CyberTracker.

- Effective administration. The project continues to conduct monthly meetings, annual workplan meetings, and uses the WCS accounting system.

- Fundraising. The project continues to apply for grant funding from donors, and marketing of REDD+ credits on the voluntary market, with combined total revenue of $1,237,072 for 2016 and $1,054,895 for 2017.

- Leakage and non-permanence are addressed through application of many of the project activities listed above within the leakage area; this includes the adoption of a new project that seeks to establish a Community Protected Area (CPA) for ~5,000 ha forest. The leakage area is monitored through remote sensing and, within the KSWS, patrols. The project proponent changed during this period from the FA to the MoE. A bridging validation was conducted to assess this change during the first verification. The project avoided 4,523,996 tCO2e emissions during this period.

4.2. Social and Environmental Safeguards at Seima REDD+ Project

In terms of social and environmental safeguards, the following summary are findings from assessment of the Seima REDD+ project.

Governance and Social criteria:

Social impact assessment: Prior to the project initiation, the Seima REDD+ project conducted a social impact assessment to examine possible social impacts on various forest users in the project area. As a result, 20 villages with 2,624 households were identified to be included for the project. These 20 villages are divided into two groups. Group one includes 17 villages with farmland or residential land within the REDD+ target area while group two comprised of 3 villages without land possession in the area but are dependent on forest resources in the area.

Recognition of rights: The project explicitly stated that communities have usufructuary rights to timber and NTFPs and are allowed to continue their subsistence based agriculture where legally obtained. The project also sought to secure their tenure rights on agricultural, fallow and residential lands. This process entailed mapping communal lands with communities and developing the legal documents to request communal land titles from the government. Hence, there would not be any involuntary relocation of legitimate occupants of the area from either residential land or farmland. However, the project document identifies shifting cultivation as a major deforestation and forest degradation threat that the project attempts to address. It is also notable that due to a huge influx of migrants in the area, there is confusion as to who (IPs or non-IPs) are practicing shifting cultivation. Therefore, there is a need to investigate 1) who (IPs or non IPs) are practicing shifting cultivation, 2) potential project impacts on the IP's customary rights of shifting cultivation, and 3) what kinds of compensation the project would offer if their current livelihood activities are diverted.

Free, Prior and Informed Consent (FPIC) consultation: For consultation, the project applied FPIC, with the following three steps. The first step focused on raising awareness amongst participating villages on the proposed REDD+ project and its potential impacts, as well as findings of the impact assessments. Seima REDD+ project did not mention potential payments to be provided to communities. Rather, the project staff emphasised other benefits such as secure tenure, improved forest conditions, and increased availability of NTFPs to meet their livelihood needs. The second phase was centered on development of an agreement between participating villages and FA (now under MoE) with regards to REDD+. A draft agreement was presented at various workshops with participation of a group of 20-30 community leaders in each commune. The agreement describes in detail what is being consented to, the term of the agreement (60 years), the rights and liabilities it confers etc.

The third phase entailed finalisation of texts in the agreements and demonstration of communities' consent to the development of REDD+ project. The Agreements were signed by all 20 participating community leaders, with thumb-printed support from 82 percent of families in the project area in January 2013. According to our field investigation, there was no pressure or coercion for them to be part of the project. However, there was limited knowledge on the content of the agreements among communities–including those who have provided their thumbprints and/ or signatures. It is important to note that the communities signed the Agreements because of their expectation for positive livelihood impacts from REDD+ and because they trusted WCS and decisions of their

community leaders to join the project (i.e. not for financial incentives). This observation points to the importance of existing trust between those who bring the idea of REDD+ to the villagers.

Stakeholder participation: As stated in the project document, the implementation of Seima project has involved various types of stakeholders. The project proponents have conducted an extensive amount of multi-stakeholder consultations on various REDD+ and non-REDD+ topics, especially with those at the project sites, throughout the years. Yet, communities raised two issues. First of all, further stakeholder consultations should focus on the activities or any restrictions that would come with the implementation of REDD+ in the area. For example, the informants would like to know if their current shifting cultivation practices would be restricted through REDD+ project implementation. Second, they emphasised the importance of increasing women's participation in the consultation processes in Seima.

Grievance mechanisms: The project proponents introduced a grievance mechanism where complaints can be directly submitted to the project implementation team for assessment and resolution. In addition, existing Commune Councils who has a legal mandate in the project zone has thus been identified to function as a third party to receive complaints from their constituents on issues of any kind and either direct them to the appropriate place or seek to resolve them directly, often by mediating between the affected parties. The project proponents have provided on-going capacity-building support to the Commune Councils to increase their understanding of the REDD project and their role in performing this function. Communities in Seima have complained that their allegation on illegal logging activities to relevant authorities have not been addressed "satisfactorily". This has raised a doubt amongst the communities on REDD+ to address deforestation caused by external actors.

Access to information: The 300 page long project document (in English) and 50 page long handbook summarizing the proposed project (in Khmer) were available for public consultations and comments on the CCBS website. But there was limited accessibility to full information on the project to those without the internet access and competent to read English or Khmer. Therefore, the communities requested that there need to be more consultations – preferably in indigenous language or with translation – on the activities that will happen as part of the REDD+ project implementation. This finding highlights the importance of fully informing local communities in their local languages through FPIC.

Environmental criteria:

Protection and conservation of ecosystem and biodiversity: The project sought to maintain the variety, and cover all forest types and to increase populations of wildlife of conservation importance. To do so, the project aims to reduce the environmental threats such as habitat loss, hunting, and selective logging and overharvest of NTFPs.

Risks of displacement and reversals: The project sought to prevent leakage partly through agricultural intensification and partly through including all anthropogenic non-forest land that was located within the project zone into a leakage area (defined as all non-forest or recent deforestation as of 2010 within 3 km of a settlement). The project conducted several leakage management activities such as ecotourism and NTFP management within forested parts of the Project Area and Leakage Belt. Yet field findings suggest that there are ongoing illegal logging activities within their villages mainly by external actors at an alarming rate and scale which may result in reversal, leakage, and non-permanence risks.

4.3. Key lessons from Seima REDD+ Project

Governance and Social criteria :

Social impact assessment: is a crucial tool to identify possible social impacts on different types of stakeholders in the project areas, to map different impacts of REDD+ activities as well as devise strategies to reduce potential risks and ensure co-benefits.

Rights of communities: It is important to ensure customary rights of IPs and local communities to their forests and existing agriculture lands. The establishment of community forestry, community protected areas, and land titling are important means to address these issues whereas such process requires significant amount of time and resources. REDD+ activities may need to examine if shifting cultivation is actually detrimental to forest ecosystems. If so, options can be proposed to reduce the need.

Consultation: While FPIC is an important tool to ensure that participation is **free** and that **consent** is given **prior** to the implementation of project activities, it is imperative for FPIC implementers to guarantee that **information** is fully – not selectively – provided to the communities before consent was solicited and later given. For instance, there is a further need to inform villagers fully about the nature and scope of REDD+ activities as

well as the content of the agreements to ensure their consent was based on a complete understanding of the objectives, activities, benefits, and possible negative impacts.

Benefit Sharing: It is important to be very careful in providing information on financial incentives to their stakeholders without raising unrealistic expectation about the amounts flown from REDD+. Though the promise of payment helps raise stakeholders' motivations to participate in REDD+, it can also create a risk that they will lose such motivation if payment delivery is delayed or if the payment amount is smaller than expected.

Gender consideration: Although women have been invited to the consultations and meetings conducted in both sites, there need to be efforts to ensure that women are given the opportunities to speak, to be listened to and taken seriously.

Access to information: There is a further need to ensure transparency of and accessibility to information related to the development and implementation of REDD+ projects amongst stakeholders at the village level. Information on the goals, objectives and activities in general and the roles and rights of community members in project activities should be clearly communicated to communities in local languages and in an accessible manner.

Grievance mechanism: There is a need to ensure the effective handling of grievances that derived from the REDD+ implementation or grievances that are due to external actors' activities. Ineffective handling of grievances has casted doubts amongst communities in both pilot projects on the effectiveness of REDD+.

Environmental criteria:

Environmental impact assessment: An environmental impact assessment is an important tool to map locations according to ecological importance, which enable effective conservation of areas of critically environmental importance.

Risks of reversals and displacement: Both projects currently face threats of reversal and conversion of natural forests caused by external pressures such as illegal logging by project and non-project stakeholders. Thus, it is important to re-evaluate the drivers of deforestation and forest degradation that they attempt to address. It is also important to ensure

effective law enforcement through effective cooperation from other key sectors such as agriculture and the military to stop illegal logging for REDD+ to be successful.

Section 5. Proposed Safeguards Information System for Kampong Thom Province

There is no blueprint for a country approach or a provincial approach to REDD+ safeguards; each will be different and will reflect the specificities of contexts as well as what the country or project defines as the overall goals and scope of safeguards application. However, drawing on practical experiences, some generic steps can be identified which may be useful for project developers to develop their approach to safeguards. Project proponents may undertake all of these steps or just one, in any number of sequences, depending on their specific context. Each key generic step is briefly explained below.

5.1. Defining safeguard goal and scope

In this context, defining safeguard goals refers to what safeguard frameworks the project developer chooses to apply for REDD+, and whether the developer chooses to develop and include safeguards beyond those of the UNFCCC. The requirements around the Cancun safeguards are basic preconditions to be eligible for results-based payments under the UNFCCC, but a project developer may also want to consider other bi-/multi-lateral safeguards requirements, e.g. World Bank Operational Policies, as part of the Forest Carbon Partnership Facility (FCPF) Carbon Fund, reviewed in Chapter 2. Consideration may be given to safeguards requirements and expectations of both investors in REDD+ results-based activities as well as those of buyers of verified emissions reductions/ enhanced removals. Defining safeguards goals could additionally mean considering what national policies could benefit from addressing and respecting REDD+ safeguards. Safeguards goals should reflect the country's budgetary and capacity constraints, as well as what the country hopes to achieve in terms of its ambition for REDD+ contributions to broader sustainable development and green growth. This could mean a focus only on international requirements under the UNFCCC to obtain results-based payments from REDD+, or could also include the use REDD+ to catalyze broader sustainable development and green growth and meet domestic policy goals.

Defining the scope of safeguards application will depend on how a project developer chooses to implement REDD+. A developer may wish to integrate REDD+ into wider forestry sector strategies or, even broader, as a cross-sectoral mechanism including sectors that may be related to drivers of deforestation and forest degradation, such as agriculture and biomass energy although this may imply the need for significantly more resources and may be a longer-term objective beyond meeting basic UNFCCC requirements. REDD+ safeguards could be applied to a broader scope than specific REDD+ actions for results-based payments, if sufficient capacities and resources are available, and a country opts to do so, e.g. applied to the whole forestry sector as means to attract other sources of foreign investment, and achieve domestic policy goals, in the sector. Safeguards goal and scope setting have typically been conducted through a series of stakeholder consultations, led by national government REDD+ focal points. Such consultative processes are highly iterative, with progress at each step informing and refining previous steps in the development of a national REDD+ strategy.

5.2. Addressing safeguards

What 'addressing' the safeguards means will vary by country, but it may be thought of as comprising three key steps:

1. Clarifying Cancun safeguards in the country context;
2. Assessing existing safeguards-relevant policies, laws and regulations (PLRs) [xxxix] ; and over time
3. Revising existing and developing new PLRs, as necessary, to ensure they cover the identified risks and potential benefits associated with REDD+ actions.

The first step entails clarifying ('specifying' or 'unpacking') each of the seven Cancun safeguards according to the country's particular circumstances and may include consideration of key issues with regard to each Cancun safeguard in relation to the main benefits and risks associated with proposed REDD+ actions. Refer to Table 6 on how Cambodia clarified the Cancun safeguards. This clarification exercise could be informed by a (expert or participatory) benefit and risk assessment of the REDD+ actions being considered for the national REDD+ strategy. This implies that a country will need to have some degree of clarity on proposed REDD+ actions or strategic options before starting to analyze how safeguards can be addressed. The breakdown of the broad principles embodied in the Cancun safeguards into country-specific themes can be used to develop criteria, indicators or narrative

statements as a means to further structure information in a country's SIS. Table 8 presents an illustrative example of key issues that may come up when clarifying the Cancun safeguards, based on an international legal best practice perspective, and could inform country-specific descriptions of each safeguard in accordance with their national circumstances.

Table 8: Illustrative framework for clarifying the Cancun safeguards

Safeguards	Possible Key Issues
A	• Consistency with international commitments on climate; contribution to national climate policy objectives, including those of mitigation and adaptation strategies; • Consistency with the achievement of the Millennium Development Goals and post-2015 Sustainable Development Goals; contribution to national poverty reduction strategies; • Consistency with international commitments on the environment; contribution to national biodiversity conservation policies (including National Biodiversity Strategies and Action Plans) and other environmental and natural resource management policy objectives; • Consistency with State's human rights obligations under international law, including the core international human rights treaties and ILO 169, where applicable; • Consistency and complementarities with the objectives of the national forest programme; • Coordination among agencies and implementing bodies for REDD+, national forest programmes and national policy(ies) that enact the relevant international conventions and agreements; • Consistency with other relevant international conventions and agreements.
B	• Access to information • Accountability • Land tenure • Enforcement of the rule of law • Adequate access to justice, including procedures that can provide effective remedy for infringement of rights, and to resolve disputes (i.e., grievance mechanisms) (NB: overlaps with Safeguard (c)). • Gender equality • Coherency of national/subnational legal, policy and regulatory framework for transparent and effective forest governance • Corruption risks • Resource allocation/capacity to meet institutional mandate

	• Participation in decision-making processes (overlaps with Safeguards C and D)
C	• Definition/determination of indigenous peoples and local communities • Right to compensation and/or other remedies in the case of involuntary resettlement and/or economic displacement • Right to share in benefits when appropriate • Right to participate in decision making on issues that may affect them • Free, prior and informed consent (FPIC) • Recognition and protection of indigenous peoples' and local communities' traditional knowledge, cultural heritage, intellectual property
D	• Identification of relevant stakeholders - those who may affect, or be affected by, specific REDD+ actions • Legitimacy and accountability of bodies representing relevant stakeholders • Mechanisms or platforms to facilitate participatory processes during 1) design, implementation and monitoring of REDD+ architecture, particularly national strategies/action plans, and associated social and environmental safeguard measures • Functional feedback and grievance redress mechanisms • Recognition and implementation of procedural rights, such as access to information, consultation and participation (including FPIC) and provision of justice • Transparency and accessibility of information related to REDD+ (NB: overlaps with Safeguard B)
E	• Definition of natural forest and understanding of the distribution of natural forest • Understanding the potential impacts of REDD+ policy options on biodiversity and forest ecosystem services. • Conservation of natural forests; avoiding degradation, or conversion to planted forest (unless as part of forest restoration). • Identification of opportunities to incentivise enhanced environmental and social benefits through design, location and implementation of REDD+ actions • Conservation of biodiversity outside forest.
F	• Analysis of the risk of reversals of emissions reductions, also referred to as 'non-permanence'. • National Forest Monitoring System (NFMS) may be designed to detect and provide information on reversals. • Plausible reference scenarios for REDD+ that give a reasonable indication of the risk of deforestation in the absence of REDD+. If this is underestimated, then REDD+ successes may be at a greater risk of reversal.

G	• Actions that address the underlying and indirect drivers of deforestation and land use change rather than only direct drivers at specific locations • Actions to reduce displacement of emissions from specific REDD+ actions at local (e.g. across REDD+ project boundaries) or national (to other jurisdictions within the country) levels • National Forest Monitoring Systems designed to detect and provide information on displacement at national, subnational and local levels • Analysis of possible reasons for displacement of emissions, such as ineffective implementation of REDD+ actions, or REDD+ actions that are not designed to address underlying (local, subnational, national) drivers of deforestation and forest degradation • Selection and design of REDD+ actions taking into consideration the risk of emissions displacement; displacement risk analysis for the selected REDD+ actions, including risk of emission displacement to other ecosystems, e.g. through draining of peatlands for agricultural use or displacement of pressures on forests to a neighbouring jurisdiction

In addition, an assessment of how effectively the existing PLRs address, on paper, the benefits and risks of planned REDD+ actions can be undertaken, with findings being validated through stakeholder workshops. This assessment should identify any significant weaknesses, gaps and inconsistencies in the PLR framework that may need to be strengthened, filled or resolved in order to better address Cancun safeguards throughout REDD+ implementation. Based on the findings of such an assessment, existing texts of laws might be amended or new provisions drafted in order to strengthen the PLR framework, or new regulations drafted to support the operationalization of PLRs. These processes are often time-consuming, and as such it may be a good idea to build on ongoing reform processes.

5.3. Respecting safeguards

Similar with 'addressing' the safeguards, what it means to 'respect' the safeguards will depend on the country or project developer. In the context of a generic approach, this may entail demonstrating: a) how well the PLRs identified under 'addressing' are actually being implemented in practice; and b) the environmental and social outcomes of PLR implementation. Do the PLRs put in place to mitigate, manage or remove environmental and social risks of REDD+, and enhance the benefits, actually work in practice?

In this approach, respecting safeguards may follow a similar process to that of addressing safeguards:

1. Assessing institutional mandates, procedures and capacities to implement PLRs; and
2. Strengthening those institutional arrangements to improve PLR implementation.

Assessing government institutional capacities to implement subnational PLRs may, ultimately, involve collecting information on the outcomes of REDD+ implementation in terms of social and environmental benefits and attempting to link them to the institutions' effectiveness in supporting PLR implementation. Assessing institutional capacities is likely to be more challenging than identifying how PLRs address safeguards on paper, but periodic assessment should be able to demonstrate incremental improvements in respecting safeguards, which can help assure those entities providing REDD+ results-based payments. As with the PLR assessments, institutional capacity assessments for respecting safeguards might best be done by a team of experts, with results being shared and validated through a multi-stakeholder consultation process.

5.4. Safeguard information systems

Integral to the country approach to safeguards is the development of a Safeguards Information System (SIS). An iterative approach to developing an approach to safeguards is advisable, which not only takes into consideration the country's goals and scope for REDD+ safeguards, but also considers what is already in place, building on the results of each successive step. Throughout the process, stakeholder consultation will be essential. As discussed in previous section, a SIS is one of the four core elements to have in place for REDD+ implementation (COP16, 2010) for a country to receive results-based payments (COP 16, COP 19):

1. National REDD+ strategy or action plan;
2. National Forest Reference Emission Level and/or Reference Level;
3. National Forest Monitoring System; and
4. System for providing information on how the safeguards are being addressed and respected throughout the implementation of the REDD+ activities (i.e. a 'SIS').

Further guidance on SIS design was provided at COP17 in Durban and COP19 in Warsaw:

- Consistency with Cancun guidance;
- Accessibility and periodic provision of information: providing transparent and consistent information that is accessible by all relevant stakeholders and updated on a regular basis;
- Improvement over time: being transparent and flexible to allow for improvements over time;
- Comprehensiveness: providing information on how all Cancun safeguards are being addressed and respected;
- Country driven: being driven by the country and implemented at the national level;
- Utilizing existing systems: building on them as appropriate.

A SIS should, wherever possible, build on existing information systems in order to provide information on the way the safeguards are being addressed and respected throughout the implementation of REDD+ activities. It is acknowledged, for example, in decision 11/CP.19, that REDD+ countries' national forest monitoring systems for REDD+ may provide relevant information for the SIS.

5.5. Potential steps to develop a SIS for Kampong Thom

In this concluding section, this report draws from knowledge from previous section to propose how a SIS for Kampong Thom province could be develop, implement and monitor. This would require the following three steps.

5.5.1. Defining SIS objectives

The first step is to define the SIS objectives. For the different domestic and international information needs to which the SIS should respond – which at a minimum would be the UNFCCC requirement of providing information on how the safeguards are being addressed and respected throughout the implementation of REDD+ actions. Information on how environmental and social benefits and risks are being managed in forestry and other land-use sectors within the province could also contribute to a range of other objectives, such as:

- ***Accessing funding:*** in addition to eligibility for results-based payments under REDD+, investments in REDD+ activities may be enhanced through providing information on risk management/benefit enhancement that can be used to attract (public and private) investors.
- ***Improving national REDD+ strategy or action plan implementation:*** through information forming the basis for refined actions to address drivers of deforestation and forest degradation and barriers to 'plus' activities, i.e. can contribute to adaptive management.
- ***Increasing the legitimacy of REDD+:*** through improved transparency, stakeholder consultation and participation, and provision of information to domestic stakeholders.
- ***Reforming policies based on evidence:*** through using safeguards information to inform decision-making at country, regional or local levels.

5.5.2. Determining information needs and structure

The second step is to determine the information needs and structure commensurate to the province which could include identifying key issues from the national clarification of the Cancun safeguards, and deciding on a framework for structuring and aggregating the information. This step has two inter-related sub-steps that

need to be considered together:

i. ***Information needs*** – what specific information is needed, in relation to the specific benefits and risks of proposed REDD+ actions, to demonstrate appropriate PLRs are in place (addressing safeguards) and are being adequately implemented (respecting safeguards); and
ii. ***Information structure*** – how will this information be aggregated and organized in the SIS?

Safeguards information needs will be determined by the identified benefits and risks of REDD+ actions, together with the PLRs required to mitigate these risks and maximize the benefits. A project developer needs not attempt to collect information on all possible aspects of each safeguard, but can focus efforts on collecting the information most relevant to priority benefits and risks associated with key REDD+ actions comprising the national REDD+ strategy. Of course, those actions and priorities may change over time, and safeguards information needs can be expected to evolve with a phased implementation of the national REDD+ strategy as different REDD+ actions are implemented. Based on identified information needs, existing sources of information should be identified and assessed, and if necessary, new information should be collected to help fill information gaps in order to demonstrate that all Cancun safeguards are being addressed and respected.

The information structure will depend on a great many factors including, among other things:

- The scope of safeguard application chosen by the project developer;
- The scale[xl] of REDD+ intervention (national, subnational or local);
- The specific objectives of the SIS and the different end users of the information; and
- The capacity and resources available to implementing institutions.

Two basic options present themselves on how to structure information in a SIS:

i. A narrative description of how the key elements of each safeguard have been addressed and respected, through policies, laws, regulations and their implementation on the ground. This would likely rely on the clarification of the safeguards; or
ii. A hierarchical structure of principles, criteria and/or indicators.

Although not required by any UNFCCC decision, some countries, including Cambodia, working towards articulating their SIS have chosen to structure information in a hierarchical form, comprising one or more of the following components:

- **Principles (P)** – broad aspirational statements of intent, i.e. statements of objective. A number of countries are choosing to adopt, or adapt and augment, the Cancun safeguards as national REDD+ safeguard principles.
- **Criteria (C)** – more specific statements of thematic content that elaborate the principles. The step of clarifying the Cancun safeguards, in effect, could establish sets of criteria for each safeguard.
- **Indicators (I)** – detailed information used to demonstrate changes over time. Wherever, and as much as possible, identification of indicators should be based on existing sources of information. Novel indicators may be considered in cases where a distinct information need, important to demonstrate safeguards are being respected, is not met by existing sources. However, it is useful to note here that some countries have chosen to establish large numbers of novel indicators for their SIS; however, there is growing concern about the sustainability - due to a lack of institutional mandate and operational budget to collect information against these novel indicators - of this approach.

When taking decisions on what exactly to assess and how to do so (e.g. how many indicators to use, or the extent of field-based research, if any), it is important to take into account capacity and resource limitations or needs, keeping in mind that developing an SIS is likely to be a stepwise process.

5.5.3. Assess existing information sources or systems relevant to safeguards

To make the best use of the country's existing processes and ensure sustainability, project developer should, to the extent possible, 'build upon existing systems' in order to meet their safeguards information needs. The mandates and reporting responsibilities, e.g. to international conventions, of institutions involved in REDD+ can help identify systems and sources of relevance to the SIS. Undertaking an assessment of PLRs related to safeguards can help map out these institutional mandates and responsibilities. An assessment of information systems and sources should not only identify existing information, but also information gaps that might be resolved by modifying existing systems to accommodate new information (e.g. new indicators), or developing new ones. Given the array of themes covered by the safeguards, one information source (or system) is unlikely to be able to provide all of the information needed for an SIS.

Examples of information systems and sources that may provide relevant contributions to an SIS include, but are by no means limited to:

- National population censuses
- National forest monitoring systems (NFMS)

- Systems supporting national implementation of other international conventions, e.g. biodiversity data centres and networks
- Living Standards Measurement Studies (LSMS)
- Sustainable forestry and agricultural commodity standards (including auditing reports)
- Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreements (VPA) Timber Legality Assurance Systems (TLAS), etc.
- Grievance redress mechanisms
- Cadastral databases
- Information sources used to assess Sustainable Forest Management (SFM)
- Registries of site-based projects, e.g. expansion of sustainable management of forests through certification of production forest management units.

In assessing existing information sources and systems, two key aspects will be critical:

I. What functions will the SIS need to perform to meet the desired country objectives?
II. What institutional arrangements are in place to ensure these functions are adequately operational?

Each of these two core aspects is described in more detail here:

I. What functions will the SIS need to perform to meet the desired country objectives? An effective and operational SIS should perform one or more of the following key functions, as decided by the country: collection, management, analysis, interpretation, quality assurance and validation, dissemination of information. Assessing safeguards-relevant PLRs can help determine which government (and possibly non-government) institutions are mandated and capacitated to carry out the desired functions of the SIS (and prepare the summary of information on safeguards). The role of non-state actors – civil society, indigenous peoples and local communities, as well as the private sector – in complementing state institutional mandates and capacities, can also be an element of consideration in the process of assigning functional responsibilities within the SIS.

The generic main functions of a SIS may include:

- Information collection and management – primarily concerned with determining what information is to be included in the SIS, where this information will come from and how it will be brought together. Also includes identification or selection of information collection and management

methods, in addition to assessing the advantages and disadvantages of modifying existing systems to include new information and methods of collection and management;

- Information analysis and interpretation – making sense of the information, particularly important if primary/secondary data are to populate the SIS. Different analyses and interpretations will serve the different objectives of the SIS, including the preparation of a summary of information for submission to the UNFCCC, as well as other domestic information products for different stakeholders at national, subnational and local levels;

- Information quality control and assurance - two functions, which can also be considered as information verification (at the point of collection – making sure information is accurate) and validation (post-analysis – making sure interpretation is accurate) are entirely optional SIS functions . It should be noted, however, that the quality of the SIS, and the robustness of its information can be significantly improved with inclusion of quality control and/or assurance functions[xli] ; and

- Information dissemination[xlii] and use – once analyzed and interpreted, information should be communicated to, and may be used by, the different target audiences – both international (e.g. donors) and domestic (e.g. local communities) - indicated in the SIS objectives. Information dissemination may involve exploration of technological solutions (such as existing and novel web portals), which provide access to information to different users.

The role of non-state actors – civil society, indigenous peoples and local communities, and private sector – in complementing government institutional mandates and capacities, could be considered during the process of assigning functional responsibilities within the SIS, e.g. private forest and agricultural land owners, together with indigenous peoples and local communities could contribute or validate information on outcomes of implementation of REDD+ actions; third party verification of practices adhering to sustainable forestry and agricultural commodity standards could provide information on whether the safeguards are being respected; etc.

What institutional arrangements are in place to ensure these functions are adequately operational? The existing PLR framework will define the mandates and functions of existing public institutions that might contribute to the SIS. Consideration should be given to how those mandates and functions operate in practice to see what institutional (financial, human, technological) capacities could be strengthened to improve SIS functioning. This will be particularly relevant when attempting to

demonstrate how the safeguards have been respected, which ultimately may necessitate information on outcomes of national PLR implementation.

New institutional arrangements, such as information sharing arrangements, might be considered horizontally, across government line ministries and between departments, and also vertically up (and down) administrative hierarchies, to feed subnational information, from multiple localities, into a single national SIS. Lastly, the role of non-government institutions should also be considered. Industry standards and corporate social responsibility policies, and even customary norms of indigenous peoples and local communities, could contribute to SIS functions as well as sources of information. Where the assessment of existing information sources or systems has highlighted that some information requirements cannot be met on the basis of what is already available, suitable arrangements may need to be found for closing those gaps. This may involve building the capacity of relevant institutions to implement PLRs, as well as expanding, changing or creating mandates and protocols for information collection and management.

Countries are encouraged to provide any other relevant information on safeguards in the summary of information, and to improve the information provided over time, taking into account a stepwise approach. All of a country's safeguards work, including for example the country-specific clarification of the Cancun safeguards, PLR assessment and SIS, may contribute to the summary of information. Countries may wish to provide a basic or more detailed summary of information on how they are respecting and addressing the Cancun safeguards, to assure investors in REDD+ activities and buyers of verified emissions reductions/enhanced removals that any social or environmental risks associated with their investments have been mitigated or avoided, and benefits enhanced. REDD+ countries should view the submission of information on safeguards as an opportunity to showcase what is underway as well as planned (rather than a risk if all Cancun safeguards are not yet comprehensively addressed and respected).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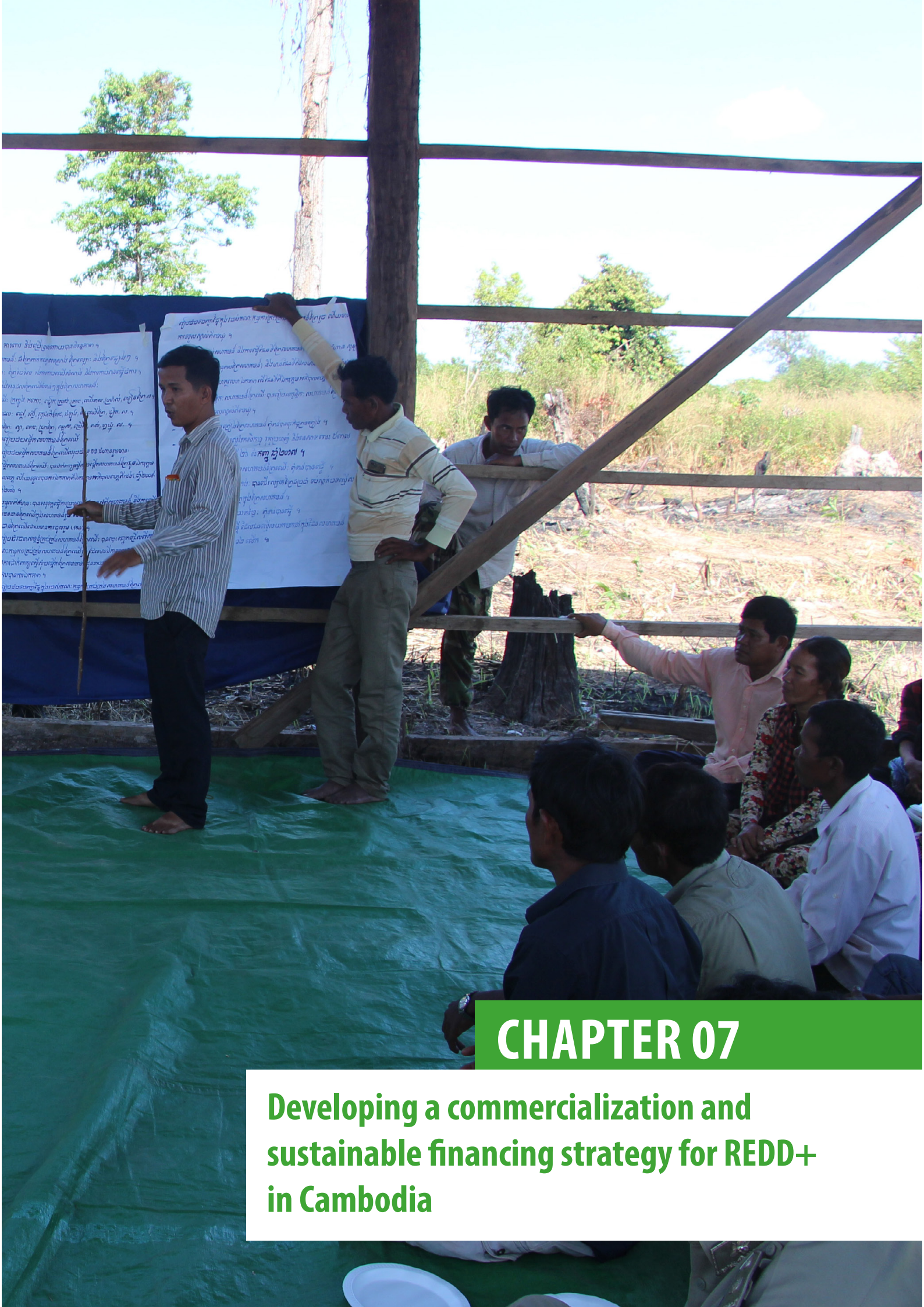

CHAPTER 07

Developing a commercialization and sustainable financing strategy for REDD+ in Cambodia

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Developing a commercialization and sustainable financing strategy for REDD+ in Cambodia

Section I. Introduction

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is the international initiative to reduce emissions from deforestation and forest degradation and to foster conservation, sustainable management of forests, and enhancement of forest carbon stocks, but it is a relatively new concept in Cambodia. The Forestry Administration (FA) in the Ministry of Agriculture, Forestry and Fisheries (MAFF) is the lead government agency responsible for the management of state-owned forests and, increasingly, it is assigning production forest management responsibilities to local communities with the capability to receive approval to manage Community Forests (CF). The Forestry Administration plans to expand the outreach of its REDD+ program to the management of both state owned forests and community forestry areas. REDD+ project development activities in Cambodia were initiated in 2008 for readiness process and several REDD+ initiatives have been implemented.

The Royal Government of Cambodia have been approved several projects such as Oddar Meanchey Community Forestry REDD+ project, Keo Seima Wildlife Sanctuary REDD+ project (previously known as the Seima Protection Forest REDD+ project), Prey Lang REDD+ project, Tumring REDD+ project (in collaboration with the government of the Republic of Korea), and the Southern Cardamoms REDD+ project. These initiatives continue to inform, as well as influence, the development of the national framework for sustainable forestry. The collective experiences of these REDD+ initiatives at the project level underscore the importance of standardizing the procedures to meet the technical specifications associated with carbon standards to ensure that current and future REDD+ projects are developed and implemented in an efficient and effective manner. Cambodia is also in the early stages of developing a jurisdictional REDD+ program consistent with the development of current REDD+ pilot projects and it will be imperative to determine the manner in which that jurisdictional program will be established to accommodate each of those projects.

In order to generate an on-going revenues for sustainable financing of this project, the project aims at developing a commercialization and sustainable financing strategy that could not only be implemented in the Turming REDD+ project in Kampong Thom province but also other REDD+ projects in the country. The strategy is a key tool for marketing the carbon credits and using the revenues from the carbon sale to support sustainable forest management and generate further carbon credits during the project lifespan. In essence, this assessment aims to provide key strategies and recommendation for a commercialization and sustainable financing for the project could be developed, implemented and applied not only for Tumring REDD+ project but also to other REDD+ projects in the country.

Section II. Overview of Cambodia's legal and political system

The Kingdom of Cambodia, operating under the motto "Nation-Religion-King" has a constitutional monarchy based upon three branches—Legislative, Executive, and Judicial—and a Chief of State, King Norodom Sihamoni (since 29 October 2004). "The legislative branch is divided into the National Assembly and the Senate with the authority to approve and amend legislation initiated by them or the RGC [Royal Government of Cambodia]." The executive branch houses the Prime Minister, Council of Ministers (also referred to as the RGC) and the various Ministries. The Judiciary is proclaimed independent and "shall guarantee and uphold impartiality and protect the rights and freedoms of the citizens." The administrative divisions in the country's land management structure are by province and the major city areas are called municipalities. The provinces are divided down into districts (srok) and districts are divided into communes (khum). Municipalities are divided into sections (khan) and then further subdivided into quarters (Sangkat)(Donal, 2013). The Khum or Sangkat are further subdivided into villages (phum), which consist of several households (this is particularly important in the case of Community Forestry, where information regarding the numbers of villages in a community forestry area is important).

Several phums are called a Khum or Sangkat. However, it is important to note that phum is not an administrative division identified by the Constitution. Each administrative unit has corresponding levels of the executive agencies with specific responsibilities for that jurisdiction. Understanding this structure and which level of government the project needs to deal with for which specific approval/tasks will be important for developing a commercialization and sustainable financing strategy for REDD+ projects. The hierarchy of Cambodian laws is outlined below – note that geographical scope becomes narrower and time needed to issue these official mandates becomes shorter moving down the list:

- **The Constitution:** The Supreme Law of the Kingdom of Cambodia
- **Treaties and Convention:** According to Article 26 of the Constitution, the King shall sign and ratify international treaties, both multilateral and bilateral, and conventions, following the approval of the National Assembly and Senate.
- **Laws (Chhbab):** Laws adopted by the National Assembly
- **Royal Kram (Preah Reach Kram) and Royal Decree (Preah Reach Kret):** To be issued under the name of the King for executing his constitutional powers.
- **Sub-Decree (Anu-Kret):** To be signed by the Prime Minister after adoption in a Cabinet Meeting. In case the sub-decree has not been adopted by the Cabinet Meeting, countersignature by the Minister(s) in charge shall be required. The Prime Minister can use this in exercising his own regulatory powers.

- **Proclamation/Ministerial Order (Prakas):** To be issued by members (minister or ministers) of the government in exercising their own regulatory powers.
- **Decision (Sechkdei Samrech):** Individual decision of the Prime Minister and Decision (Prakas-Deika) of a Minister or a Governor, which is used in exercising his own regulatory powers.
- **Circular (Sarachor):** In general, to be issued by the Prime Minister as head of government, and by a minister as an official of the ministry either to explain or clarify certain legal regulatory measures or to provide instructions.
- **Provincial Deika (Arrete):** To be used by a provincial governor within the geographical limits of his/her province.

Section III. Marketing Strategy of REDD+ Credits

The REDD+ carbon credits can be issued when projects has been validated and verified under a selected standards (e.g. VCS, CCBA, Plan Vivo and JCM) and this mean that the emissions reduction from the project are measurable which can be demonstrated. Under the VCS standard, carbon credits are called Verified Carbon Units (VERs) while other standard might call their credit differently, for instance the American Carbon Registry (ACR) called Emission Reduction Tons (ERTs). A carbon credits equivalent to one ton of carbon dioxide, which was reduced through an emission reduction from project activities. The price of carbon credits is depend on the project type, location and co-benefits and the projects that achieve biodiversity and community benefits tend to attract more buyers with more expensive price. All the credits that generated from the projects are held in a registry account owned by the project proponent and there are several registries to choose from such as Markit, APX , ACR and so on. A carbon credits can only be use once to offset one tone of emissions and it cannot be used more than once. As result, carbon credit buyers always retire their credits immediately to offset their emissions and each carbon credit has its own unique serial number which cannot be resold in the market after its retirement.

Some carbon credit purchasers might buy the credits but not wish to offset their emissions right away and they might retire the credits later or trade the credits to other purchasers. They are known as carbon credit brokers who will resale those credits for profit. There are several leading carbon brokers for REDD+ credits in the world and they are Everland, South Pole Group, Natural Capital Partners, Numerco and so on. Project proponents can sell carbon credits directly or utilize carbon brokers to market and sell their credits on their behalf. The carbon brokers will

approach potential buyers to sell the credits and they will charge certain percentage of each sale depend on the negotiation with the project proponents. In addition, Code REDD that is a non-profit organization has set up an online platform for project proponents who wish to register their project and sell their credits to individuals or companies who would like to offset their carbon footprint. The Stand For Tree-SFT is the online platform which lists several REDD+ project around the world and enable buyers to purchase carbon credits with their credits card. A carbon credit will be sold for $10 per ton and SFT will take $3 per credit from each sale. To be able to register the project in this online platform, project proponents have to pay an annual fee to the online platform. Some private companies pay the upfront cost for the REDD+ project development and they will take proposition of the credits in return or purchase credits at a certain price based on the their negotiation with the project proponents.

In Cambodia, all REDD+ projects which under the VCS and CCBA standard are using Markit as their registry system. Marketing of the carbon credits from those REDD+ projects is different from project to project depend on their technical partners who play a key role in project design and credits sale on behalf of the RGC. In the Oddar Meanchey Community Forestry REDD+ project, the RGC partners with Terra Global Capital (TGC) who is a profit firm that invest in technical support to develop the project and in return, TGC takes a proportion of the carbon credits from the project and sell directly to buyers. In this case, TGC plays a role as technical partner as well as the carbon broker for the project. According to the VCS project database, 48,000 of the 597,210 carbon credits certified in the first verification (2008–2013) have been sold, although revenues from these sales have yet to be distributed to local communities.

In Keo Seima Wildlife Sanctuary REDD+ project, the Wildlife Conservation Society, which is a non-profit organization, is a technical lead partner for the project and it is also play a role as carbon brokers by setting up a non-profit firm called Seima Carbon Company to market the carbon credits and oversight the transaction in the project. The firm is also working with other carbon brokers such as Everland, Natural Capital Partner and South Poles Group to market its carbon credits. In 2016, the project secured a first big sale in the country to Walt Disney which generated around $2.6 million and by working with those carbon brokers, the project has continue to sell more carbon credits that generate around $3.4 million of carbon sale in the project so far. In the Sothern Cardamom REDD+ Project, Wildlife Work is the lead technical partners in project development and it also play a role to market the carbon credits through Everland who is a carbon broker that founded in April 2017 by Wildlife Works to market REDD+ credits around the world. According to the MoE, the SC REDD+ project sold its credits to Shell which generated around $6 million in 2019.

The Tumring REDD+ Project was successfully validated under VCS and CCBA in 2018 and the project is still undergoing its verification process. As a result, the project has not generated carbon credits for sale yet. When the project is verified, credits from the project will need to be marketed to generate revenues to support the project implementation. The Prey Lang REDD+ Project is still under development and it will take several years to generate its JCM carbon credits. The marketing of the project credits will be depended on the Japanese government and Mitsui who paid upfront costs to start-up the project and support the project implementation. Therefore, the experience on credit marketing and arrangement of REDD+ project under JCM is remained to be seen in the future.

Section IV. Sustainable Financing Options

Amongst all the REDD+ projects implementation in Cambodia, the KSWS REDD+ project is the only advance project in term of their design on benefit sharing and financing options for sustainability of the project. There are some experience which could be drawn from this project for the design of financing options for other REDD+ projects in Cambodia. Prior to the first sale of carbon credits from the KSWS REDD+ project in 2016, the benefit sharing model have been developed and negotiated between the RGC and WCS to make sure that the maximum revenues will be used to sustain the project implementation in the long term. In accordance with the project's aims and objectives, this revenue was used to support the management of KSWS, including dedicated conservation activities and livelihood development. Furthermore, a portion of the revenue was channelled to 20 local communities identified as key stakeholders in the project. The process of revenue distribution was established through a Project Implementation Agreement between WCS and RGC pursuant to a Delegation of Powers that provides WCS with the authority to market credits, conduct transactions, and manage revenue.

The revenue distribution model is set within an Emission Reductions Purchase Agreement, which is required for each sale. The revenue distribution model has seven principal stages:

1. A portion of the revenue generated from a sale of carbon credits must be used to cover transaction costs, which include credit verification, issuance, and registry costs. The gross revenue from the sale is then fully invested in forest conservation in Cambodia.

2. A 10% share of gross revenue is transferred to the RGC and is used to support actions associated with forest conservation in Cambodia at a national or sub-national level, at the discretion of the government.

3. The remaining gross revenue is used to directly support the KSWS REDD+ project. Core project activities and budget, including site management and community work, are defined in an Agreed Annual Workplan (AAW) developed on-site at KSWS in collaboration among WCS, the Ministry of Environment (MoE), the Provincial Department of Environment, local NGO project partners, and community representatives. Implementation of these activities is supplemented by other sources of revenue from the government, and national and international donors. In this way, revenue from credit sales promotes the channelling of support from other institutions for the broad aims and objectives of the project.

Revenue that is surplus to the requirements of the annual project activity budget, as established in the AAW, is then divided in a 2:1:1 ratio among community investments, project strengthening, and an operating reserve:

4. Community investments are financial benefits shared directly with the 20 participating communities, in recognition of their contribution to the success of the project.
5. Project strengthening provides funding to activities or infrastructure to improve KSWS conservation outcomes. These are items that are not covered under regular operations.
6. An operating reserve is a component that allows for the continuation of project activities in years when annual revenues are lower than project budget requirements.
7. If revenues exceed caps set for the community, project strengthening, and operating reserve, then the remainder flows to the KSWS Permanence Reserve, which will support long-term government, community, and site priorities.

Figure 1: Project Area of Oddar Meachhey Community Forestry REDD+ Project

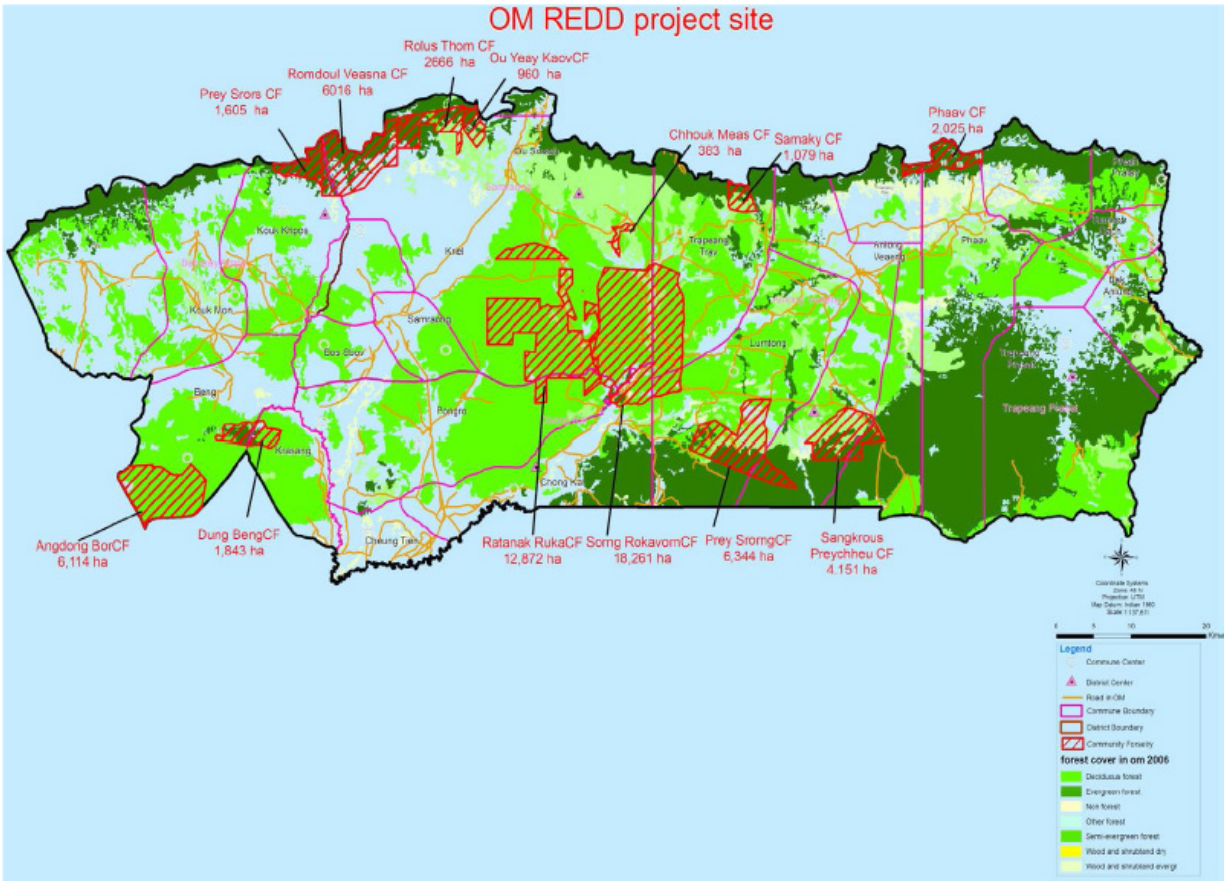


Figure 3: Project Area of Southern Cardamom REDD+ Project

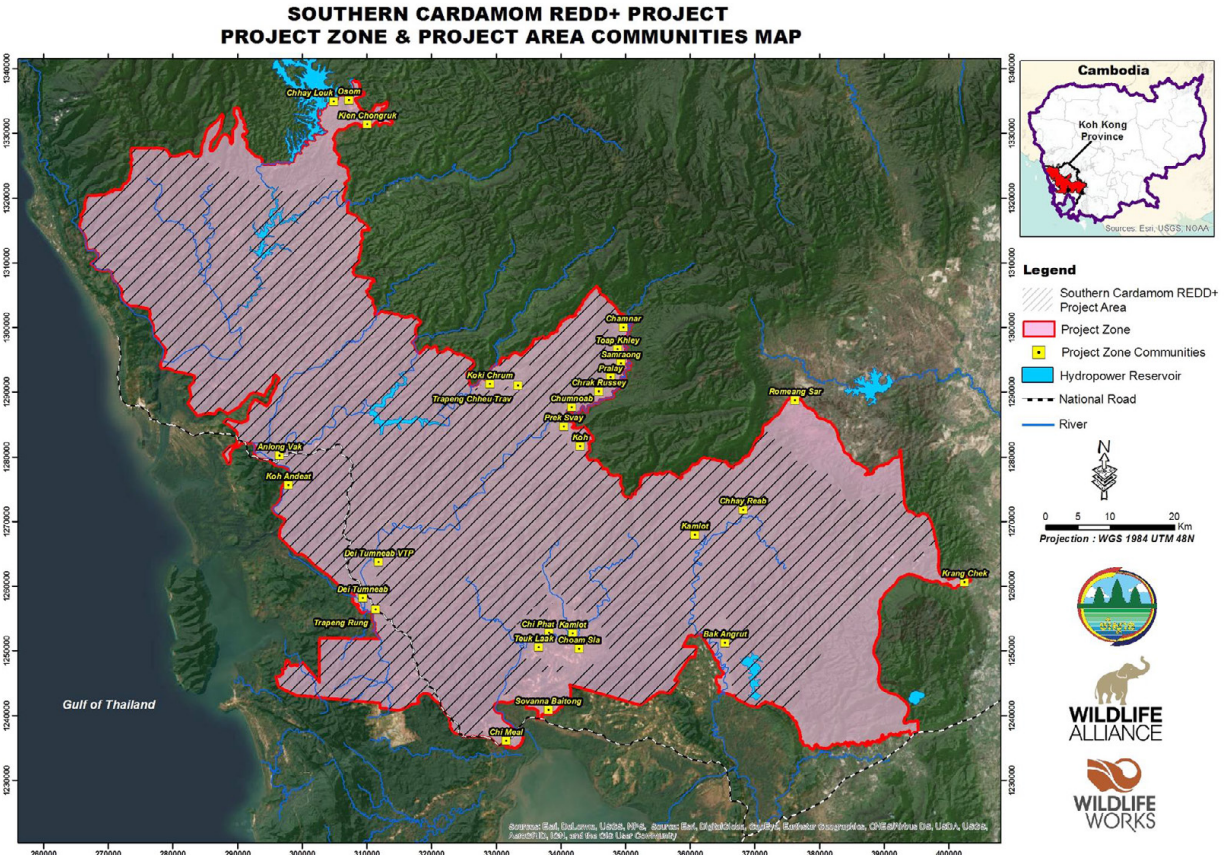


Figure 2: Project Area of Keo Seima Wildlife Sanctuary REDD+ Project

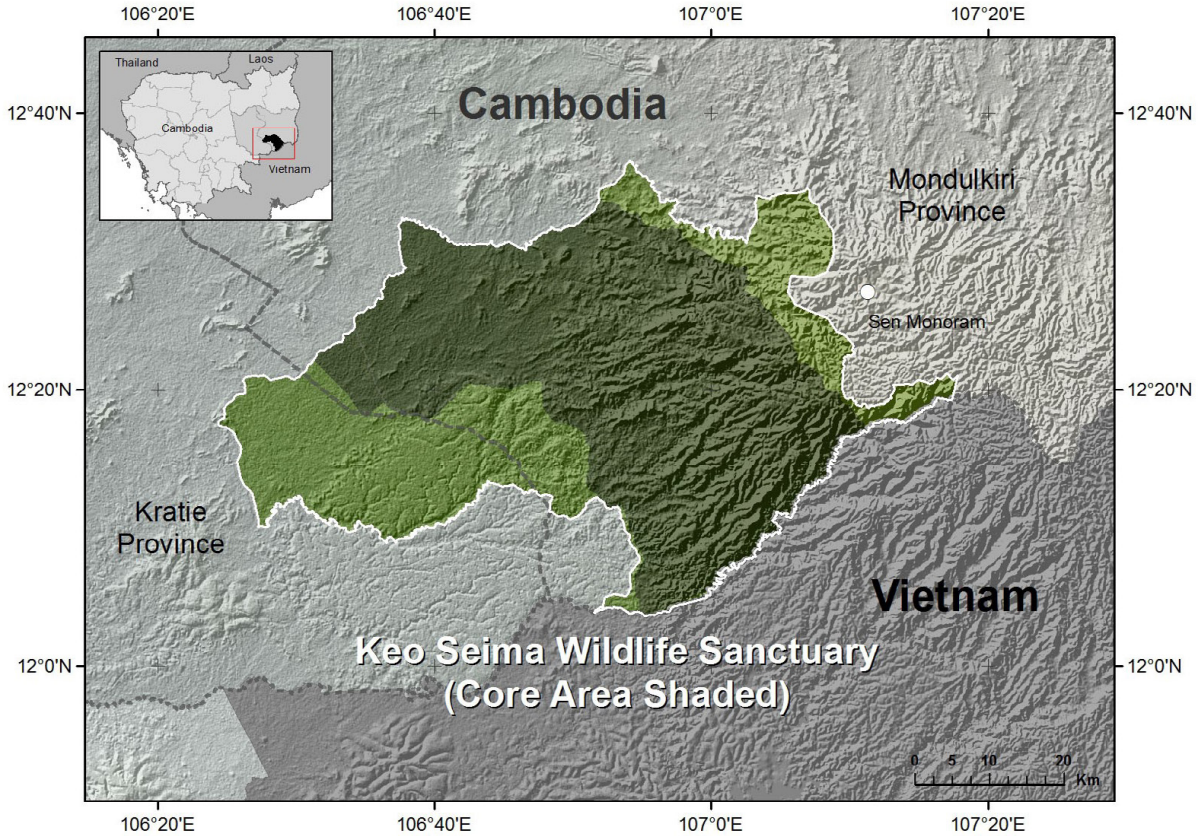
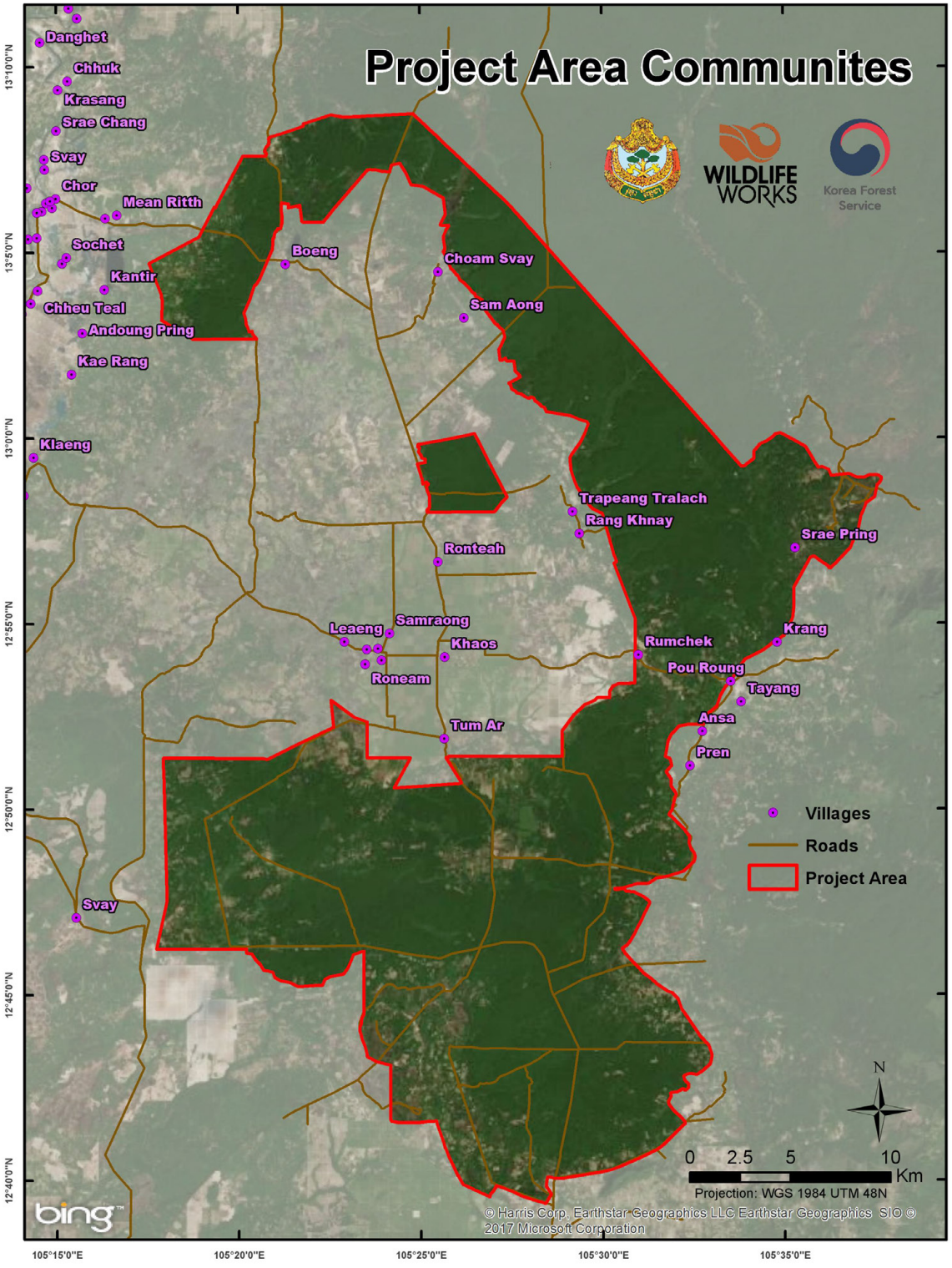


Figure 4: Project Area of Tumring REDD+ Project



Section V. Recommendation on commercialization and sustainable financing strategy in Cambodia

The RGC considers REDD+ an effective global initiative that will contribute to mitigating impacts of climate change in agriculture, forestry and related sectors. The RGC has clear vision that REDD+ is the national mechanism that provides an opportunity to support the MAFF, the MoE, and relevant stakeholders, including local communities and indigenous peoples in their efforts to sustainably manage forest resources in the country. At the same time, several REDD+ projects under VCS and CCBA standard and JCM are being implementing in several protected areas and production forest. Those projects have been mobilized more than $10 million in revenue to support the RGC and communities in biodiversity conservation and sustainable forest management for many years while the country are preparing to submitted all relevant documents for result based payment under the UNFCCC. As stated in the NRS, the RGC considers the implementation of sub- national and voluntary market based REDD+ projects subject to specific criteria and gets access to upfront non-results-based finance from bilateral and multilateral development partners, and supplement allocations from its national budget.

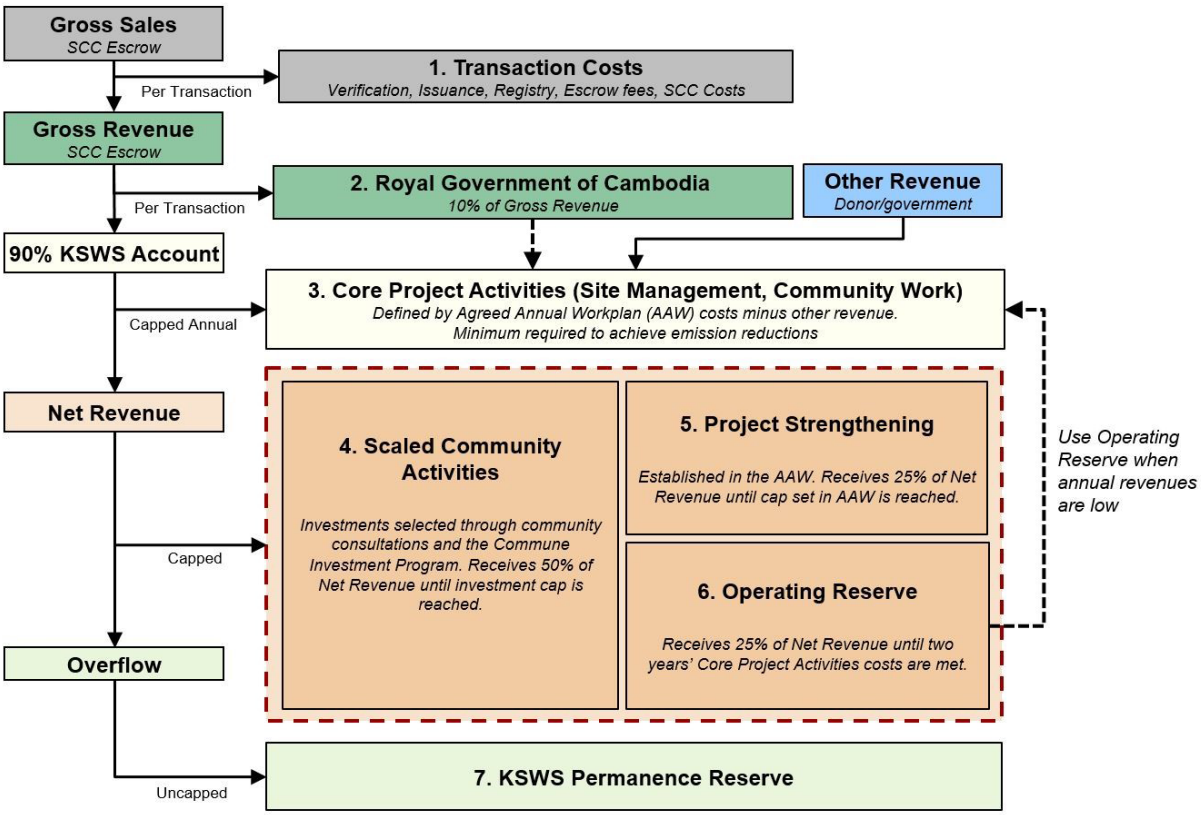
As a result, the following recommendation should be considered:

1. The RGC should consider developing a national guideline for REDD+ projects to make sure that all the project based REDD+ are in line with the implementation National REDD+ Strategy, particularly REDD+ nested approach to harmonize all REDD+ projects into the national system in the future.

2. The RGC is a project proponent for all REDD+ projects in Cambodia so to reduce the brokerage fee and low down the transaction costs and the RGC should negotiate with carbon brokers to market all its existing projects rather negotiate project by project which increase the fee and cost to market REDD+ credits for each project. For the REDD+ projects under the bilateral agreement such as Turming REDD+ project and Prey Lang REDD+ project, the RGC should start negotiate the carbon price and benefit sharing arrangement under these projects to secure the sale if the credits from these projects or what should be done to market the credits in those partners countries. The benefit sharing arrangement should take into account the model which currently being implemented in KSWS REDD+ project.

3. To manage all the REDD+ revenues from projects and result-based payment under the UNFCCC, the RGC should consider setting up the National REDD+ Fund, which can be used to channel relevant fund to specific REDD+ activities at sub-national and project levels. This funding mechanism will ensure that revenues from REDD+ could be channel to support REDD+ activities in a timely manner.

4. The RGC should consider online platform for all REDD+ project to engage with the public regarding the concept of climate change mitigation through REDD+ credit offset, particularly private companies and individual who would like to offset their emissions.




Commemorative Tree Planting


ITTO
Mr. Kim Sobon
Deputy Director Department of
Forest Plantation Development
and Private Forest
Mr. Youngtae CHOI
Ecosystem Restoration
Program Officer


ITTO
Third Project Steering Committee Meeting
on
Lim Bunna

Annexes

Annex I. Chapter 2. Respondent Profiles

Household survey was conducted with 219 families, of which 68% respondents were female and the other 32% were male. Higher number of female than male was due to their availability during the time of the survey. Most of women were at home, while men were at the field and some men were working very far from home. Many of them are a labor worker in Thailand or Korea. The range of age of respondents was from 18 to 81 years old.

The group of age from 18 to 50 accounted for 70.3% of total respondents. Some of these adult people were working in farm or used to go to the forest to collect NTFPs and participated in forest protection and management such as ranger. Therefore, they have witnessed how the forest in their community degraded or deforested in the past. On the other hand, the group of people aged more than 50 accounted for 29.6%. These were people who had experiences and knowledge about the forest cover and condition change in their community, so they could give their view on how and why the forest lost or degraded in their region.

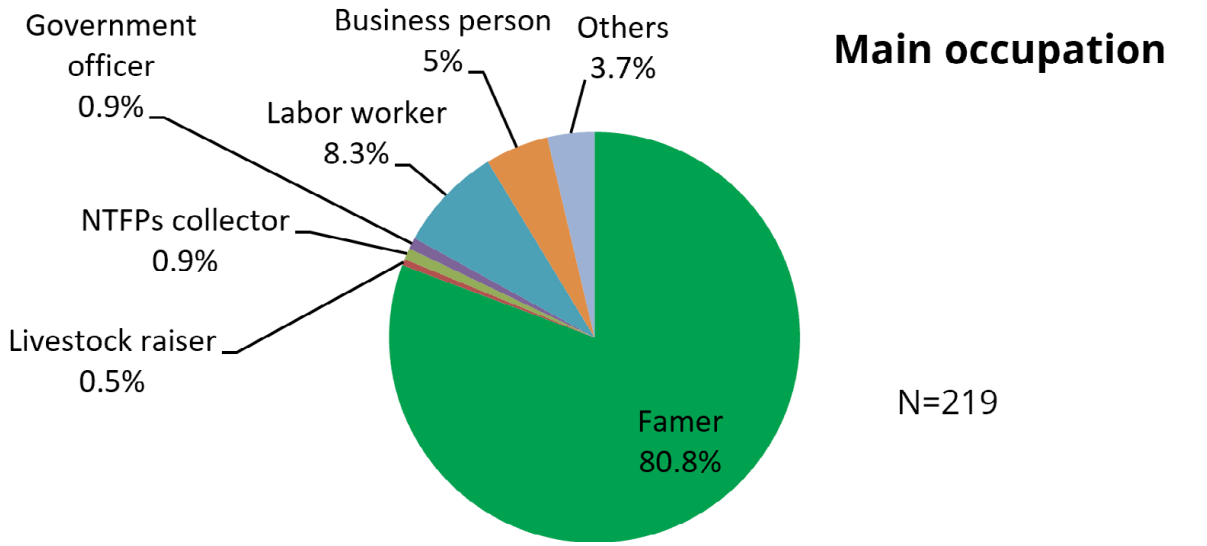
The majority of respondents (88.6%) were married, only 0.9% of them were single. Most of the households (70.8%) had 4 to 7 members in the family. Households with members less than 4 accounted for 21.5%, and the remaining 7.8% were households with more than 7 family members. The majority of respondents had educated until primary school (38.4%), while 26.5% were illiterate. There were 21.5% of respondents who had studied until secondary school and only 8.6% who had studied until high school.

Profile of respondents▶

Respondents' profile	Description	Percentages (%) N=219 (100%)
Gender	Male	32.0
	Female	68.0
Age	18-30	24.2
	31-40	29.2
	41- 50	16.9
	51-60	17.4
	>60	12.2
Marital status	Single	0.9
	Married	88.6
	Divorced	2.7
	Others	7.8
Household size	Not more than 3	21.5
	4-7	70.7
	More than 7	7.8
Level of Education	No education	26.5
	Informal education at pagoda	1.8
	Literacy class	2.7
	Primary school	38.4
	Secondary school	21.5
	High school	6.8
	Diploma, vocational Education	0.5
	College or higher	1.8

Basic information of respondents

The survey result shows that around 81% of respondents were farmers, following by 8.3% of labor workers, and 5% of business persons, only around 1% of NTFPs collectors and 1% of government officers.

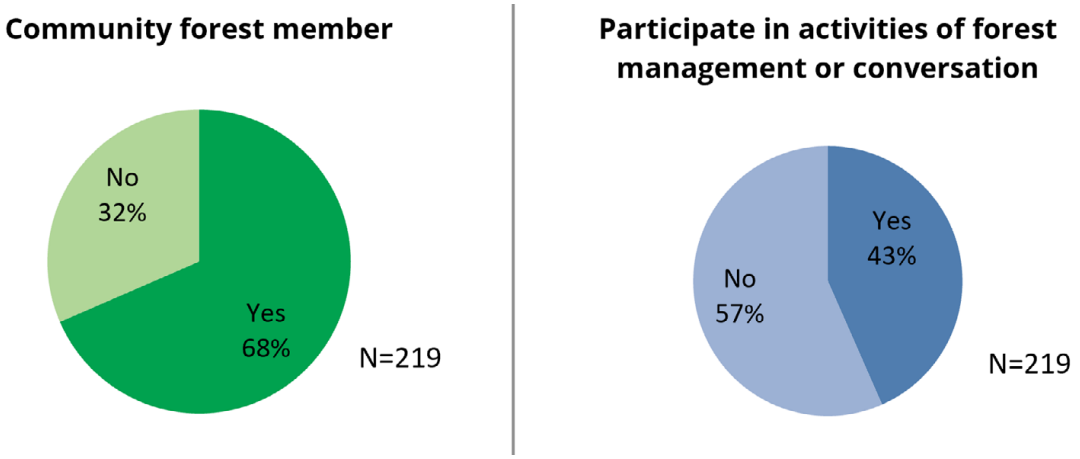


According to the survey, there were 15.5% of respondents who had just moved to live in the study area less than 10 years ago, while other 14.6% of respondents have stayed there for 10 years to 20 years. And the other 69.9% of respondents have stayed there more than 20 years.

Duration of respondents living in study area

Description	Year	Percentages (%) N=219 (100%)
Duration of living	1- 10 years	15.5
	10-20 years	14.6
	20-30 years	16.9
	>30 years	53.0

Surprisingly, the survey result reveals that 68.5% of respondents were the member of community forests. However, only 43.4% of respondents used to participate in any activities of forest management or conservation such as taking part in forest related activity meeting or forest ranging.



Annex II. Direct and indirect drivers of deforestation and forest degradation

Table 1: Average scores of the direct drivers of deforestation and forest degradation

Direct Driver	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
1) Illegal logging/ unauthorized forest encroachment	0.5	0.5	1.4	41.1	56.6	**4.53**
2) Commercial wood products	0.0	2.3	10.0	53.0	34.7	**4.20**
3) Land clearing for commercial cultivation	0.5	18.3	0.9	22.4	58.0	**4.19**
4) Charcoal production	1.4	25.1	6.8	45.2	21.5	**3.60**
5) Land clearance for subsistence cultivation	0.5	6.8	37.4	48.4	6.8	**3.54**
6) New settlements/Migration	0.9	9.6	42.0	39.7	7.8	**3.44**
7) Natural disaster (flood, storm)	1.4	22.4	31.1	34.7	10.5	**3.31**
8) Human induced forest fire	0.0	29.2	25.1	37.9	7.8	**3.24**
9) Fuelwood (domestic usage or local consumption)	0.0	18.7	43.4	36.1	1.8	**3.21**

Table 2: Indirect driver for deforestation and forest degradation

Indirect Driver	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
1) Limitation of law enforcement	0.0	0.0	3.2	60.7	36.1	**4.33**
2) Demand for wood	0.0	0.5	15.1	53.4	31.1	**4.15**
3) Land tenure and right issue	1.8	5.0	22.4	60.7	10.0	**3.72**
4) Population growth	0.0	6.4	47.5	38.8	7.3	**3.47**

Table 3: Drivers which did not affect forest cover change

Driver	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
Availability of fertile land to deforest	9.6	16.4	47.5	22.4	4.1	**2.95**
Building roads	3.2	37.0	37.0	22.4	0.5	**2.80**
Shifting cultivation	12.3	24.7	42.5	20.1	0.5	**2.72**
Establishment of public service such as water lines, electrical grids	16.4	45.7	26.9	10.0	0.9	**2.33**
Mining activity	26.9	58.4	8.2	4.1	2.3	**1.96**
Livestock grazing	31.1	54.3	13.2	1.4	0.0	**1.85**
Hydropower establishment	46.1	48.4	5.0	0.0	0.5	**1.60**

Table 4: Agents of deforestation and forest degradation

Agent	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
1) Furniture makers	0.0	1.8	10.5	57.5	30.1	**4.16**
2) Medium and large scale agricultural investors	0.0	19.2	4.6	34.7	41.6	**3.99**
3) Charcoal makers	1.4	26.9	7.3	43.8	20.5	**3.55**
4) Migrants	0.5	10.5	42.9	42.0	4.1	**3.39**
5) Firewood collectors	0.5	20.1	38.4	36.1	5.0	**3.25**
6) Subsistence farmers	4.6	16.9	38.8	39.3	0.5	**3.14**

Table 5: Agents and their activities contributed to deforestation and forest degradation

Agents	Activities	
Furniture makers	- Fell trees in huge amount for commercial wood products - Trigger illegal logging from local people	
Medium and large scale agricultural investors	- Convert forest land to agricultural land	
Charcoal makers	- Produce charcoal	
Land migrants	- Clear forest for land settlement - Clear forest for agricultural land - Trigger local people to clear forest land and sell to them	
Firewood collectors	- Collect wood for domestic use	
Subsistent farmers	- Clear forest land for growing crop	

Table 6: Agents that did not affect deforestation and forest degradation

Agent	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
Shifting cultivator	11.4	23.3	46.1	17.8	1.4	**2.74**
Infrastructural developers	0.0	29.2	25.1	37.9	7.8	**2.67**
Mining investors	23.3	43.4	7.8	21.0	4.6	**2.40**
Hydropower establishers	28.3	42.9	7.3	18.7	2.7	**2.25**
Livestock raisers	30.6	54.3	12.3	2.7	0.0	**1.87**

Table 7: Agents and reason of excluding them from project study

Agents	Reason
Shifting cultivator	- No more practice in the region
Infrastructural developers	- Not effect forest since the road was built or repaired on the existing road
Mining investors	- No mining activity in the region
Hydropower establishers	- No hydropower development in the region
Livestock raisers	- Local people raised animals in very small numbers such as chicken or cows

Annex III. Addressing drivers of deforestation and forest degradation

Table 1: Activities to address the deforestation and forest degradation

Activities	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
1) Fuel wood efficient cook stoves	0.0	0.8	6.2	25.3	60.7	**4.79**
2) Finance incentives for agriculture	0.0	0.9	7.3	35.6	56.2	**4.47**
3) Law enforcement on illegal logging	0.0	0.0	4.1	51.6	44.3	**4.40**
4) Improve market access for agriculture products	0.0	2.3	2.7	54.3	40.6	**4.33**
5) Community forest management	0.0	0.5	3.7	67.1	28.3	**4.24**
6) Reforestation/ tree plantation	0.0	1.8	10.0	60.3	27.4	**4.14**
7) Environmental education on forest management	0.5	1.8	7.8	63.0	26.9	**4.14**
8) Tenure and rights	1.4	0.5	8.7	67.1	22.4	**4.09**
9) Agricultural intensification	0.0	0.5	12.8	70.8	16.0	**4.02**
10) Restore the degraded forest	0.0	0.9	17.4	60.7	21.0	**4.02**
11) Good land use planning	0.0	4.6	12.8	75.8	6.8	**3.85**

Table 13: Measures to address the problem of deforestation and forest degradation

Activities	Illegal logging	Commercial wood products	Land clearance for commercial cultivation	Charcoal production	Land clearance for subsistence cultivation	New settlements/ Migration	Natural disaster	Human induced forest	Fuelwood
Fuel wood efficient cook stoves	√	√		√					√
Rooftop solar energy		√		√					√
Finance incentives for agriculture	√								
Law enforcement on illegal logging	√	√		√					
Improve market access for agriculture products	√								
Community forest management	√								
Reforestation/ tree plantation	√						√	√	√
Environmental education on forest management		√		√				√	√
Tenure and rights					√	√			
Agricultural intensification	√				√				
Restore the degraded forest	√						√	√	√
Good land use planning	√				√				

Table 14: Activities less suitable in address deforestation and forest degradation

Activities	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Score
	% (N=219)					
1) Environmental and social impact assessment for development proposal	1.4	3.2	16.0	72.6	6.8	**3.80**
2) Build infrastructure (school, hospital, tourist center) and employ local people	1.4	5.0	22.8	62.1	8.7	**3.72**
3) Create alternative income opportunities such as eco-tourism, aquaculture, handcraft and souvenirs	1.8	7.8	23.7	59.8	6.8	**3.62**
4) Agroforestry	1.4	4.1	34.7	51.6	8.2	**3.61**
5) Livestock/rangeland management	11.4	10.0	28.8	36.5	13.2	**3.30**

Annex IV. Default FREL

Table 1: Forest cover by districts in Kampong Thom province (2006-2016)

Districts	2006	2010	2014	2016	2006-2016	
	(ha)	(ha)	(ha)	(ha)	(ha year^{-1})	(%)
Baray	24,472.1	19,854.0	15,138.7	14,679.5	-979.3	-4.0%
Kampong Svay	59,642.4	61,975.9	47,070.1	45,229.1	-1,441.3	-2.4%
Krong Stueng Saen	1,843.0	1,163.5	4,066.5	3,950.1	210.7	11.4%
Prasat Ballangk	91,761.6	95,669.3	87,928.6	83,515.8	-824.6	-0.9%
Prasat Sambour	40,698.9	40,338.1	25,696.9	24,875.6	-1,582.3	-3.9%
Sandan	266,742.0	259,441.3	219,051.9	203,805.3	-6,293.7	-2.4%
Santuk	195,350.3	185,882.0	127,603.7	114,011.3	-8,133.9	-4.2%
Stoung	89,442.0	94,079.9	63,086.1	60,770.2	-2,867.2	-3.2%
Total	**769,952.3**	**758,403.9**	**589,642.7**	**550,836.9**	**-21,911.5**	**-2.8%**

Table 2 : Initial carbon stocks for forest land use category by pools in 2006 (per hectare)

Categories	Aboveground	Belowground	Dead Wood	Litters	Soil*[2]	Total	
	(MgC)	(MgC)	(MgC)	(MgC)	(MgC)	(MgC)	(MgCO2)
Evergreen Forest	96.2	27.8	27.2	13.6	35.4	200.2	734.0
Semi-Evergreen	98.1	29.8	14.5	12.4	38.1	192.9	707.3
Deciduous Forest	95.1	28.9	14.1	12.0	28.1	178.2	653.5
Bamboo*[1]	36.4	11.1	5.4	4.6	57.5	115.0	421.7
Wood shrub	25.0	7.6	3.7	3.2	34.0	73.5	269.3
Rubber plantation	47.0	13.6	13.3	6.6	42.2	122.7	450.0
Flooded forest	32.9	9.5	9.3	4.7	220.9	277.3	1016.6
Forest regrowth	35.3	10.2	10.0	5.0	33.9	94.3	345.6
Tree plantation	47.0	13.6	13.3	6.6	33.9	114.4	419.4

Note for Table 2

a1: based on the average stand volume of 194.0 m3 ha-1 from 162 sample plots (20m x 60m) in evergreen forests in Kampong Thom (Kim-Phat et al. 2000) and from 120 sample plots (20m x 60m) in evergreen forests in Preah Vihear provinces (Kao and Iida, 2006) in Cambodia. Carbon stocks (92.2) were derived by 194.0 * 0.57 (wood density)*1.74 (biomass expansion factor) * 0.5 (carbon content) using formula of Brown (1997).

b1: based on Chheng et al. (2016) who estimated the average carbon stocks of 98.1±3.6 MgC ha-1 from 179 sample plots (25m x 40m) in semi-evergreen forests in Kratie, Rattanakiri, and Stung Treng provinces in Cambodia.

c1: based on average stand volume of 191.7 m3 ha-1 from six sample plots in deciduous forest in Mondulkiri province in Cambodia (Khun et al., 2012). Carbon stocks, 95.1 = 191.7*0.57*1.74*0.5. A recent report based on data from 41 clusters (3 plots per cluster) in Seima protection forests estimated the average carbon stocks for open forest (comprising of mixed deciduous forest, deciduous dipterocarp forest and open woodland) to be 150.7 MgC ha-1 (±15.6% CI90) (FA, 2013).

d1: We used average biomass of bamboo forest in Bangladesh for this study (Altrell, 2007) because no data is currently available for bamboo forest in Cambodia.

e1: Based on (Sasaki, 2006)

f1: Based on mean biomass of shrubland in the Brazilian Savanna Woodland (De Miranda et al., 2014) but this biomass is very similar to average stocks of seminatural woody scrubland located in Seima Protection Forest in eastern Cambodia (FA, 2013).

Carbon stocks in belowground, dead wood, and litters in Table 1 were calculated as proportion to aboveground biomass based on (Kiyono et al., 2010) for litters and deadwood and Khun et al. (2012) for belowground biomass. Carbon in soil is based on Toriyama et al. (2018), except soil in bamboo, which is based on Pongon et al. (2016). Soil carbon of forest regrowth and tree plantation is assumed to be average of evergreen, semi-evergreen, and deciduous forest

Table 3 : Initial carbon stocks for forest land use category by pools in 2006 (per hectare)

Road No	Itinerary	Length (km)
AH1	Poipet (Cambodia-Thai Border) - Serei Saophoan - Phnom Penh - Baveth (Cambodia-Vietnam Border) Current Condition: - All paved with AC or DBST, Number of Lanes: 2 - One bridge at Neak Loeung was newly constructed under Japan Grant Aid - Plan to upgrade to 4 lanes starting from RN 5 - Plan Expressway (Phnom Penh-Bavet, under Jica's F/S)	573.0
AH11	Sihanoukville - Phnom Penh - Kampong Cham - Stung Treng - Tropeang Kreal (Cambodia - Laos Border) Current Condition: - All paved with AC or DBST, Number of Lanes: 2 - Under upgrading to 4 lanes from Phnom Penh to Skun (75km) - Plan Expressway (Sihanoukville-Phnom Penh, under China's F/S)	762.8
AH21 (new proposed road)	Sisophon junction with AH1 – (Cambodia-Vietnam Border) Current Condition: - Under rehabilitation 90% Completed - Number of Lanes: 2, DBST, One bridge across Mekong River at Stung Treng was already constructed.	600

Source: *Ministry of Public Works and Transport (2015)*

Table 4: Baseline emissions default FRELs and adjusted FRELs for Baray, Kampong Svay, Prasat Ballangk, and Prasat Sambour (unit: MgCO2)

Year	Baray		Kampong Svay		Prasat Ballangk		Prasat Sambour	
	Default FREL	Adjusted FREL	Default FREL	Adjusted FREL	Default FREL	Adjusted FREL	Default FREL	Adjusted FREL
2006	780,634.8	780,634.8	1,214,946.4	1,214,946.4	576,203.2	576,203.2	1,470,003.0	1,470,003.0
2007	739,587.6	739,587.6	1,176,559.8	1,176,559.8	570,441.5	570,441.5	1,388,823.7	1,388,823.7
2008	700,698.7	700,698.7	1,139,386.0	1,139,386.0	564,737.4	564,737.4	1,312,127.5	1,312,127.5
2009	663,854.7	663,854.7	1,103,386.7	1,103,386.7	559,090.3	559,090.3	1,239,666.7	1,239,666.7
2010	628,948.0	628,948.0	1,068,524.9	1,068,524.9	553,499.8	553,499.8	1,171,207.4	1,171,207.4
2011	595,876.8	595,876.8	1,034,764.5	1,034,764.5	547,965.1	547,965.1	1,106,528.8	1,106,528.8
2012	564,544.5	564,544.5	1,002,070.8	1,002,070.8	542,485.7	542,485.7	1,045,422.0	1,045,422.0
2013	534,859.8	534,859.8	970,410.0	970,410.0	537,061.2	537,061.2	987,689.7	987,689.7
2014	506,735.9	506,735.9	939,749.6	939,749.6	531,690.9	531,690.9	933,145.6	933,145.6
2015	480,090.8	480,090.8	910,057.9	910,057.9	526,374.3	526,374.3	881,613.7	881,613.7
2016	454,846.7	454,846.7	881,304.4	881,304.4	521,110.8	521,110.8	832,927.5	832,927.5
2017	430,930.1	646,395.1	853,459.3	1,280,188.9	515,900.0	773,850.0	786,930.0	1,180,395.0
2018	408,271.0	612,406.5	826,493.9	1,239,740.9	510,741.3	766,111.9	743,472.7	1,115,209.0
2019	386,803.4	580,205.0	800,380.6	1,200,570.9	505,634.2	758,451.2	702,415.2	1,053,622.8
2020	366,464.5	549,696.8	775,092.3	1,162,638.5	500,578.1	750,867.2	663,625.1	995,437.7
2021	347,195.2	520,792.8	750,603.0	1,125,904.6	495,572.6	743,358.9	626,977.1	940,465.7
2022	328,939.0	493,408.5	726,887.5	1,090,331.2	490,617.2	735,925.7	592,353.0	888,529.5
2023	311,642.8	467,464.2	703,921.3	1,055,881.9	485,711.3	728,566.9	559,641.0	839,461.5
2024	295,256.1	442,884.1	681,680.6	1,022,521.0	480,854.4	721,281.6	528,735.4	793,103.1
2025	279,731.0	419,596.5	660,142.7	990,214.1	476,046.2	714,069.2	499,536.6	749,304.9
2026	265,022.2	397,533.3	639,285.3	958,928.0	471,286.0	706,928.9	471,950.2	707,925.3
2027	251,086.9	376,630.3	619,086.9	928,630.3	466,573.4	699,860.0	445,887.3	668,830.9
2028	237,884.3	356,826.4	599,526.6	899,289.9	461,907.9	692,861.8	421,263.7	631,895.5
2029	225,375.9	338,063.8	580,584.4	870,876.6	457,289.1	685,933.6	397,999.8	596,999.7
2030	213,525.2	320,287.8	562,240.6	843,361.0	452,716.4	679,074.7	376,020.7	564,031.1

Table 5: Baseline emissions default FRELs and adjusted FRELs for Baray, Kampong Svay, Prasat Ballangk, and Prasat Sambour (unit: MgCO2)

Year	Sandan		Santuk		Stoung	
	Default FREL	Adjusted FREL	Default FREL	Adjusted FREL	Default FREL	Adjusted FREL
2006	4,652,081.0	4,652,081.0	7,128,498.7	7,128,498.7	2,623,774.9	2,623,774.9
2007	4,522,875.8	4,522,875.8	6,727,790.9	6,727,790.9	2,506,929.7	2,506,929.7
2008	4,397,259.1	4,397,259.1	6,349,607.7	6,349,607.7	2,395,287.9	2,395,287.9
2009	4,275,131.2	4,275,131.2	5,992,683.0	5,992,683.0	2,288,617.9	2,288,617.9
2010	4,156,395.3	4,156,395.3	5,655,821.8	5,655,821.8	2,186,698.3	2,186,698.3
2011	4,040,957.1	4,040,957.1	5,337,896.3	5,337,896.3	2,089,317.5	2,089,317.5
2012	3,928,725.0	3,928,725.0	5,037,842.0	5,037,842.0	1,996,273.4	1,996,273.4
2013	3,819,610.1	3,819,610.1	4,754,654.4	4,754,654.4	1,907,372.8	1,907,372.8
2014	3,713,525.6	3,713,525.6	4,487,385.3	4,487,385.3	1,822,431.3	1,822,431.3
2015	3,610,387.5	3,610,387.5	4,235,140.1	4,235,140.1	1,741,272.5	1,741,272.5
2016	3,510,113.9	3,510,113.9	3,997,074.0	3,997,074.0	1,663,728.0	1,663,728.0
2017	3,412,625.3	5,118,938.0	3,772,390.1	5,658,585.2	1,589,636.7	2,384,455.1
2018	3,317,844.3	4,976,766.4	3,560,336.2	5,340,504.3	1,518,845.0	2,278,267.5
2019	3,225,695.7	4,838,543.6	3,360,202.3	5,040,303.4	1,451,205.9	2,176,808.8
2020	3,136,106.4	4,704,159.6	3,171,318.3	4,756,977.5	1,386,579.0	2,079,868.4
2021	3,049,005.3	4,573,508.0	2,993,051.9	4,489,577.8	1,324,830.1	1,987,245.1
2022	2,964,323.4	4,446,485.1	2,824,806.2	4,237,209.3	1,265,831.1	1,898,746.6
2023	2,881,993.3	4,322,990.0	2,666,017.9	3,999,026.9	1,209,459.5	1,814,189.2
2024	2,801,949.9	4,202,924.9	2,516,155.5	3,774,233.3	1,155,598.3	1,733,397.5
2025	2,724,129.6	4,086,194.4	2,374,717.2	3,562,075.8	1,104,135.8	1,656,203.6
2026	2,648,470.6	3,972,705.9	2,241,229.4	3,361,844.0	1,054,965.0	1,582,447.5
2027	2,574,913.0	3,862,369.4	2,115,245.2	3,172,867.8	1,007,984.0	1,511,975.9
2028	2,503,398.3	3,755,097.4	1,996,342.8	2,994,514.3	963,095.1	1,444,642.7
2029	2,433,869.8	3,650,804.7	1,884,124.2	2,826,186.4	920,205.4	1,380,308.1
2030	2,366,272.4	3,549,408.6	1,778,213.7	2,667,320.5	879,225.6	1,318,838.4

Table 6: Baseline emissions default FRELs and adjusted FRELs Kampong Thom (unit: MgCO2)

Year	Kampong Thom		Krong Stueng Saen		Remarks
	Default FREL	Adjusted FREL	Removals	Removals	
2006	18,446,142.0	18,446,142.0	-62,016.1	-62,016.1	Baseline
2007	17,633,008.9	17,633,008.9	-38,391.2	-38,391.2	
2008	16,859,104.3	16,859,104.3	-28,231.5	-28,231.5	
2009	16,122,430.7	16,122,430.7	-22,483.6	-22,483.6	
2010	15,421,095.5	15,421,095.5	-18,759.3	-18,759.3	
2011	14,753,306.1	14,753,306.1	-16,139.0	-16,139.0	
2012	14,117,363.4	14,117,363.4	-14,189.6	-14,189.6	
2013	13,511,657.9	13,511,657.9	-12,679.7	-12,679.7	
2014	12,934,664.2	12,934,664.2	-11,474.0	-11,474.0	
2015	12,384,936.7	12,384,936.7	-10,487.7	-10,487.7	
2016	11,861,105.3	11,861,105.3	-9,665.1	-9,665.1	
2017	11,361,871.5	17,042,807.2	-8,968.2	-8,968.2	FRELs
2018	10,886,004.4	16,329,006.6	-8,369.6	-8,369.6	
2019	10,432,337.2	15,648,505.8	-7,849.8	-7,849.8	
2020	9,999,763.7	14,999,645.6	-7,393.8	-7,393.8	
2021	9,587,235.3	14,380,852.9	-6,990.5	-6,990.5	
2022	9,193,757.3	13,790,636.0	-6,631.1	-6,631.1	
2023	8,818,387.1	13,227,580.6	-6,308.6	-6,308.6	
2024	8,460,230.3	12,690,345.4	-6,017.6	-6,017.6	
2025	8,118,438.9	12,177,658.4	-5,753.7	-5,753.7	
2026	7,792,208.6	11,688,313.0	-5,513.0	-5,513.0	
2027	7,480,776.5	11,221,164.7	-5,292.8	-5,292.8	
2028	7,183,418.7	10,775,128.0	-5,090.3	-5,090.3	
2029	6,899,448.6	10,349,172.9	-4,903.6	-4,903.6	
2030	6,628,214.7	9,942,322.1	-4,730.7	-4,730.7	

Table 7: Default FREL, Adjusted FREL30, Adjusted FREL50, and removals in Kampong Thom province (unit: MgCO2)

Year	Default FREL	Adjusted FREL30	Adjusted FREL50	Removals
2006	18,446,142.0	18,446,142.0	18,446,142.0	-62,016.1
2007	17,633,008.9	17,633,008.9	17,633,008.9	-38,391.2
2008	16,859,104.3	16,859,104.3	16,859,104.3	-28,231.5
2009	16,122,430.7	16,122,430.7	16,122,430.7	-22,483.6
2010	15,421,095.5	15,421,095.5	15,421,095.5	-18,759.3
2011	14,753,306.1	14,753,306.1	14,753,306.1	-16,139.0
2012	14,117,363.4	14,117,363.4	14,117,363.4	-14,189.6
2013	13,511,657.9	13,511,657.9	13,511,657.9	-12,679.7
2014	12,934,664.2	12,934,664.2	12,934,664.2	-11,474.0
2015	12,384,936.7	12,384,936.7	12,384,936.7	-10,487.7
2016	11,861,105.3	11,861,105.3	11,861,105.3	-9,665.1
2017	11,361,871.5	14,856,619.0	17,042,807.2	-8,968.2
2018	10,886,004.4	14,233,459.9	16,329,006.6	-8,369.6
2019	10,432,337.2	13,639,399.1	15,648,505.8	-7,849.8
2020	9,999,763.7	13,072,985.8	14,999,645.6	-7,393.8
2021	9,587,235.3	12,532,844.9	14,380,852.9	-6,990.5
2022	9,193,757.3	12,017,672.3	13,790,636.0	-6,631.1
2023	8,818,387.1	11,526,231.8	13,227,580.6	-6,308.6
2024	8,460,230.3	11,057,350.6	12,690,345.4	-6,017.6
2025	8,118,438.9	10,609,916.8	12,177,658.4	-5,753.7
2026	7,792,208.6	10,182,875.7	11,688,313.0	-5,513.0
2027	7,480,776.5	9,775,226.8	11,221,164.7	-5,292.8
2028	7,183,418.7	9,386,021.1	10,775,128.0	-5,090.3
2029	6,899,448.6	9,014,358.4	10,349,172.9	-4,903.6
2030	6,628,214.7	8,659,384.2	9,942,322.1	-4,730.7

Annex V. REDD+ Roadmap and Phase

Figure 1: National Responsibilities for REDD+ Readiness in Cambodia Source

RGC/Council of Ministers
- management of all state properties
- adopts management plans for state properties
- transfers, reclassifies and designates entrusted authorities for state properties

Ministry of Economy and Finance
- maintains inventory of state properties
- executive agent of the RGC in managing state properties, including transfer, sale, lease, concessions, etc
- management of state revenue
- co-chair of state trust funds

2008 Public Financial Management Law, 2006 Subdecree # 129 , 2000 Subdecree #04

Ministry of Land Management, Urban Planning & Construction
- manage cadastral administration of state land
- issue title/ownership certificates to all immovable properties
- management of maps of Cambodia

2001 Land Law, 1999 Subdecree # 62

Ministry of Agriculture, Forestry and Fisheries
- general jurisdiction for forests and forest resources (PA management under MoE)
- registration of permanent forest estates

Forestry Administration:
- responsibility for the Permanent Forest Estate
- developing and implementing national forest programme (including community forestry)
- studying and collecting data on all state forests
- conducting assessments of national forest carbon stocks
- developing forest carbon trades
- reforestation

Fisheries Administration:
- responsibility for flooded forest and mangrove areas
- developing and implementing national fisheries plan (including community fisheries)

2002 Forestry Law, 2008 Subdecree #188, 2006 Fisheries Law

Ministry of Interior (inc. NCDD)
- subnational administration (prov/dist/comm)
- commune development plans & funds

identify functions to be transferred to sub-national councils (NCDD) *2008 Organic Law*

Ministry of Environment
- management of Protected Areas
- review environmental impact assessments
- CDM interim designated national authority

General Department (GDANCP):
- developing and implementing National Protected Areas Strategic Management Plan
- responsibility for international environmental conventions

Department of Climate Change of GDANCP:
- cooperate with relevant institutions to : develop national climate change strategies, and carbon credit policy, manage climate change trust funds; Secretariat of NCCC
- UNFCCC focal point: negotiations, implementing UNFCCC decisions and preparing national GHG inventory reports
- coordinating implementation of CDM and carbon credit projects

2008 Protected Areas Law, 1993 Royal Decree, 2008 Subdecree #37, 2009 Subdecree #175

Ministry of Rural Development
- Recognize indigenous communities for registration with MoI

2001 Subdecree

Figure 2: REDD+ institutional arrangement

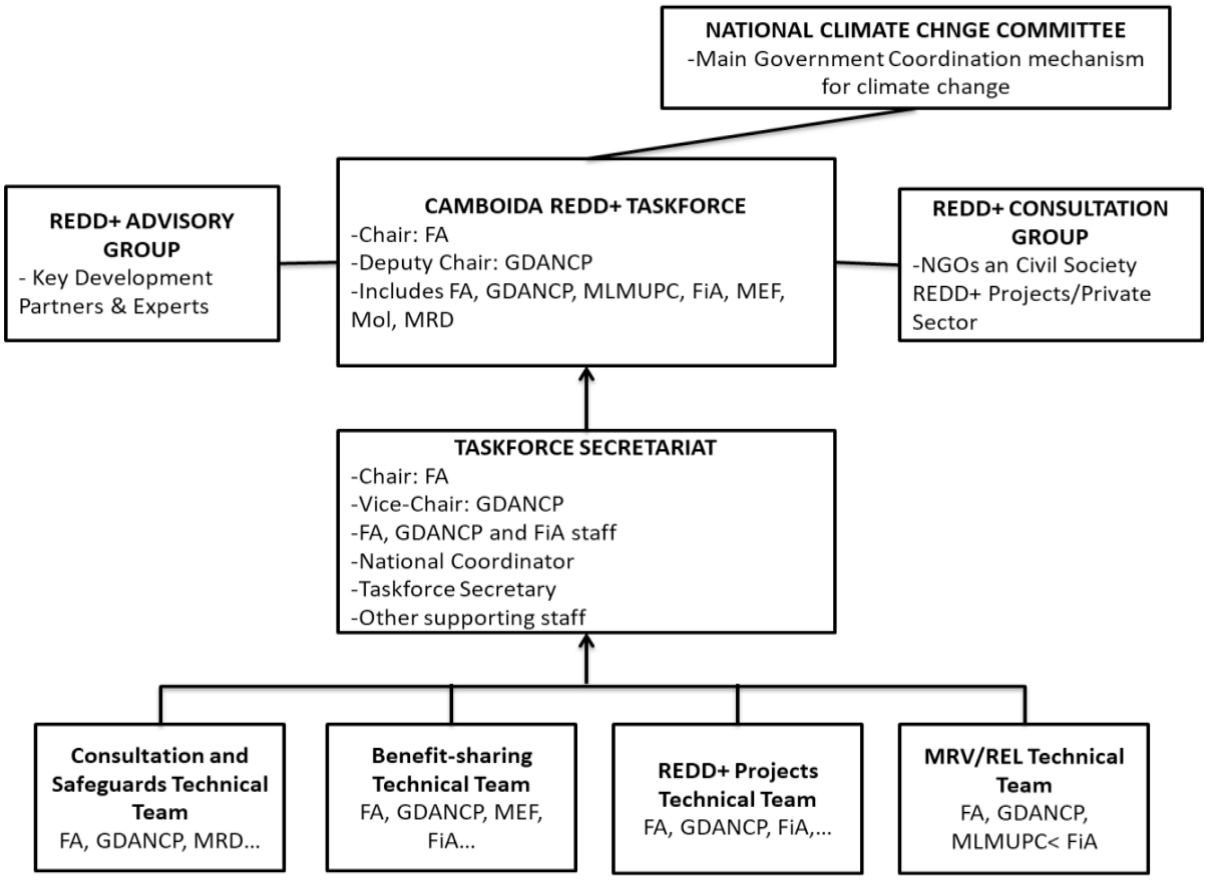


Table 1: The 3-Phase approach applied in Cambodia

Phase	Activities	Funding sources
1. Readiness Phase	- National REDD+ strategy development, including identification of drivers of deforestation and degradation and barriers to REDD+ and identification of REDD+ policies and legislation action - National consultations - Institutional strengthening - Pilot REDD+ demonstration activities and voluntary carbon market projects	- Donor-based grants
2. Design of REDD+ Interventions and Piloting Phase	- Land tenure and governance reforms - Forest law enforcement - Improved forest management - Sustainable agriculture - Protected area law enforcement - Sub-national demonstration	- Donor-based grants, payments from funds and sales of carbon credits on markets
3. Performance-based Payment Phase	- Consistent with performance contracts - Payments are made upon verified achievement of agreed benchmarks, including reduced or avoided greenhouse gas emissions. Reference scenario is established and monitoring system is in-place	- Payments from funds and sales of carbon credits on markets

Source: *(Royal Goverment of Cambodia & UN-REDD Programme, 2011)*

Table 2: Cambodian FREL submitted to the UNFCCC in 2016

Period (year to year)	2006-2010	2010-2014
Annual CO_2 Removals (t CO_2 / year)	6,626,082	20,299,560
AVG Annual CO_2 Removals (t CO_2/year)	13,462,821	
Annual CO_2 Emissions (t CO_2 / year)	-34,149,211	-151,253,835
AVG Annual CO_2 Emission (t CO_2/year)	-92,710,560	
Net Total Annual CO_2 Emissions and Removals (t CO_2 / year)	-27,523,129	-130,92,349
AVG Net Total Annual CO_2 Emissions and Removals (t CO_2 / year)	-79,247,739	

Source: *Leng (2016)*

Table 3: Key Deliverables by timeline

Item	Key Deliverables	Dates
1	Inception report including work plan	03 September 2018
2	Technical report including data gaps, quality control of data and inventory method	12 October 2018
3	Summary of the documents and data related to the mitigations actions and policies	29 October 2018
4	Report of the assessment by sectors and categories	09 November 2018
5	Training material. Reports of the mission	26 November 2018
6	Database of the GHG inventory. Report of QC report uncertainty analysis	21 January 2019
7	Draft of the improvement plan	31 January 2019
8	List of recommendations and comments	18 February 2019
9	Final draft of the GHG-I report. List of recommendations and comments	11 March 2019
10	Compilation of the GHG-I and chapters for the first BUR, including a copy of all documents generated during the consultancy	12 April 2019

Annex VI. REDD+ Pilot Projects in Cambodia

Table 1: Overview of REDD+ projects in this study

Project name	Reduced Emissions from Deforestation and Degradation in Community Forests-Oddar Meanchey	Reduced Emissions from Deforestation and Degradation Seima Protection Forest	Tumring REDD+ Project
Project Proponent	Royal Government of Cambodia (RGC), Forestry Administration	Royal Government of Cambodia (RGC), Ministry of Environment	Royal Government of Cambodia (RGC), Forestry Administration
Sectoral Scope	Agriculture, Forestry, Land Use	Agriculture, Forestry, Land Use	Agriculture, Forestry, Land Use
Province	Oddar Meanchey Province	Mondulkiri Province	Kampong Thom Province
Project Start Date GHG Accounting Period and Lifetime	-28 February 2008 -28 February 2008-28Februray 2038 30 years	-1 January 2010 - 1 January 2010-31 December 2069 60 years	-01 January 2015 -01 January 2015-31 December 2045 30 years

VCS Project Status	Registered	Registered	Registered
CCB Standards Status	Verification approved	Verified, under verification	Validation approved
Gold Level Criteria	Yes	Yes	No
Project Validator	Tuev Sued Industrie Service GmbH	SCS Global Services	SCS Global Services
Registry	Markit	Markit	Markit
Estimated Annual Emission Reductions	204,792 t CO_2e	1,426,648 t CO_2e	378,434 t CO_2e
Implementing partners	Pact, Terra Global Capital, Children's development Association, Monks community Forestry, 13 CF Groups	WCS, Cambodia Rural Development Team, Community Legal Education Centre	Action for Development (AFD), Wildlife Works Carbon, Forestry Administration, 23 CF Groups
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	Korea Forest Service, Forest of Administration, IITO

Table 2: Drivers of deforestation and forest degradation in Cambodia

	Within the forest sector	Outside the forest sector
Direct	- Unsustainable and illegal logging - Fire - Unsustainable woodfuel collection	- Clearance for agriculture - Expansion of settlements - Infrastructure development
	- Lack of demarcation of forest areas Low institutional capacity and weak policy implementation - Inadequate forest law enforcement - Weak forest sector governance: Low levels of stakeholder participation and involvement; Lack of transparency and accountability; Inadequate assessment of social and environmental impacts - Lack of sustainable or alternative supply of wood and timber,	- Population increases - Poverty - Rising incomes and demands for resources - Increasing accessibility of forest areas - Low agricultural yields - Migration into forest areas - New settlements, including in border areas - Large-scale agro-industrial developments (including economic and social land concessions and other concessions) - Land speculation - Regional demand for resources - Poor ESIA regulations and lack of implementation

Indirect	including for wood energy to meet demand - Demand for wood energy for domestic and industrial use - Low efficiency of wood conversion and use for construction, energy production, etc. - Lack of incentives promoting sustainable management of forests; - Lack of finance to support sustainable forest management activities by line agencies, local authorities and local communities	- Governance: Weak forestland tenure – tenure is weakest in forests and other areas outside residential or farming zones; Land grabbing; Weak enforcement of the law; Limited implementation of land registration (private and state); Insufficient implementation of land-use planning; Overlapping/unclear jurisdictions; - Social norms (claiming land through utilisation); - Economic benefits provided by sustainable management of forests at the national level often appear lower than alternative land-uses; - Opportunity costs of sustainable management of forests at the local level; - Low awareness of environmental roles of forests

Table 3: The REDD+ Activities implemented in the three REDD+ projects

Oddar Meanchey	Keo Seima	Tumring
1. Reinforcing the land-tenure status 2. Sustainable forest and land-use plans 3. Forest protection 4. Assisted natural regeneration and enrichment planting 5. Fuel-efficient stoves 6. Livestock protection from mosquitoes 7. Agricultural intensification 8. Natural resource management projects 9. Fire prevention	1. Develop key legal and planning documents for the SPF/KSWS and surrounding landscape are approved and implemented reduce forest and wildlife crime by direct law enforcement 2. Establish sustainable community use of land and natural resources adapt to climate change 3. Support alternative livelihoods that reduce pressure on forest and natural resource 4. Effective monitoring 5. Effective administration 6. Fund raising	1. Income generating activities 2. Deforestation free commodities and promote farmer production forestry 3. Promoting effective land use planning and tenure security 4. Strengthening community organizations 5. Training on agricultural methods and intensification 6. Employment and motivation of a larger ranger force 7. Improve health facilities and care

Table 4: Baseline scenario consideration in KSWS REDD+ Project

Baseline Scenario	Characteristics
Baseline scenario with respect to climate	-Historical data from 2002-2010
Analysis of historical land-use and land-cover change	-Medium resolution LANDSAT TM and ETM+ satellite images with a 30x30m pixel resolution. The image date were chosen from available imagery of 1998, 2000,2002,2004,2006,2008 and 2010
Analysis of the causes of deforestation and their likely future development	-Main agent is smallholder farmers -Population trends -underlying causes
Baseline scenario with respect to biodiversity	-Scenario is qualitative
Baseline scenario with respect to communities	-Sustainable Livelihoods Approach (SLA) -Scenario is qualitative

Table 5: Baseline of each project study

	Oddar Meanchey	Seima	Tumring
Baseline method	Simple historical average	Liner regression to identified the best time series function for projecting deforestation and a regression with good fit to the historical data	Use National UNFCCC FRL activity data (deforestation rate) and project-level emission factors
Project area	56,050 ha	166,983 ha	66,645 ha
Project crediting period	30 years	60 years	30 years
Reference area	738,757 ha excluding the project area	996,951ha including the project area	10,831,727 ha including the project area
Carbon pool	Above and below ground live tree biomass, Dead wood (standing and lying dead wood)	Above and below ground live tree biomass Dead wood (standing and lying dead wood)	Above ground tree and non- tree biomass, below ground tree and non-tree biomass

Sources of GHG	Included Carbon dioxide (CO_2) in baseline deforestation and degradation. In project scenario, CO_2 and Methane (CH_4) was found in the loss of biomass due to fire prevention activities, and Nitrogen dioxide (NO_2) was found from leakage prevention activities of fertilizer used for agricultural intensification	Consider Methane (CH4) as primary source of greenhouse gas emissions from Biomass burning	Tumring considered only Carbon dioxide (CO_2) as the main source of greenhouse gas emission
Summary of baseline and project scenarios	***Baseline scenario***: continuation of mosaic deforestation in the project area due to conversion of forest to small-scale subsistence farming, conversion to settlements, commercial logging and logging for local and domestic use, fuelwood, charcoal production and forest fires. ***Project Scenario***: activities include reinforcing land tenure status, land-use planning, forest protection, assisted natural regeneration and fire prevention are expected to reduce deforestation to 30% of the baseline deforestation rate.	***Baseline scenario***: continuation of frontier deforestation by small farm holders ***Project scenario***: active protection in and around the project area	***Baseline scenario***: continuation of pre-project land use activities including conversion to agriculture ***Project scenario***: protection in and around project boundary from unplanned deforestation and forest degradation

Figure 1: Quantification of GHG emission reductions and removals in TRP

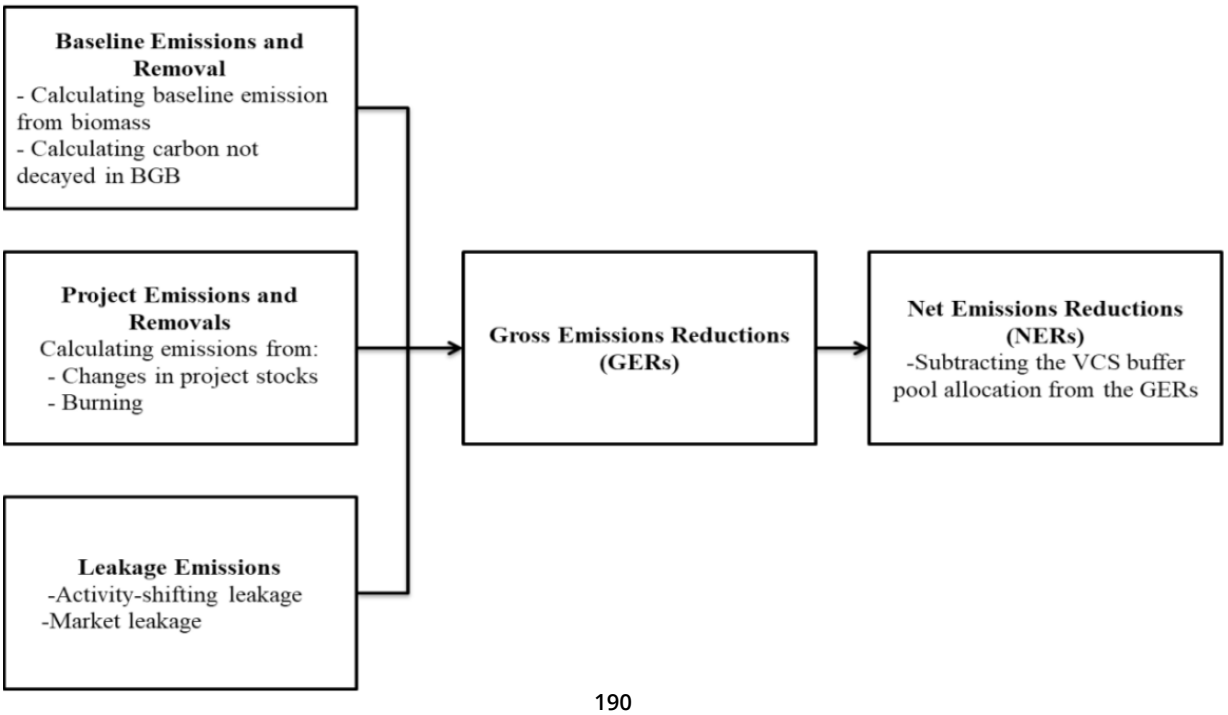


Figure 2: Steps for Quantification of GHG emission reductions and removals in Oddar Meanchey REDD+ project

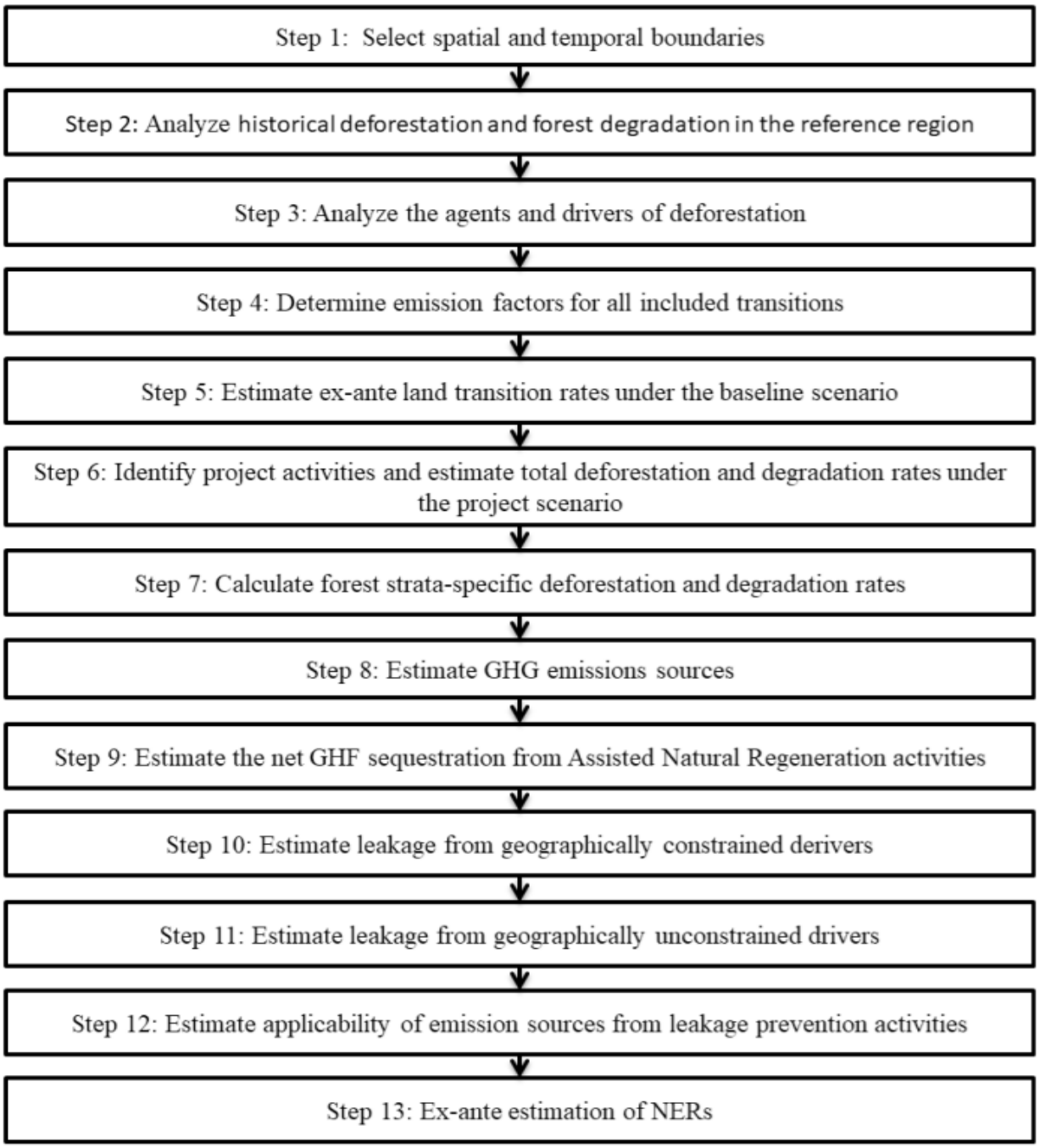


Figure 3: Steps for Quantification of GHG emission reductions and removals in KSWS REDD+ project

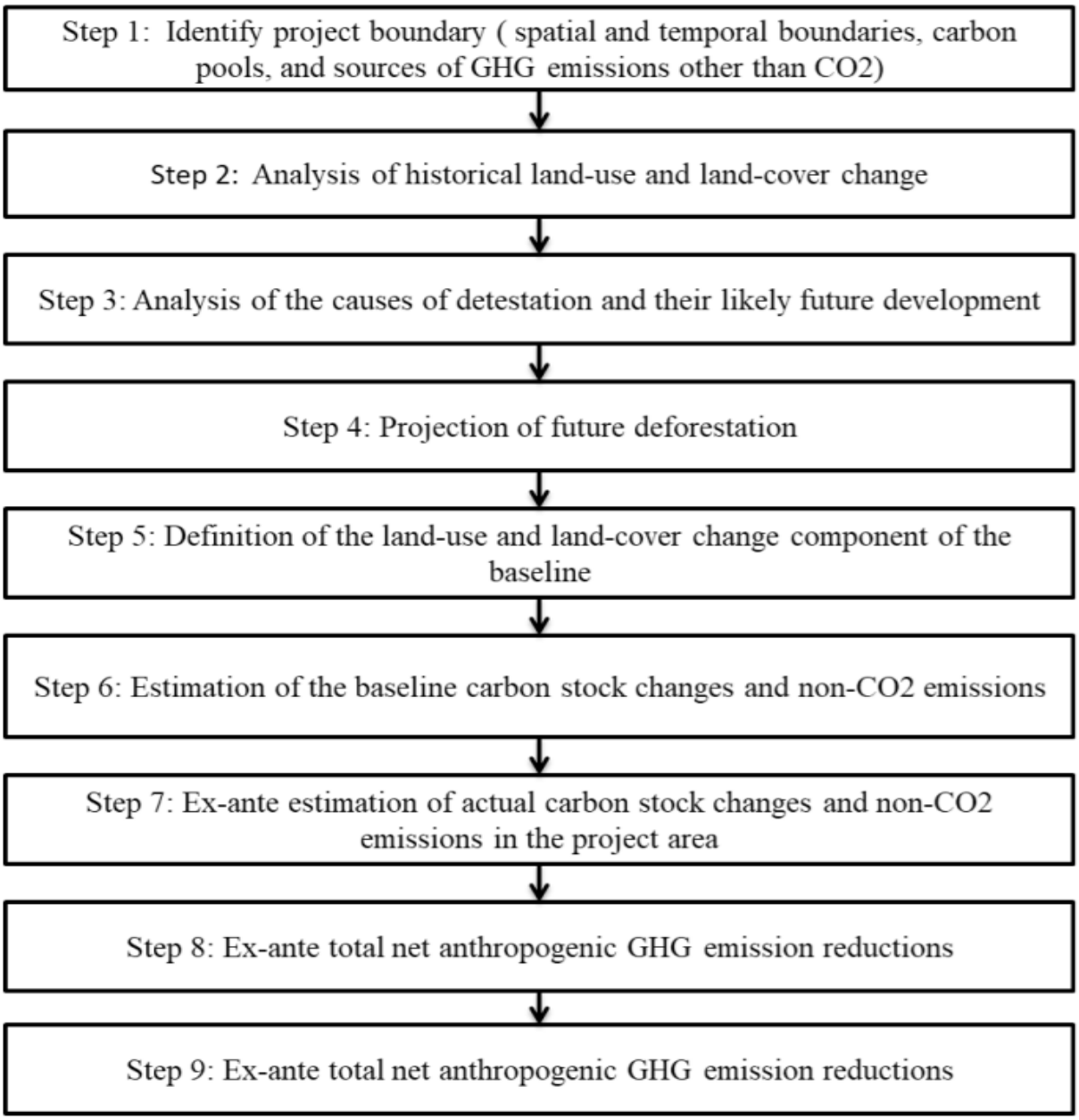


Table 6: Summary the steps used in quantifying the carbon emission

	Oddar Meanchey	Seima	Tumring
Project method	VM0006: the methodology for carbon accounting for mosaic and landscape-scale REDD+ projects	VM0015 : the methodology for Avoided Unplanned Deforestation	VCS VM0009: the methodology for Avoided Ecosystem Conversion

Forest strata	- Deciduous and mixed forest - Evergreen forest - No-forest	- Dense forest (evergreen, semi-evergreen and bamboo stands) - Open forest (mixed deciduous forest, deciduous dipterocarp forest and open woodland) - Mixed cropping	-Evergreen forest -Semi-evergreen forest -Deciduous forest
Carbon density stocks	- Deciduous and mixed forest: 56.63 Mg C /ha, - Evergreen forest: 139.38 Mg C /ha - Non-forest: 1.62 Mg C/ ha	- Dense forest: 274.0 t C/ha - Open forest: 156.3 t C/ha - Mixed cropping: 54.31 t C/ha	Evergreen forest: 495.4 tCO_2e/ha Semi-evergreen forest: 135.5 tCO_2e/ha Deciduous forest: 118.6 tCO_2e/ha Proxy area: 5.6 tCO2e/ha
Plot design	- Systematic random sample -Permanent and temporary plots -152 Sample plots, with 61 in the evergreen forest, 55 in the deciduous and mixed forest and 36 in non-forest strata -Square 50 mx50m permanent plots	-Systematic random sample -Permanent and temporary plots - 312 plots (104 plot clusters) -Nested plot design: 20 m circle for live trees and standing dead wood ≥ 5 cm DBH, 40m circle for live tree and standing dead wood ≥ 30 cm DBH, and 100m transect for lying dead wood ≥5 cm diameter)	- Random sample plots - Number of samples plots: confidential - Nested circular sample plot design - The largest plot had ad radius of 15 m and the smaller plot had a radius of 5 m
Carbon pools measured	- Tree ≥ 5 cm at DBH (1.3meters) -Standing deadwood ≥ 5 cm at DBH -Lying deadwood with a diameter ≥ 10 cm	- Living trees >5 cm diameter at breast height - Dead wood (including both standing and lying wood) - Root biomass was estimated using standard conversion factors	-Measured all trees in the larger plot -Measure shrubs in smaller plot - Tree ≥ 10 cm diameter measured at 1.3 m above the ground.
	-Logged tree stump and canopy cover		-Smaller woody plants are considered shrubs
Annual deforestation rate	3.03%	~4 - 4.5%	2.1%
Leakage	No	No	10% of ex-ante NER estimates for activity-shifting leakage 0.5% of market leakage

Leakage management activities	- Fuel-efficient stoves - Livestock protection from insects -Agricultural intensification -Water resource development projects - Non-Timber Forest Product (NTFP) development activities	- Legal and planning activities - Direct law enforcement -Community land-use -Alternative livelihoods	- Improved and intensified agriculture -Employment of a ranger force -Strengthen forest land use planning and secure land tenure -Alternative-income generation -Micro-finance schemes
Baseline carbon stock changes	- Estimate ex-ante land transition rates under the baseline scenario	- Baseline carbon stock change in the above-ground biomass in the project area - Baseline carbon stock change in the below-ground biomass in project the area - Baseline carbon stock change in the deadwood pool in the project area - Baseline carbon stock change in the above-ground biomass in the leakage belt - Baseline carbon stock change in the below-ground biomass in the leakage belt - Baseline carbon stock change in the deadwood pool in the leakage belt	Emission factors: Evergreen forest (489.9 tCO2e/ha), deciduous forest (113.1 tCO2e/ha), Semi-evergreen forest (130.0tCO2e/ha) -TRP area-weighted mean Emission Factor is 484.0 tCO2e/ha Baseline emissions (FRL)= Activity Data (A) x Emission Factor (EF)
Carbon stock change under project scenario	-Estimate decrease in deforestation rate under the project scenario (project activities are	- Ex ante estimation of carbon stock changes due to unavoidable unplanned deforestation, and hence total	- Estimate of avoided baseline emissions, which is derived from an estimate of carbon
	expected to reduce deforestation to 30% of the baseline deforestation rate) - Calculate forest strata-specific deforestation and degradation rates -Estimate GHG emissions from fire breaks and other fire prevention measures	emissions, within the project area (through project activities include Legal framework, law enforcement, sustainable land-use, and alternative livelihoods) - Ex-ante total net anthropogenic GHG emission reductions.	stocks and the baseline models -Estimates of ex-ante avoided baseline emissions by assuming that the total carbon stock in the project area is equal to the initial carbon stock for each future monitoring period

	-Estimate the net GHG sequestration from Assisted Natural Regeneration activities -Emission reductions from fuel-efficient cook stoves -Estimate carbon in long-lived wood products		
Net Emission Reductions (NERs)	ΔGHG from avoided deforestation + ΔGHG from deforestation due to leakage + ΔGHG from avoided degradation + GHG from leakage by unconstrained geographic drivers + ΔGHG from assisted natural regeneration + GHG from improved cookstoves	ΔREDDt = ΔCBSLPAt – ΔCPSPAt- ΔCLKt Where: ΔREDDt = ex-ante estimated net anthropogenic greenhouse gas emission reduction attributable to the project activity at year t; tCO_2e ΔCBSLPAt = Sum of baseline carbon stock changes in the project area at year t; tCO_2e ΔCPSPAt = Sum of ex ante estimated actual carbon stock changes in the project area at year t; tCO_2e	Annual NERs for the project are calculated for each PAA by subtracting VCS buffer pool allocation from the GERs $E_{\Delta NER}^{[m]} = E_{\Delta GER}^{[m]} = E_{BA}^{[m]}$

Table 7: Type of project studies

Project	Emission reduction (tCO_2-eq year)	Type of project
Oddar Meanchey	272,926	Project
Keo Seima Wildlife Sanctuary	1,426,648	Mega project
Tumring	325,680	Project

Table 8: Estimated GHG emission reductions per year of project studies

Year	Oddar Meanchey		Keo Seima Wildlife Sanctuary		Tumring	
	Calendar year	Estimated GHG emission Reductions t CO_2e	Calendar Year	Estimated GHG emission Reductions t CO_2e	Calendar year	Estimated GHG emission Reductions or removal t CO_2e
1	2008	-34,844	2010	-	2015	261,524

2	2009	-68,209	2011	-46,899	2016	237,805
3	2010	-99,627	2012	-194,658	2017	246,106
4	2011	-134,965	2013	286,974	2018	254,441
5	2012	-166,655	2014	2,083,049	2019	309,244
6	2013	-187,670	2015	2,743,753	2020	271,235
7	2014	-226,106	2016	2,753,228	2021	279,446
8	2015	-259,594	2017	2,267,670	2022	287,780
9	2016	-268,214	2018	2,138,582	2023	296,114
10	2017	-273,250	2019	2,234,785	2024	398,515
11	2018	-286,316			2025	308,549
12	2019	-306,805			2026	308,562
13	2020	-340,920			2027	308,571
14	2021	-369,155			2028	308,789
15	2022	-390,825			2029	446,589
16	2023	-391,063			2030	308,561
17	2024	-365,856			2031	308,571
18	2025	-363,430			2032	308,789
19	2026	-347,786			2033	308,549
20	2027	-343,892			2034	484,163
21	2028	-307,173			2035	308,571
22	2029	-294,201			2036	308,789
23	2030	-295,645			2037	308,549
24	2031	-283,587			2038	308,561
25	2032	-308,188			2039	516,102
26	2033	-328,596			2040	308,789
27	2034	-316,648			2041	308,549
28	2035	-300,142			2042	308,561
29	2036	-285,509			2043	308,571
30	2037	-242,896			2044	543,467
Total	30 years	-8,187,767	10 years	14,266,485	30 years	9,770,412

Average	Annual	-272,926		1,426,648		325,680

Source: (Terra Global Capital, 2012); (WCS, 2015); (Wildlife Works Carbon LLC, 2017)

Table 9: Monitoring, reporting and verification (MRV)

	Oddar Meanchey	Keo Seima	Tumring
Project validation date	October 2012	November 2015 April 2017	June 2018
Project verification date	August 2013	April 2017	TBD
Activity monitoring and verification	Periodical, every 2 years	Annual	Biannual, annual , every 2-3 years depending on activities
Baseline update	Every 10 years	Every 10 years	Every 10 years
Re-measurement of forest plots during first 10 year period	every 2 years	No	Every 5 years (20% of the plots will be re-measured annually, achieving 100% sample plot coverage every five years)
Auditor site visit	4 Feb - 9 Feb 2013	3 Nov - 7 Nov 2014	TBD

Annex VII. Case reviewed Chapter 4

Table 1: Case studies reviewed

	Project	Methodology	Funding Sources	Status
1	Community Forestry	CF guideline	Donor and Government funding	Received formal agreement
2	Community Fishery	CFi guideline	Donor and Government funding	Received formal agreement
3	Community Protected Area	CPA guideline	Donor and Government funding	Received formal agreement
1	Oddar Meanchey REDD+ Project	VCS&CCB-MV0006	Donor based funding	First VCUs issued in 2015
2	Keo Seima Wildlife Sanctuary REDD+ Project	VCS&CCB-MV00015	Donor based funding	2nd VCUs issued
3	Southern Cardamom REDD+ Project	VCS&CCB-VM0009	Donor based funding	Under validation

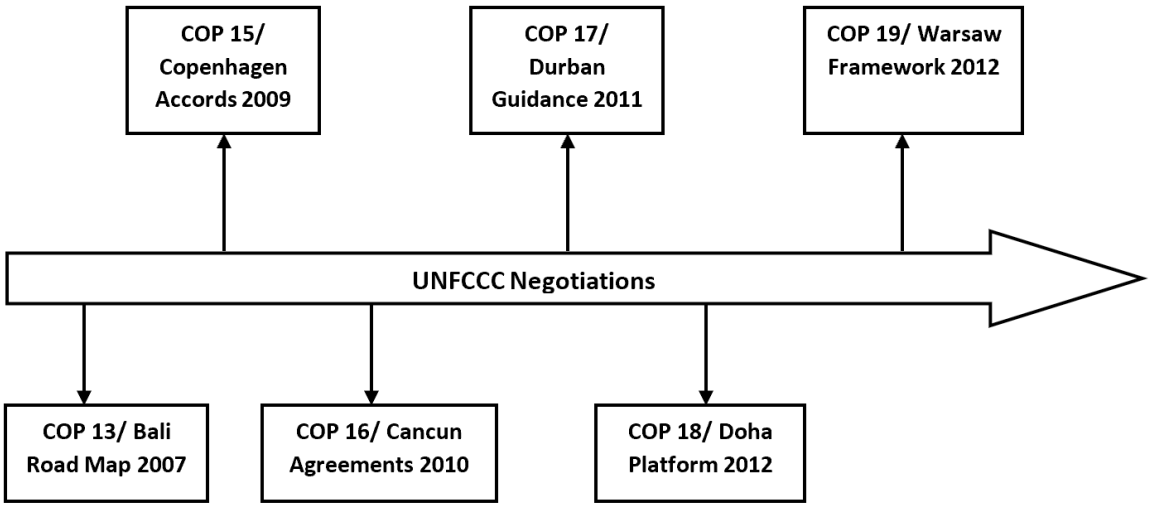
4	Prey Lang Joint Credit Mechanism-REDD+	JCM-REDD+ Meth	Public and private funding	PDD being develop
5	Tumring REDD+ Project	VCS&CCB-MV0009	Bilateral Funding	Completed validation and preparation for verification

Table 2: Support made to participated community under REDD+

Category	Examples of incentives type for communities
Core state forest management activities *Not conditional on behaviour.*	- Continued and secure access to natural resources, including non-timber forest resources such as resin, that may otherwise be destroyed - Secure and formal property rights to land and forest resources - Equitable zoning and access systems for communities with rights of use - Improved forest quality - Employment in community-based patrolling and monitoring
Alternative livelihood projects *Needed in part to reduce drivers of deforestation at source. Some could be made conditional on behaviour.*	- Community livelihood development, e.g. livestock raising, agricultural intensification, savings groups and/or micro-finance for enterprise development - Financial incentives and increased community empowerment and capacity - Most likely administered through a „community development fund "at the village or project level. - Some incentives could be awarded at the household level.
Other incentives *These only affect deforestation through conditionality, and so all should be conditional.*	- Additional incentives payments for conservation activities or outcomes - This might be a bonus payment for exceptional performance, awarded to households or villages - Could include support for public services that are not alternative livelihoods per se, for example roads, health clinics, schools, other infrastructure

Annex VIII. Evolution of REDD+ negotiations at the UNFCCC

Figure 1: The evolution of REDD+ negotiations at the UNFCCC



Source: Author's construction based on information collected from desk review

Table 1: REDD+ participating countries

UN-REDD Programme Countries (n=12)	Both UN-REDD and FCPF Countries (n=23)	FCPF's Participant Countries (n=13)
1. Bangladesh	13. Argentina	36. Cameroon
2. Bhutan	14. Bolivia	37. Chile
3. Côte d'Ivoire	15. **Cambodia**	38. El Salvador
4. Ecuador	16. Central African Republic	39. Ghana
5. Mongolia	17. Colombia	40. Lao PDR
6. Nigeria	18. Costa Rica	41. Liberia
7. Pakistan	19. Democratic Republic of Congo	42. Madagascar
8. Philippines	20. Ethiopia	43. Mozambique
9. Solomon Islands	21. Gabon	44. Nicaragua
10. Sudan	22. Guatemala	45. Suriname
11. Sri Lanka	23. Guyana	46. Thailand
12. Zambia	24. Honduras	47. Uganda
	25. Indonesia	48. Vanuatu
	26. Kenya	
	27. Mexico	
	28. Nepal	
	29. Panama	
	30. Papua New Guinea	
	31. Paraguay	
	32. Peru	
	33. Republic of Congo	
	34. Tanzania	
	35. Vietnam	

Source: 1. World Bank's FCPF https://www.forestcarbonpartnership.org/redd-countries

Table 2: Warsaw Framework for REDD+

Decisions	Descriptions	Links
9/CP.19	Work programme on results-based finance to progress the full implementation of the activities referred to in decision 1/CP.16, paragraph 70	English
10/CP.19	Coordination of support for the implementation of activities in relation to mitigation actions in the forest sector by developing countries, including institutional arrangements	English
11/CP.19	Modalities for national forest monitoring systems	English
12/CP.19	The timing and the frequency of presentations of the summary of information on how all the safeguards referred to in decision 1/CP.16, appendix I, are being addressed and respected	English
13/CP.19	Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels	English
14/CP.19	Modalities for measuring, reporting and verifying	English
15/CP.19	Addressing the drivers of deforestation and forest degradation	English

Source: UNFCCC (2013)

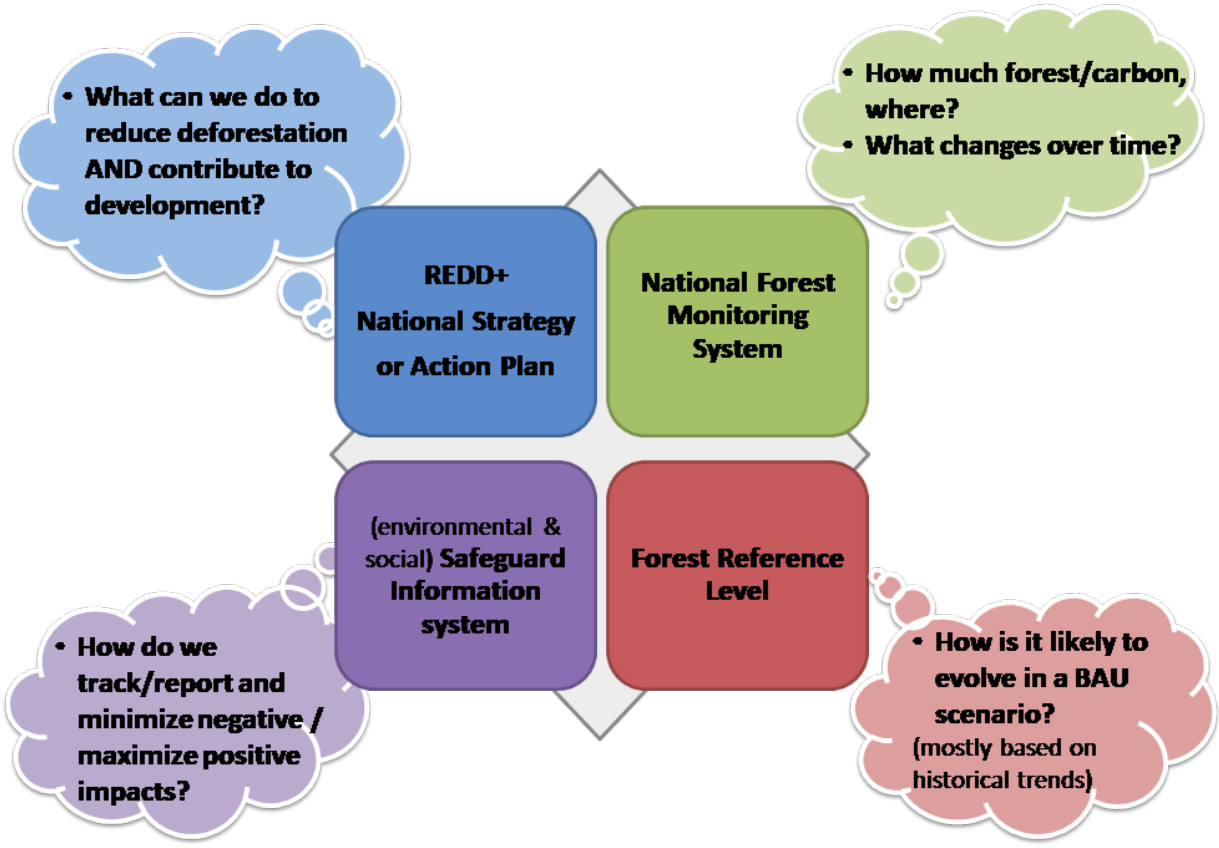
Table 2: Actions and corresponding financial instruments for the three phases

Phase	Scope	International Financial Instrument
Phase 1	National REDD strategy development, capacity building, institutional strengthening. Demonstration activities. Strategy development elements include, *inter alia*, reference level and monitoring, reporting, and verification (MRV) assessments and participation of indigenous peoples and local communities (see Chapters 3, 4, and 5, respectively).	Voluntary contributions. **Eligibility**: Demonstrated cross-sectoral commitment to REDD strategy development within the national government. **Examples**: Forest Carbon Partnership Facility of the World Bank (FCPF) and United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) "readiness" funding.
Phase 2	Implementation of National REDD Strategy PAMs. Strategy implementation elements include, *inter alia*, reference level setting, improvement of MRV, and participation of indigenous peoples and local communities.	Global facility (unitary fund, or clearinghouse that records eligible bilateral and multilateral contributions relative to binding commitments). **Eligibility**: Demonstrated cross-sectoral commitment to REDD strategy implementation within the national government. Continued access dependent upon performance, including proxy

		indicators of emission reductions and/or enhanced removals. **Example**: Brazil's Amazon Fund.
Phase 3	Quantified changes in GHG emissions and/or removals.	Transition from global facility to integration with compliance markets. **Eligibility**: Compliance-grade MRV and emissions/removals accounting relative to agreed reference levels.

Source: Angelsen and colleagues (2009)

Figure 1: The Warsaw Framework for REDD+



Source: Cambodia National REDD+ Strategy 2019

Annex IX. REDD+ in Cambodia

Figure 1: The 3-phase approach as applied in Cambodia

Phase 1: Readiness Phase

Activities may include:

- National REDD+ strategy development, including:
  - Identification of drivers of deforestation and degradation and barriers to REDD+
  - Identification of REDD+ policies and legislative action
- National consultations
- Institutional strengthening
- Pilot REDD+ demonstration activities and voluntary carbon market projects

Funding: Donor-based grants

Phase 2: Implementation Phase

Activities may include:

- Land tenure and governance reforms
- Forest law enforcement
- Improved forest management
- Sustainable agriculture
- Protected area law enforcement
- Sub-national demonstration

Funding: Donor-based grants, payments from funds and sales of carbon credits on markets

Phase 3: Performance-based Payments Phase

Consistent with performance contracts:

Payments are made upon verified achievement of agreed benchmarks, including reduced or avoided greenhouse gas emissions. Reference scenario is established and monitoring system is in-place.

Funding sources: payments from funds and sales of carbon credits on markets

Source: Royal Government of Cambodia and UN-REDD Programme (2011)

Box 1: REDD+ readiness achievements and gaps

National REDD+ Strategy

- **Achievements**: The final document was approved by the RGC in December 2017 and a National Investment Framework is now being finalized.
- **Gaps**: Very little REDD+ NS awareness in the general public, intensive engagement efforts are necessary. NRS lacks a financial instrument which can receive and channel RBPs to beneficiaries transparently and equitably and needs a stronger inter-coordination between ministries (especially MoE and MAFF). Non-forestry drivers also must be addressed to have a complete action towards drivers of deforestation and forest degradation.

National Forest Monitoring System (NFMS)

- **Achievements**: The design of a National Forest Monitoring System was completed in September 2017.
- **Gaps**: NFMS is not yet operational but for REDD+ needs to be fully operational, and formally institutionalised to support the development of the REDD+ Technical Annex as part of the BUR with REDD+ results at least twice over the project lifetime. Full LULUC assessment of the country needs to be undertaken to support implementing and reporting progress on the nationally determined contributions (NDC) in the land use, land use change and forestry (LULUCF) sector.

Forest Reference Emission Level / Forest Reference Level (FREL/FRL)

- **Achievements**: FRL submitted to UNFCCC in 2016. The FREL comprises a deforestation baseline for 2006 to 2014 based on activity data from 2006 to 2014 (land use change maps). FRL will serve as the basis for measuring, reporting and verifying forest carbon emission reductions associated with implementation of REDD+ activities in the context of RBPs. The FRL is national.
- **Gaps**: The FRL needs to be supplemented by results from a national inventory of forest biomass to obtain a more accurate and transparent estimate of (historical) emissions. The FRL may need to be adjusted in future to meet specific technical requirements established (e.g. by GCF) to access RBPs.

Safeguards and Safeguards Information System (SIS)

- **Achievements**: Up to the end of 2018, significant policy analysis and consultations have been completed to design and establish an SIS.
- **Gaps**: If it is not apparent that an SIS is ready for implementation. Cambodia needs to submit a summary of information on how UNFCCC Cancun Safeguards are addressed and respected in implementation of REDD+ activities. It lacks an SIS that addresses UNFCCC, GCF and other donors safeguard requirements (however the SIS is expected to be completed early 2019).

Source: Cambodia National REDD+ Strategy

Annex X. UNFCCC Decisions on Safeguards

Box 1: Cancun Agreements (Decision 1/CP.16, Appendix I)

When undertaking the activities referred to in paragraph 70 of this decision, the following safeguards should be promoted and supported:

a. That actions complement or are consistent with the objectives of **national forest programmes** and relevant **international conventions and agreements**;
b. Transparent and effective **national forest governance structures**, taking into account national legislation and sovereignty;
c. **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 United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;
d. The **full and effective participation of relevant stakeholders**, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of this decision;
e. That actions are consistent with the **conservation of natural forests and biological diversity**, ensuring that the actions referred to in paragraph 70 of this decision 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**;
f. Actions to address the **risks of reversals;**
g. Actions to reduce **displacement of emissions**.

Box 2: Durban Guidance (Decision 12/CP.17)

*Decision 12/CP.17 agrees that systems for providing information on how the safeguards referred to in appendix I to decision 1/CP.16 are addressed and respected should, taking into account **national circumstances and respective capabilities**, and recognizing **national sovereignty and legislation**, and relevant **international obligations and agreements**, and respecting **gender considerations***:

a. Be consistent with the guidance identified in decision 1/CP.16, appendix I
b. Provide transparent and consistent information that is accessible by all relevant stakeholders and updated on a regular basis;
c. Be transparent and flexible to allow for improvements over time
d. Provide information on how all of the safeguards are being addressed and respected;
e. Be country-driven and implemented at the national level;
f. Build upon existing systems, as appropriate.

Box 3: Warsaw Framework for REDD+ (Decision 12/CP.19)

1. Developing countries should provide **a summary of information** on safeguards, throughout the implementation of the activities;
2. The summary of information referred to the above should be provided periodically and be included in national communications, or communication channels agreed by the Conference of the Parties;
3. The summary of information could **also be provided, on a voluntary basis**, **via the web platform on the UNFCCC website**;
4. Developing countries should start providing the summary of information in their national communication or communication channel, including via the web platform of the UNFCCC **after the start of the implementation of activities**;
5. The **frequency of subsequent presentations of the summary of information** should be consistent with the provisions for submissions of national communications from countries not included in Annex I to the Convention and, on a voluntary basis, via the web platform on the UNFCCC website.

Figure 1: Proposed systems of safeguards (source: UN-REDD programme)

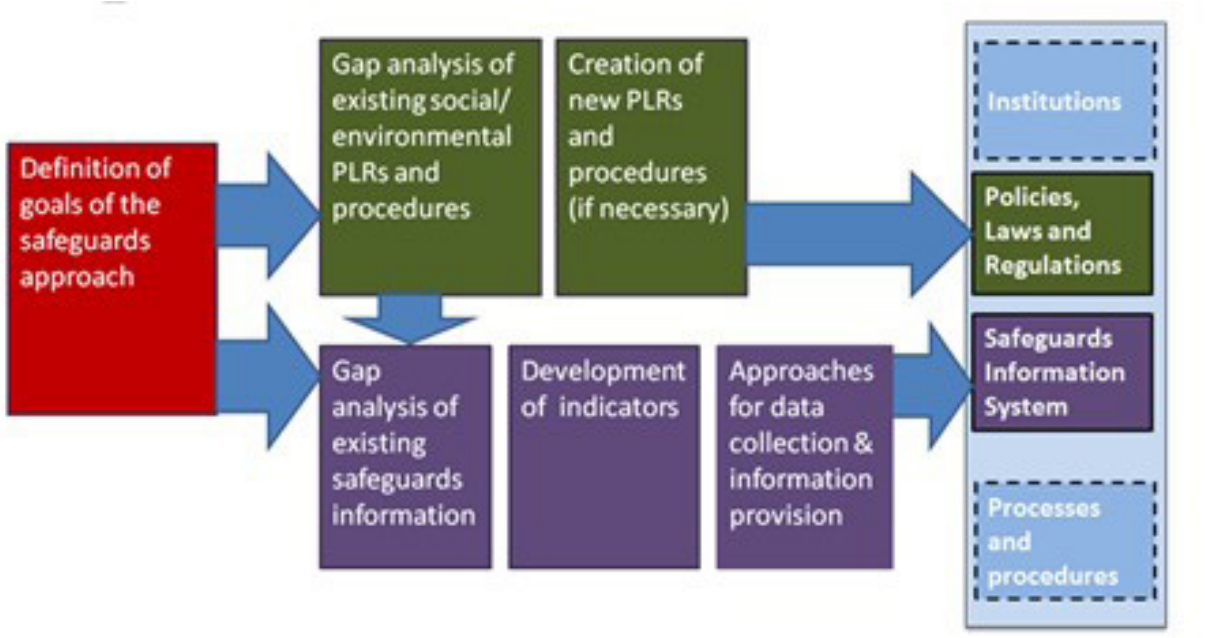


Table 1: Governance and social and environmental principles under the UNFCCC

Governance and social principles	• REDD+ activities and safeguards should take into account and be consistent with the objectives of national forest programmes and relevant international conventions and agreements • Transparent and effective national forest governance structures, taking into account national legislation and sovereignty • Respect for the knowledge and rights of IPs and members of local communities including the application of FPIC procedures, in reference to the UNDRIP • Full and effective participation of relevant stakeholders in REDD+, in particular IPs and local communities • Enhance social benefits
Environmental principles	• Not to be used for conversion of natural forests • Address the risks of reversals • Reduce displacement of emissions • Conservation of natural forests and biodiversity and • Enhance environmental benefits (e.g. biodiversity and ecosystem services)

Annex XI. Key safeguard initiatives at the global level

Box 1: Seven principles of UN-REDD SEPC

1. Apply norms of democratic governance, as reflected in national commitments and Multilateral Agreements
2. Respect and protect stakeholder rights in accordance with international obligations
3. Promote sustainable livelihoods and poverty reduction
4. Contribute to low-carbon, climate-resilient sustainable development policy, consistent with national development strategies, national forest programmes, and commitments under international conventions and agreements
5. Protect natural forest from degradation and/or conversion
6. Maintain and enhance multiple functions of forest including conservation of biodiversity and provision of ecosystem services
7. Avoid or minimise adverse impacts on non-forest ecosystem services and biodiversity

Box 2: Seven principles of REDD+ SES

1. The REDD+ programme recognises and respects rights to lands, territories and resources.
2. The benefits of the REDD+ programme are shared equitably among all relevant rights holders and stakeholders.
3. The REDD+ programme improves long-term livelihood security and well-being of IPs and local communities with special attention to women and the most marginalised and/or vulnerable people.
4. The REDD+ programme contributes to good governance, to broader sustainable development and to social justice.
5. The REDD+ programme maintains and enhances biodiversity and ecosystem services.
6. All relevant rights holders and stakeholders participate fully and effectively in the REDD+ programme.
7. The REDD+ programme complies with applicable local and national laws and international treaties, conventions and other instruments.

Table 1: Comparison of SEPC, SESA and SES against Cancun safeguards

Cancun safeguards	SEPC (UN-REDD)	SESA (World Bank)	SES (CCBA and Care International)

Consistent with the objectives of national forest programmes and relevant international conventions and agreements
 	
Reflect the national circumstances and existing information structures
	• Contribute to low-carbon, climate-resilient sustainable development policy, consistent with national development strategies, national forest programmes, and commitments and under international conventions and agreements (P3)
	• Ensure consistency with and contribution to
	  ○ national climate policy objectives
	  ○ national poverty reduction strategies and other sustainable development goals
	  ○ national biodiversity conservation policies and other environmental and natural resource management policy objectives
	  ○ international commitment on the environment (P4)
		• R-PP to be structured to comply with the UNFCCC and all other relevant international and national agreements and laws	• Coherent with relevant policies, strategies and plans at all relevant levels (p4)
			• Contributes to achieving the objectives of sustainable development policies (P4)
			• Comply with applicable local law, national law and international treaties, conventions and other instruments ratified or adopted by the country (P4)
			• Respect, protect, and fulfil human rights (P4)

Transparent and effective national forest governance structures taking into account national legislation and sovereignty	• Apply norms of democratic governance (P1) • Ensure the transparency, accountability of fiduciary and fund management systems (P1) • Ensure legitimacy and accountability of all bodies representing relevant stakeholders including through establishing responsive feedback and grievance mechanisms (P1) • Promote coordination, efficiency and effectiveness among all agencies and implementing bodies relevant to REDD+ • Promote and enhance gender equity and women's empowerment (P2) • Promote and support the rule of law, access to justice and effective remedies (P1) • County specific indicators can be developed	• ESMF can be revised over time	• The REDD+ program contributes to good governance, to broader sustainable development and to social justice (P4) • The governance structure of the REDD+ program are clearly defined, transparent, effective and accountable(P4) • Improved governance in the forest sector and other relevant sectors (P4) • Effective coordination between agencies/organizations responsible for the design, implementation and evaluation of the REDD+ program and other relevant agencies (P4) • Finances of the REDD+ program are managed with integrity, transparency and accountability (P4)
N.A. (Additional)		• Identify, avoid and mitigate potential adverse impacts on the rights and welfare of the people who depend on forest including Indigenous Peoples (OP 4.10 and 4.36)	• Conduct transparent and participatory assessment of predicted and actual benefits, costs, and risks of the REDD+ program for relevant rights holder and stakeholders groups at all levels, in order to mitigate negative and enhance positive effects on them with special attention to women and marginalized groups (P2)

Respect for the knowledge and rights of IPs and members of local communities including the application of FPIC procedures, in reference to the UNDRIP	• Respect and protect stakeholder rights to land, territories and resources including carbon (P2) • Seek Free Prior Informed Consent (FPIC)[xliv] (P2) • Ensure no involuntary resettlement (P2) • Respect ad protect traditional knowledge and cultural heritage and practices (P2)	• Pay special attention to the issues of land tenure, resource-use rights and property rights. Clarify and ensure their rights to land and carbon assets, including community (collective) rights (OP 4.10 & Guideline on stakeholder engagement). • Undertake free, prior informed consultation[xlv] with affected Indigenous Peoples (OP 4.10) • Avoid or minimize involuntary resettlement and compensate those who are replaced (OP 4.12)	• Identify, recognize and respect both statutory and customary rights to lands, territories and resources of indigenous peoples or local communities (P1) • Where the REDD+ programs enables private ownership of carbon rights, recognition the rights based on the statutory and customary rights to the lands, territories and resources (P1) • Identify all rights holder and stakeholder groups and characterizes their rights and interests and their relevance to the REDD+ program (P6) • Require FPIC of Indigenous Peoples and local communities affecting their rights to lands (P1) • Respect, support and protect rights holders 'and stakeholders' traditional and other knowledge, skills, institutions and management systems (P1)
Full and effective participation of relevant stakeholders in REDD+	• Full and effective participation of relevant stakeholders in design, planning and implementation of REDD activities with particular attention to indigenous peoples, Local communities and other vulnerable and marginalized groups (P1)	• Involvement of stakeholders especially indigenous peoples in the preparation process to incorporate their views and concerns (OP 4.01) • Consultation and benefits to indigenous peoples (OP 4.10) • Inclusion of a broad range of relevant stakeholders for the consultation process at the national and local levels including indigenous peoples, forest dependent communities, women and other marginalized groups (Guideline on stakeholder engagement).	• Fully involve rights holders and stakeholder groups in REDD+ program design, implementation and M & E through culturally appropriate, gender sensitive and effective participation (P6)
N.A. (Additional)		• Establish effective resolution of grievances and disputes • Impartial, accessible and fair mechanisms for grievance, conflict resolution and redress must be established (Guideline on stakeholder engagement).	• Effective resolution of grievances and disputes relating to the design, implementation and evaluation of the REDD+ program
Enhance social benefits	• Promote sustainable livelihoods and poverty reduction (P3)	• Realize the potential of forests to reduce poverty in a sustainable	• Provide positive impacts on the long-term livelihood security and well-being of Indigenous Peoples and local

	• Protect and enhance economic and social well-being of relevant stakeholders with special attention to the most vulnerable and marginalized groups (P3) • Ensure equitable, non-discriminatory and transparent benefit sharing among relevant stakeholders with special attention to the most vulnerable and marginalized groups (P3)	manner, and integrate forest effectively into sustainable economic development (OP 4.36)	communities with special attention to women and the most marginalized/vulnerable groups (P3) • Transparent., participatory, effective and efficient mechanisms are established for equitable sharing of benefits of the REDD+ program among and within relevant right holders and stakeholder groups (P2)
N.A. (Additional)		• Identify, avoid and mitigate negative impacts on forest health and quality including forest conversion and degradation (OP 4.01, 4.04, 4.36)	• Identify, avoid and mitigate negative impacts on biodiversity and ecosystem services (P5)
Conservation of natural forests and biodiversity Enhancement of environmental benefits (e.g. biodiversity and ecosystem services)	• Maintain and enhance multiple functions of forest including conservation of biodiversity and provision of ecosystem services (P6) • Ensure that land-use planning for REDD+ explicitly takes account of potential synergies and trade-offs between the multiple functions of forest and the benefits they provide, respecting local and other stakeholders' values (P6) • Ensure that planted and natural forests are managed to maintain and enhance ecosystem services and biodiversity important in both local and national contexts	• Preservation of areas with high biodiversity value and promotion of the protection of ecosystem services (OP 4.01, 4.04, 4.36) • Protect the vital local and global environmental services and values of forests (OP 4.36) • Enhance positive impacts (OP 4.01)	• Maintain and enhance biodiversity and ecosystem services (P5) • Enhance positive impacts (P5)
Not to be used for conversion of natural forests	• Avoid conversion of natural forest to planted forest, unless as a part of forest restoration, and make reducing conversion of forest to other land uses a REDD+ priority (P5) • Avoid or minimise degradation of natural forest by REDD activities and reduce degradation due to other causes (P5)		• Avoid conversion or degradation of natural forests or other areas that are important for maintaining and enhancing biodiversity and ecosystem services (P5)
Address the risks of reversals	• Address the risk of reversals of REDD+ achievements (P4)		
Reduce displacement of emissions	• Avoid or minimise indirect land-use change impacts of REDD+ activities on forest carbon stocks, biodiversity and other ecosystem services (P5) • Avoid or minimise adverse impacts on carbon stocks, other ecosystem services and biodiversity of non-forest ecosystems resulting directly or indirectly from REDD+ activities (P7)		

Annex XII. Development of Safeguards Information System in Cambodia

Table 1: Cambodia's Clarification of Cancun Safeguards

Safeguards	Cambodia's clarification
A	***The REDD+ Strategy is designed in compliance with the objectives of national forestry policies, considering jurisdictional arrangements, and consistent with provisions of the relevant treaties and international conventions to which Cambodia is a ratified party*** Core elements of Cambodia's clarification of safeguard A The National REDD+ strategy is consistent with the objectives of relevant national forest policies. The National REDD+ strategy is consistent with relevant and applicable international conventions and agreements.
B	***The rights of access to information, accountability, justice, gender equality, land tenure and fair distribution of benefits will be clarified, respected and promoted in the scope of the application of the National REDD+ Strategy.*** Core elements of Cambodia's clarification of safeguard B Right to access information is promoted in the context of the implementation of the REDD+ strategy. Accountability is guaranteed in the context of the implementation of the REDD+ strategy. Right to access justice is recognized and protected in the context of the implementation of the REDD+ strategy. User rights over forest land (particularly of indigenous people and women) are recognized and protected in the context of the implementation of the REDD+ strategy. Gender equality is promoted and ensured in the context of the implementation of the REDD+ strategy. Fair distribution of benefits is recognized and promoted in the context of the implementation of the REDD+ strategy.
C	***The REDD+ Strategy will be implemented in accordance to the rights of recognition of, and respect for the rights of original ethnic minorities, indigenous peoples and local communities; including the rights to non-discrimination, traditional knowledge and culture, self-determination, benefit sharing and collective tenure rights.*** Core elements of Cambodia's clarification of safeguard C The rights of original ethnic minorities, indigenous peoples and local communities are promoted and protected in the context of the application of the REDD+ strategy. Traditional knowledge is recognized and protected in the context of the application of the REDD+ strategy.
D	***The right to participate, in an effective manner including Free Prior Informed Consent for relevant original ethnic minorities, indigenous peoples and local communities will be recognized and promoted under the implementation of the National REDD+ Strategy.*** Core elements of Cambodia's clarification of safeguard D Relevant original ethnic minorities, indigenous peoples and local communities have the right to participate in the implementation of the Policies and Measures

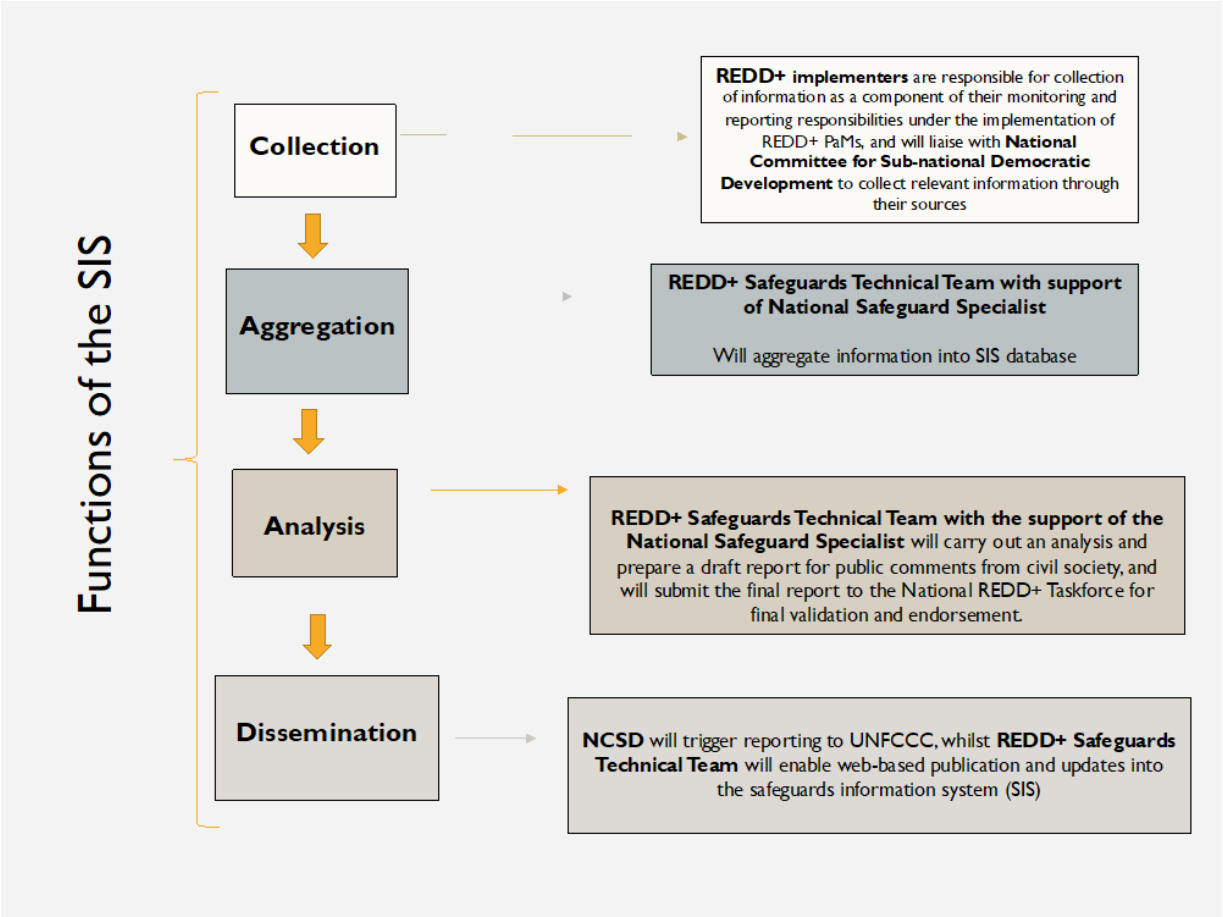
	(PaMs). Right to a Free, Prior and Informed Consent is recognized and protected in accordance with the relevant legal obligations.
E	***The National REDD+ Strategy will be implemented to promote the conservation of natural forests and biodiversity, the enhancement of social and environmental benefits, and will not result in the conversion of natural forests.*** Core elements of Cambodia's clarification of safeguard E The conservation of natural forests and biological diversity is recognized and protected in the context of the implementation of the REDD+ strategy. The REDD+ strategy will not incentivize the conversion of natural forests. Enhancement of ecological, biological, climatic, cultural and natural heritage and socio-cultural, benefits
F, G	***Risks of reversals and displacement of emissions of the REDD+ PaMs will be addressed through the MRV and national forest monitoring system.*** Core elements of Cambodia's clarification of safeguard F & G Addressing risks of reversals is required by the REDD+ strategy. Addressing risks displacement of emissions is required by the REDD+ strategy

Table 2: Summary Table of NCDD Databases

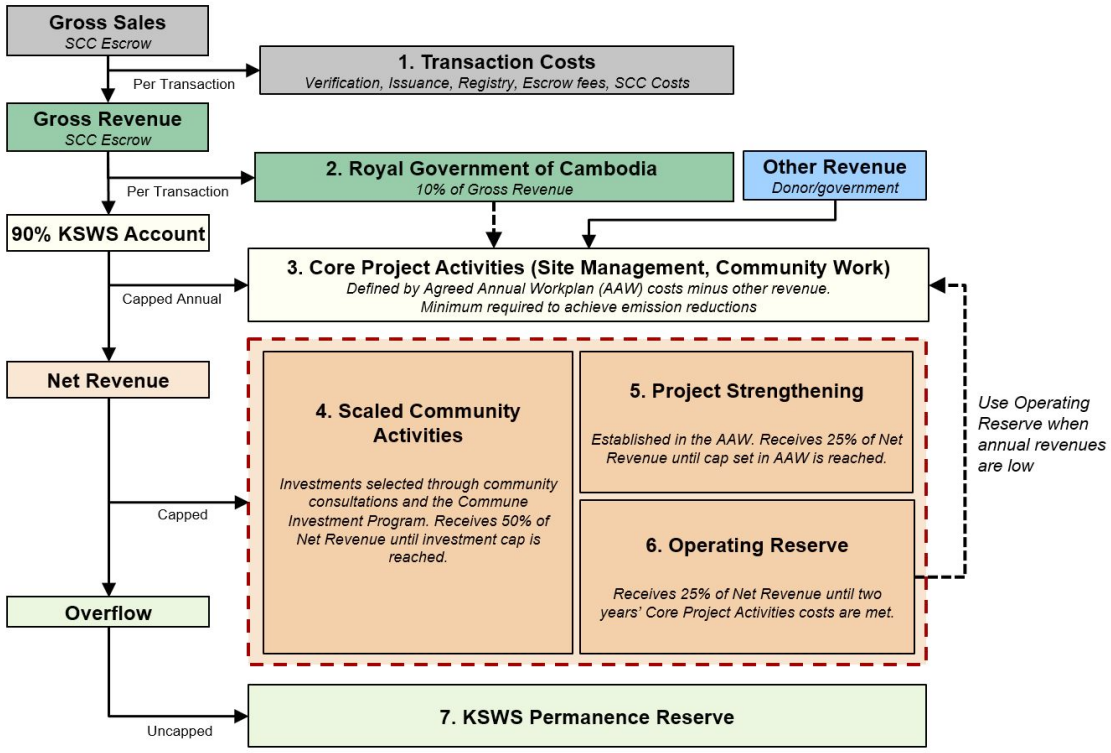
Name of Database	Date of Operation	Frequency of Data Collection	Types of Information Collected	Jurisdictional Specifics
Commune Database (CDB)	2002	Annually, with training, collection and compilation occurring from November to February	Includes over 100 questions, including on ethnicity, age, gender, vulnerable groups, social information, economic level and employment status, education, health, administrative information, and so on.	Data is collected and compiled at the village, commune and district level, with the focal points being the village chief, the commune clerk, and the district officer responsible for administration. Once compiled and certified, the information is forwarded to the provincial Department of Planning.
Sub-National Project Database (SPD)	2002; online since 2009	Annual in terms of data collection, development of priorities, conduct of district integration workshop;	Selected information (project location, budget, beneficiaries, etc.) on all proposed government projects occurring at the sub-national	Overseen by provincial Department of Planning

		tracking and monitoring on a roughly quarterly basis.	level, commune by commune, that will NOT be funded through the Commune/Sangkat Fund.	
Project Implementation Database (PID)	2003; online since 2009	Annual cycle, with more frequent tracking and monitoring	Detailed information on all projects funded by the C/S fund, commune by commune. Information tracked includes bidding procedures and a range of safeguards relating to land, IP, environment, etc. Selected communes are also on a "watchlist" regarding particular safeguards.	Overseen by Planning and Investment Division of provincial administration with additional oversight by NCDD Safeguard Advisor and NCDD Approval Officer
M&E Monitoring Tool	2015, currently operational in 121 districts and khans	Frequent and ongoing	District level performance monitoring (e.g. spending, staffing, etc.)	Fully administered by District administrations, with limited NCDD oversight
M&E Database System	2015; online	Annually	Detailed monitoring, limited to health, economic, and education sectors	Information is collected at the commune level, then compiled by the district administrations. Tracked information is derived from ministries

Figure 1: Institutional arrangements of SIS in Cambodia



Annex XIII. Revenue distribution model for REDD+ in Seima



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xxxii. For further information, visit: http://www.climate-standards.org/

xxxiii. Ibid, paragraph 5(b) see also UN-REDD brief on summaries of information for further analysis

xxxiv. The other two being: 1) ensuring consistency of the REDD+ interventions with the Cancun safeguards throughout the implementation of REDD+, and 2) the provision of a summary of information demonstrating how the safeguards have been addressed and respected to the UNFCCC.

xxxv. Decision 2/CP. 17, paragraph 64

xxxvi. All of the following information has been obtained through discussions with NCDD personnel, supplemented by research of the NCDD website.

xxxvii. UNFCCC Decision 12/CP.17 paragraph 2(b)

xxxviii. Data on these two pilot projects were collected from October 15 to December 10, 2013 through: 1. archival review of documents from Pact and Wildlife Conservation Society for Oddar Meanchey and Seima Protected Forest, respectively; 2. focus group discussions with 13 community representatives in Oddar Meanchey and with 20 community representatives in Seima; and 3. interviews with 5 community representatives in both Oddar Meanchey and Seima.

xxxix. Note that PLRs are largely thought of as national state legislation, but could also encompass subnational ordinance in large federal countries where each state has some autonomy to legislate for its jurisdiction. There can be non-state PLRs too; the private sector typically operates by individual corporate social responsibility policies, as well as collective industry best-practice standards. Indigenous peoples' and local communities cultural norms could also contribute to addressing and respecting safeguards, in addition to PLRs codified by government.

xl. The UNFCCC calls for a national-level SIS, but the NS/AP may be operationalized through a variety of different modalities of differing scales, e.g. national-level policy intervention;

subnational land-use planning; registry of site-based projects; hybrid of these and other modalities; etc. Information for the SIS may be generated/available at a subnational level; aggregation of information from different geographic scales will be an important consideration when determining the information content and structure of the SIS.

xli. There is no UNFCCC requirement to verify or validate safeguards information.

xlii. Particularly as these functions, compared to others, lend themselves to greater levels of civil society or local community participation (resulting in greater stakeholder trust) in the SIS's operations.

xliii. Information dissemination is the only SIS function required under the UNFCCC. All other potential SIS functions, with the exception of quality control and assurance, are implied: information cannot be disseminated if it has not first been collected, managed, analysed and interpreted.

xliv. Free, Prior and Informed Consent (FPIC) is the collective right of indigenous peoples to participate in decision making and to give or withhold their consent to activities affecting their lands, territories and resources or rights in general. Consent must be freely given, obtained prior to implementation of activities and be founded upon an understanding of the full range of issues implicated by the activity or decision in question; hence the formulation: free, prior and informed consent

xlv. FCPF does not do not mandate "consent" in FPIC but will support adherence to FPIC if the country has ratified ILO 169, adopted national legislation on FPIC of if a development partner applies the principle.