



VALIDATION REPORT

REDUCED EMISSIONS FROM DEFORESTATION AND DEGRADATION IN COMMUNITY FORESTS

ODDAR MEANCHEY, CAMBODIA

REPORT No. 600500753-20

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TÜV SÜD Industrie Service GmbH

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Summary:

The proposed VCS project activity "Reduced Emissions from Deforestation in Community Forests Oddar Meanchey, Cambodia" is an Agriculture, Forestry and Other Land Use (AFOLU) project under the "Avoiding Unplanned Mosaic Deforestation and Degradation" (AUMDD) typology of the Reduced Emissions from Deforestation and Degradation (REDD) category. The project foresees to reduce emissions from deforestation and degradation in an area of 64,318 hectares located in the northwest Cambodian province of Oddar Meanchey. The methodology applied is the VCS approved methodology VM0006 "Methodology for Carbon Accounting in Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation".

The method used for validation included an onsite visit and iteration of information exchange between TÜV SÜD and the Project Proponent, in which a number of clarification and corrective actions were requested. At the time of submission of this report, no pending issues were standing, being all the non-conformities sorted out by the Project Proponent.

The estimated amount of VCUs generated by the project are 6,143,767 VCUs after applying a 19.75% buffer discount over a 30 year crediting period.

The reviews of the project documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant requirements of the VCS version 3.2.

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Abbreviations

AR-AM	Approved Methodology for Afforestation / Reforestation
ARR	Afforestation, Reforestation, Revegetation
AFOLU	Agriculture, Forestry and Other Land Use
ANR	Assisted Natural Regeneration
CAR	Corrective Action Request
CB	TÜV SÜD Certification Body "climate and energy"
CDM	Clean Development Mechanism
CR	Clarification Request
DOE	Designated Operational Entity
EB	Executive Board at the UNFCCC
EF	Emission Factor
EIA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Green House Gas(es)
GIS	Geographic Information System
GPG	Good Practice Guidance
GPS	Global Positioning System
GRL	Green Resources Limited
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
KP	Kyoto Protocol
LULUCF	Land-Use, Land-Use Change and Forestry
MP	Monitoring Plan
NGO	Non Governmental Organization
NAI	Net Annual Increment
PRA	Participatory Rural Appraisal
PD	Project Document
PP	Project Participant
REDD	Reducing Emissions from Deforestation and Degradation
SOP	Standard Operating Procedure
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit
VVB	Validation, Verification Body

1 INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by a Third Party (Validation/Verification Body, VVB) of a proposed project activity against all defined criteria set for the registration under the Verified Carbon Standard (VCS). Validation is part of the VCS project cycle and will finally result in a conclusion by the executing VVB whether a project activity is valid.

The project activity discussed by this validation report was submitted under the project title: “Reduced Emissions from Deforestation in Community Forests Oddar Meanchey, Cambodia”.

1.2 Scope and Criteria

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Validation Verification Body (VVB). The verification is based on the submitted monitoring report, the validated project design documents including its monitoring plan and validation report, the applied monitoring methodology, relevant decisions, clarifications and guidance from VCS and any other information and references relevant to the project activity’s resulting emission reductions. These documents are reviewed against the requirements of the VCS, including:

- VCS Program Guide version 3.2
- VCS Standard version 3.2 and other relevant requirements defined by VCSA.
- AFOLU Requirements version 3.2

TÜV SÜD has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The validation considers both quantitative and qualitative information on emission reductions.

The validation is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

Based on this initial PD version submitted to TÜV SÜD, a document review is conducted to check the applicability and completeness of the information. At the end of the validation process, the final PD forms the basis for the final evaluation as presented in this report.

1.3 Level of assurance

The verification report expresses a conclusion with a reasonable level of assurance about whether the reported net anthropogenic GHG removals data is free from material misstatement. TÜV SÜD applied a materiality threshold of 5% with respect to omission or misstatements concerning reported quantities as per VCS standard 5.3.1 4).

The level of assurance of this report is defined as limited. Furthermore, TÜV SÜD would like to point out that based on the process and procedures conducted as part of this verification; there was no evidence that indicates that this GHG assertion

- is not materially correct and is not a fair representation of the GHG data and information, and
- was not prepared in accordance with the related VCS 3.2 Standard on GHG quantification, monitoring and reporting.

1.4 Summary Description of the Project

The following description of the project as per PD was verified during the on-site audit:

Project activity:	Reduced Emissions from Deforestation in Community Forests Oddar Meanchey, Cambodia
Project Proponent:	Forestry Administration of the Royal Government of Cambodia
Other entities involved:	Pact; Children's Development Association, Cambodia; The Monks Community Forestry, Oddar Meanchey, Cambodia; The Community Forestry Federation of Oddar Meanchey Province, Cambodia; Community Forestry International, USA; Terra Global Capital, USA; William J. Clinton Foundation - Clinton Climate Initiative, USA; Technical Working Group on Forestry and the Environment, Cambodia; SNR Denton
Location of the project:	Oddar Meanchey, Cambodia (GIS shapefiles submitted)
Starting date of the crediting period:	28-Feb-2008

The project foresees to reduce emissions from deforestation and degradation in an area of 64,318 hectares located in the northwest Cambodian province of Oddar Meanchey. The methodology applied is the VCS approved methodology VM0006 "Methodology for Carbon Accounting in Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation".

The project area consists of 13 discrete parcels scattered across the central section of Oddar Meanchey. In each of these parcels, individual Community Forest Sites are located, ranging in size from 383 hectares to 17,848 hectares, adding up to a total area of 63,831 hectares. The project boundary is comprised of 56,050 hectares of forested area within these Community Forest Sites. The drivers of deforestation include agricultural expansion, settlement expansion, forest fire, illegal logging, timber harvesting, and fuelwood collection. Project actions will include supporting Community Forestry patrols and fire control, community-based water resource development projects, strengthening and clarifying land-tenure, sustainable farming systems, agricultural intensification, fuel efficient stoves, and livelihood activities.

The estimated amounts of VCUs generated by the project are 6,143,767 VCUs over a 30 year crediting period after applying a 19.75% buffer discount.

2 VALIDATION PROCESS

2.1 Method and Criteria

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The work starts with the appointment of the team covering the technical scope(s), sectoral scope(s) and relevant host country experience for evaluating the VCS project activity. Once the initial PD is received, members of the team carry out the desk review, follow-up actions, onsite visit, resolution of issues identified and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the Certification Body “Climate and Energy” of TÜV SÜD, before final submission of the validation report.

In order to ensure transparency, assumptions are clear and explicitly stated; the background material is clearly referenced. TÜV SÜD developed methodology-specific checklists and protocols customised for the project. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team, and the results from validating the identified criteria.

The validation protocol serves the following purposes:

- To organize the details and provision of clarifications on the requirements of which a VCS project is expected to meet
- To elucidate how a particular requirement has been validated as well as to document the results of the validation and any adjustments made to the project design document.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

Validation Protocol Table 1: Conformity of Project activity and PD

VCS / Methodological Requirements	Reference	Comments	Draft Conclusion	Final Conclusion
<i>The checklist is organised in sections following the arrangement of the applied PD version. Each section is then sub-divided. The lowest level constitutes a checklist question / criterion.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PD.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any Request has to be substantiated within this column</i>	<i>Conclusions are presented based on the assessment of the first PD version. This is either acceptable based on evidence provided (✓), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification Request (CR) is used when the validation team identified a need for further clarification. Forward Action Request (FAR) to highlight issues related to project implementation that requires review during the first verification.</i>	<i>Conclusions are presented in the same manner based on the assessment of the final PD version and further documents including assumptions presented in the documentation.</i>

Validation Protocol Table 2: Summary of Requests and Responses of Project Developer

Clarifications and corrective action requests	Ref. to PD	Summary of project owner response	Validation team conclusion
<i>If the conclusions from table 1 are a Corrective Action, a Clarification or a Forward action Request, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 1 where the issue is explained.</i>	<i>The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the discussion on and revision to project documentation together with the validation team's responses and final conclusions. The conclusions should be reflected in Table 1, under "Final PD".</i>

In case of a denial of the project activity more detailed information on this decision will be presented in Table 4. Table 4 is also used for listing of any Forward Action Request.

Validation Protocol Table 3: Unresolved Corrective Action, Clarification Requests, Forward Action Requests

Clarifications Request, Corrective Action Request, Forward Action Request	Id. of CAR / CR / FAR	Explanation of the Conclusion for Denial, or Background of Forward Action Request
<i>Referenced request if final conclusions from table 2 resulted in a denial.</i>	<i>Identifier of the Request.</i>	<i>Detailed explanation of why the project is considered non-compliant with a criterion and a clear reference to the criterion</i>

The completed validation protocol is enclosed in Annex 1 to this report.

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Validator (VAL);
- Validator Trainee (T);
- Technical Experts (TE).

It is required that the sectoral scope(s) and the technical area(s) linked to the methodology and project have to be covered by the assessment team. For this particular project the assessment team members are presented in the table below. The respective appointment certificates are attached to this report as annex 3.

Assessment Team:

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect	Host country experience
Sebastian Hetsch	ATL	☒	☒	☒	☒
Juan Chang	VAL	☒	☒	☒	☒

Technical Reviewer:

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect
Karin Wagner	TR			☒
Martin Opitz	TE	☒	☒	

2.2 Document Review

A first version of the PD for VCS validation was submitted by the PP to TÜV SÜD in August 2011. This PD version and additional background documents related to the project design and baseline were reviewed to verify the correctness, credibility and interpretation of the presented information, furthermore a cross-check between information provided and information from other sources was carried out as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as Annex 2 to this report.

During the validation process the team made reference to available information related to similar projects or technologies as the VCS project activity. The documentation was also reviewed against the approved methodology to confirm the appropriateness of formulae and correctness of calculations.

2.3 Interviews

From 16 - 22 August 2011 TÜV SÜD performed interviews with project stakeholders and a physical site inspection to confirm relevant information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context:

Name	Organisation
Eric Bergthold	Country Director PACT
Stuart Raetz	REDD officer PACT
Steven De Gryze	TGC Managing Director
Amanda Bradley	PACT Program Director
Omalis Keo	DD Forestry Administration
Long Ratanakoma	DD Forest Dept. Forest Administration
Maya Sepehri	PhD Research

Donal Yeang	Carbon Program Officer
Chou Chandarith	Forestry Administration OMC
Taing chau Sema	Forestry Administration OMC
Sim Sohn	Forestry Administration OMC
Blung Phath	Forestry Administration OMC
Bun Salouth	Program Officer CDA
Chboernung Rachana	P.A CDA
Sa Thlai	CFN
Yem Sambath	Forestry Administration OMC
Rith Bo	P.M CDA
Net Channa	Junior Database & GIS PACT
Hae Teur	Community Forestry Member
Sour Pisey	Community Forestry Member
Mean Hom	Community Forestry Member
Sari Von	Community Forestry Member
Lat Iveam	Community Forestry Member
Ehhearn Chantrea	Community Forestry Member
Sat Hourt	Community Forestry Member
Rin Chanda	REDD project assistant
Loek Socheata	Forestry Administration

In addition, farmers and community members have been interviewed in the course of the onsite visit.

2.4 Site Inspections

From 16 - 22 August 2011 TÜV SÜD performed a physical site inspection to

- confirm relevant information and to resolve issues identified in the first document review; and
- review the calculations and assumptions used to obtain the GHG data and ER; and
- identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

A total of 22 randomly selected sample plots have been assessed in the course of the onsite visit. The audit team documented the results from the onsite visit in respective field data sheets

2.5 Resolution of Any Material Discrepancy

The objective of this phase of the validation process is to resolve any outstanding issues which require clarification for TÜV SÜD's conclusion of the achieved GHG emission reduction. The findings raised as Forward Action Requests (FARs) (if any) indicated in previous reports (validation/verification) were discussed during this phase and, issues raised in the FARs were resolved, during communications between the PP and TÜV SÜD.

Concerns raised in the desk review, the on-site audit assessments and the follow up interviews and the responses provided for the raised concerns are documented in Annex 1 (validation protocol) to guarantee the transparency of the verification process.

A Corrective Action Request is raised where TÜV SÜD identifies:

- non-conformities in monitoring and/or reporting with the monitoring plan and/or methodology;
- that the evidence provided is not sufficient to prove conformity;
- mistakes in assumptions, data or calculations that impair the ER;
- FARs stated during validation that are not solved until the on-site visit.

A Clarification Request is raised where TÜV SÜD does not have enough information or the information is not clear in order to confirm a statement or data.

A Forward Action Request is raised where TÜV SÜD identifies that monitoring and/or reporting require special attention or adjustments for the next verification period.

Information or clarifications provided as a response to a CAR, CL or FAR could also lead to a new request.

The final PD version 4.2 that was submitted on 13 August 2012 served as the basis for the final assessment presented herewith.

3 VALIDATION FINDINGS

3.1 Project Design

Project scope, type, technologies and measures implemented, and eligibility of the project

The proposed VCS project activity is an Agriculture, Forestry and Other Land Use (AFOLU) project under the “Avoiding Unplanned Mosaic Deforestation and Degradation” (AUMDD) typology of the Reduced Emissions from Deforestation and Degradation (REDD) category. It was confirmed by the audit team that the technology used is in line with typical forestry techniques and that they are appropriate for the proposed project activity.

Project Proponents

Project Proponent as per PD is Forestry Administration of the Royal Government of Cambodia. Contact details are provided in the PD. Further entities and organizations related to the project are described in section 1.4 of the PD.

Project Start Date,

The starting date of this project is 28 February 2008. This is the date on which the original agreement between the Technical Working Group (TWG Secretariat) and Community Forestry International (CFI) was signed, which committed the parties to the implementation of the project (IRL 33)

Project Crediting Period

The crediting period is fixed at 30 years (IRL 2).

Project scale and estimated GHG emission reductions or removals

The overall project is expected to reduce -8,187,767 (IRL 6) during the 30 year crediting period, therefore the scale is less than or equal to 1,000,000 tCO₂e per year qualifying as a project according to the VCS.

Project activities

The following activities are foreseen to be implemented to achieve emissions reductions from deforestation and degradation: Reinforcing land tenure, land use plans, forest protection, Assisted Natural Regeneration, Fuel-efficient stoves, livestock protection from mosquitoes, agricultural intensification, water resource development projects, non-timber forest products development and fire prevention (IRL 3, 4). Each of these activities were discussed onsite and corresponding evidence was provided to the audit team. The audit team concludes that these activities can realistically promote reduction of emissions from deforestation and degradation.

Project location

The project is located in the northwest Cambodian province of Oddar Meanchey. The project boundary consists of 13 discrete parcels scattered across the central section of Oddar Meanchey (IRL 5). The exact geographic location was provided by the PP through digital boundary information (shape files for Geographic Information Systems – GIS, IRL 5). The audit team reviewed the boundary files provided by the PP and cross checked it with own measurement of geo-coordinates during the onsite visit and confirms that the data is correct.

Project compliance with applicable laws, statutes and other regulatory frameworks

Applicable laws, statutes and regulatory framework are described in the PD and respective documents were reviewed by the audit team (IRL 22, 31, 112, 113, 122, 124). The audit team confirms that no non-compliance with the respective legal framework was found during the validation. The assessment of the legal framework is based on the documents cited also in the PD, as well as interviews and observation during the onsite visit.

Ownership and other programs

Proof of title

The land ownership of the project area was sustained with signed Community Forestry Agreements with the government, the legal land owner, which ensures the explicit and uncontested legal tenure to the thirteen local communities involved as well as the land management rights for the communities for 15 years with a provision for renewal (IRL 20-26, 31, 112, 125). The Forest Administration (FA) is responsible for distributing the benefits from the sale of carbon credits.

TÜV SÜD confirms the ownership structure as described in the PD, based on review of respective legal documents, as well as interviews carried out during the onsite visit. The contracts with the communities and the FA regarding carbon rights were also reviewed during the onsite visit and members from the community were interviewed regarding this subject during the field visit (IRL 1).

Emission trading Programs and other binding limits

The project is not attending in any emission trading program and other binding limits as verified through interviews with project proponents during the onsite visit and internet research of carbon market databases. This also applies for new instances. This is verified through interviews with project proponents during the onsite visit and internet research of carbon market databases.

Participation on other GHG programs

The project is not participating in any other GHG program as verified through interviews with project proponents during the onsite visit and internet research of carbon market databases.

Other forms of environmental credits sought or received

The project does not apply to any other forms of environmental credits than the Voluntary Carbon Units (VCU's) under the REDD category of the VCS AFOLU program as verified through interviews with project proponents during the onsite visit and internet research of carbon market databases..

Rejection by other GHG programs

The project was not rejected from other GHG programmes, as verified through interviews with project proponents during the onsite visit and internet research of carbon market databases.

Additional information relevant to the project**Eligibility criteria for grouped projects**

N/A.

Leakage management for AFOLU projects

The leakage mitigation activities include: Fuel efficient stoves, Livestock protection from insects, Agricultural intensification, Water resource development projects, Non-Timber Forest Product (NTFP) development activities (IRL 12, 13, 17, 18). The commitment of the communities involved in the implementation of the leakage mitigation activities was analyzed in the household surveys (IRL 19).

Commercially sensitive information

A list of commercially sensitive information excluded from the public version of the project is included to the PD.

Any further information

N/A

3.2 Application of Methodology

3.2.1 Title and Reference

In regard to the baseline methodology the approach as defined by the VCS approved methodology “Carbon Accounting Methodology for Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation v.1.0” was applied. The section 3.2.2 below provides further detail on the correct application and justification of the methodology.

3.2.2 Applicability

Compliance with each applicability condition as listed in the chosen VCS baseline and monitoring methodology “Carbon Accounting Methodology for Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation” was demonstrated. An assessment was carried out for each applicability criterion and included, among others, the compliance check of the local project setting with the applicability conditions in regard to baseline setting and eligible project measures. This assessment also included the review of secondary sources, which sustained that applicability conditions are complied with. Among others, the following documents confirmed the applicability conditions:

- GIS files of the project area (IRL 5)
- ATLAS of Cambodia (sponsored by DANIDA) (IRL 115)
- Classified LANDSAT images (IRL 120)
- Report on Participatory Rural Appraisal (PRA), Oddar Meanchey Community Forestry REDD Project (IRL 19)

The methodology specific protocol, included to the Annex 1, documents the assessment process, which also includes the steps taken. The results on the compliance check, as well as the relevant evidence, are detailed in Annex 1. TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the project activity.

3.2.3 Project Boundary

The project boundary, the leakage area and the reference region was assessed in the context of physical site inspection and interviews and based on the secondary evidence received on the design of the project (IRL 1). The boundary as defined in the field was found to be consistent with the indications in the PD. The boundary delineation and area size is based on coordinates measured by the PP with GPS. Respective data is saved in digital GIS files. The boundaries as presented in the GIS files (IRL 5) and the PD are adequately documented and the area size correctly determined.

The selected carbon pools for the project scenario are above-ground, below-ground biomass, dead wood and wood products. Credible justification on the selection of the carbon pools is included to the PD and this was verified to be in line with the methodology requirements. Accordingly, GHG sources, sinks and reservoirs for the baseline scenario and project scenario are taken into account by the proposed project as required by the methodology.

3.2.4 Baseline Scenario

The PD identifies the baseline scenario as continuation of pre-project land use activities, which is the historic deforestation trends observed in the region. A regional baseline was developed in a reference region which includes the project area. The reference region was defined based on (1) forest laws and policies, (2) land use history and dynamics, (3) ecological conditions, and (4) social conditions (IRL 31, 112, 125). In order to determine the size of the reference region a 25km buffer was defined based on the bounds of a Landsat dataset available. Protected areas, Thailand and Economic Land Concessions were excluded from the reference region due to difference of applicable laws, social conditions and land use history. The reference region is approximately 10 times larger than the project area, thus complies with the minimum requirement as indicated in the methodology (IRL 5, 115, 120).

The information presented in the PD was validated by a document review, the on-site visit of the project area, and finally by cross-checking the information presented with similar relevant projects and literature. The sources referenced in the PD were quoted correctly. The information was verified against credible sources, such as:

- The State of the World's Forests. Country Deforestation Data 2003. FAO. (IRL 64)
- Land eligibility assessment (IRL 35)
- Social Appraisal Report- Oddar Meanchey Province (IRL 19)

Documents cited above, field visits and interviews sustained the chosen baseline approach as *Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary*. In the case of this project, the historic land use of the project area prior to project start would also be the likely future land use in absence of the project.

TÜV SÜD confirms that no reasonable alternative baseline scenario was excluded in the analysis of baseline scenarios. Based on the validated assumptions, TÜV SÜD considers that the identified baseline scenario is reasonable. Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant VCS requirements, including relevant national and sectoral policies and circumstances, were identified correctly. TÜV SÜD confirms the following statements:

1. All the assumptions and data used by the project participants are listed in the PD, including their references and sources;
2. All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PD;
3. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;
4. Relevant national and/or sectoral policies and circumstances are considered and listed in the PD;
5. The approved baseline methodology was correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario reasonably represents what would occur in the absence of the proposed VCS project activity.

3.2.5 Additionality

The additionality of the project was presented in the PD following the "VCS VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities v.3.0" using the barrier analysis. It has been demonstrated that the GHG

removals due to the project activity are additional to any that would have occurred in the absence of the project activity.

The approach used in the PD was assessed initially through a document review, where following relevant document were reviewed:

- ATLAS of Cambodia sponsored by DANIDA (IRL 115)
- Food and Agriculture Organization (FAO) of the United Nations. 2005. Forestry Department. Global Forest Resource Assessment 2005. (IRL 92)
- Assessment of Community Forestry Sites and Migration Patterns in the Oddar Meanchey Province, Cambodia". (CFI: Phnom Penh) 2008. (IRL 69)

Furthermore, the additionality analysis was discussed onsite principally with the project team. Interviews on this topic were also carried out with stakeholders during the field visit. The data, rationale, assumptions, justifications and documentation provided were checked using local knowledge and sectoral and financial expertise. Based on the aforementioned approach, TÜV SÜD confirms that the documentation provided is appropriate for this project. Further analysis of the additionality is summarized in the paragraphs below.

Identifications of alternative land use scenarios

Relevant alternatives (land use scenario) identified in the context of the additionality test are:

- a) Continuation of pre-project land use scenarios
- b) Natural regeneration without carbon finance
- c) The proposed project activity without carbon finance

TÜV SÜD determined that no reasonable alternative land use scenario was excluded. Based on the validated assumptions TÜV SÜD considers that the identified baseline scenarios are reasonable.

The audit team confirms that all relevant VCS requirements, including relevant national and sectoral policies and circumstances (IRL 31, 112, 125), were identified correctly and taken into account in the definition of the baseline scenarios. The list of identified alternatives is considered to be complete and in line with relevant national and sectoral policies and circumstances.

Barrier analysis

The project participants used the barrier analysis in order to demonstrate the additionality of the project. The main barrier preventing the implementation of the project without carbon credits is the investment barrier. Additional barriers include lack of law enforcement, shifting agriculture, customs relating to land use, unclear or informal land tenure, demographic pressure on the land.

Pervious activities were implemented through grants from donor funding sources with no commercial purposes (IRL 19, 47, 48). The audit team reviewed these evidences and considers them adequate to sustain the additionality as requested by VCS and the applied methodology. The barrier presented in the PD can be considered real. The barrier prevents the project activity from being implemented while it would not prevent at least the baseline of the project. This was confirmed based on the documentation

review, interviews and local and sectoral expertise of the assessment team. The latter was also confirmed by the interviewed stakeholders during the onsite visit.

Common practice analysis

The region for the common practice analysis was defined as the geographical area of Cambodia. The assessment team reviewed the approach presented in the PD and can confirm that relevant parameters such as location, ecological conditions, economic situation, and development were taken into account in order to define the region (IRL 64, 70, 113, 122). The chosen region has unique characteristics in regard to forest structure, population structure and ethnic minorities. Therefore, the presented approach can be considered appropriate for the common practice analysis.

A review of the VCS and CCB Standards databases of registered projects indicates that there are no similar activities in the region. The project activities are in most cases similar to the ones conducted in other CF areas; however the lack of funding to conduct such activities is the major barrier for its implementation (IRL 47, 48). Therefore, considering the specific project design, it can be confirmed that the proposed VCS activity is not a common practice in the defined region.

3.2.6 Quantification of GHG Emission Reductions and Removals

Formulas and Factors Used

TÜV SÜD assessed the calculations of baseline stocks and removals, project emissions, leakage and the expected net anthropogenic GHG removals by sinks. Corresponding calculations were carried out based on calculation spread sheets (IRL 6, 9, 85, 86). Correctness of calculations can be confirmed as they were replicated by the audit team using the information provided. The values and estimates presented in the PD are considered reasonable based on the documentation reviewed, further references and the result of the interviews during the onsite visit.

Based on the information reviewed it can also be confirmed that the sources used are correctly quoted and interpreted in the PD. All assumptions and data indicated in the PD and all relevant sources were checked and confirmed. Detailed information on the verification of parameters used in the equations is presented in Annex 1.

In essence, the methodology was correctly applied following the requirements. All values in the PD are considered reasonable in the context of the proposed VCS project activity. Data sources are quoted correctly. Hence, the calculation of baseline stocks and removals, project emissions, leakage and the expected net anthropogenic GHG removals by sinks are considered correct.

Baseline stocks and GHG removals by sinks

The baseline carbon stock and carbon stock changes are determined taking into account the baseline scenario previously described. The quantification of the baseline stock and stock change was based on a Land Use Land Use Change (LULC) Classification and Stratification in the Reference Region. As stipulated in the methodology, the six IPCC LULC classes are included. The final stratification of the

forest land class identified Deciduous and Mixed (DCD) forests and Evergreen Forest (IRL 95, 96, 97). Carbon stock densities were found to be significantly higher in the evergreen forest compared to the deciduous and mixed forest. The LULC change transitions between two satellite images were analyzed using LULC change category matrices (IRL 120). For the ANR areas, the biomass stock and growth belowground was estimated using a value of 0.29 for root to shoot ratio estimated following procedures of published literature (IRL 86). Using a baseline regeneration rate of 2 Mg DM ha⁻¹ yr⁻¹ (IPCC GPG LULUCF Table 3A 1.6) with a carbon fraction of 0.5 and a root-to-shoot ratio of 0.2, the net annual increment under baseline conditions is 1.29 Mg C ha⁻¹ yr⁻¹.

In summary the calculation of the baseline stocks and GHG removals are in compliance with the applied methodology and carried out correctly.

Assumptions and estimates for GHG net anthropogenic removals

The estimates on the expected anthropogenic removals which are likely to be achieved by the envisioned revegetation under the project scenario are in compliance with the VCS version 3.2 and the applied VCS methodology.

The assumptions for the relative contribution of each of the drivers of deforestation and a justification of the reliability of these values was provided and sustained with corresponding evidence (IRL 95, 96, 115, 120). The mobility of each deforestation driver, and travel distance of each deforestation agent was defined based on a household survey (IRL 19). The carbon stock densities were obtained from specific field inventory of the different LULUC classes and compared to data from published available literature to confirm the conservativeness of the results (IRL 102, 106). The deforestation rates estimated project correspond to 3.03% loss of forest cover per year based which resulted very close to estimates from an independent third party publication (IRL 114).

The estimation of the GHG removals by sinks in the ANR assumes a growth of 7.8 Mg DM ha⁻¹ yr⁻¹ and 13.5 Mg DM ha⁻¹ yr⁻¹, for the mean and maximum aboveground biomass respectively (based on IPCC GPG LULUCF Table 3A 1.6, value for plantations).

In general, all calculations are in compliance with the applied VCS methodology. The steps of the calculations are fully traceable and adequate for the project conditions. In summary, the calculations for net anthropogenic GHG removals are fully traceable, adequate for the project conditions and considered correct by TÜV SÜD:

- All assumptions and data used by the project participants are listed in the PD, including their references and sources;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PD;
- All values used in the PD are considered reasonable in the context of the proposed VCS project activity;
- The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PD.

Project emissions

The identified sources of emissions from the project are the fire prevention measures and site preparation for ANR areas. Emissions from fire prevention measures are derived from the installation of firebreaks in deciduous and mixed forests. The carbon difference of the firebreak installation was estimated to be equal to the average carbon density of dry deciduous forests which is considered conservative and in line with the methodology requirements. Emissions from site preparation in ANR areas are neglected as the lands are already degraded and no removal of existing trees will take place.

Leakage

The implementation of the leakage prevention activities will reduce the leakage in order to generate the expected benefits in effectively reducing the deforestation in the project area. The proposed activities were found to be credible and realistic for the proposed implementation (IRL 2, 3). Evidence and a justification on the leakage cancellation rates assumed for each of the deforestation drivers was provided and discussed during the onsite visit (IRL 101 – 108). For the determination of the leakage belt, the factors considered were the speed of travelling on different terrain and roads, and the distance communities are willing to transport for timber harvesting and agriculture (IRL 132, 133, 134). A comparison the anticipated deforestation rate with the actual area of forests available in the leakage confirmed that the leakage area is sufficiently large so that enough forest is encompassed for activity shifting of the first 10 years of the project implementation.

Leakage from geographically unconstrained drivers can occur in areas beyond and far away from project area vicinity. Forest clearing for land sale is the only geographically unconstrained driver that is relevant in the project. Other drivers that are geographically unconstrained are large economic land concessions and timber concessions.

Leakage from geographically constrained drivers conservatively assumed leakage cancellation rate of 100% as no project activities will affect the hectares of forest being cleared by large economic land concessions or timber concessions. Leakage from forest clearing for land sale is the only geographically unconstrained driver that is relevant in the project, for which 50% cancellation rate was assumed which was accepted at time of validation for ex-ante estimations and to be revised at time of baseline update.

A major source of emissions identified from the leakage prevention activities was the increase in the use of fertilizer, especially from synthetic sources. These emissions were estimated according to the methodology requirements and discounted from the emissions reductions estimations.

Uncertainties and Risk

The risk assessment was conducted according to the VCS Version 3 Procedural Document “AFOLU Non-Permanence Risk Tool” v 3.0.

Each risk category was calculated based on the VCS guidance and the input provided by the PPs. The information was validated and cross-checked through document and literature review, onsite visits of the project area and interviews conducted. Details of the assessment are provided in table 2 of annex 1.

The overall risk rating according to the applied tool is 19.75 %. TÜV SÜD emphasises that this risk rating is purely based on the tool cited above, according to VCS requirements. The risk rating should not be used for any other purpose than retiring VCUs according to the VCS permanence rules. The risk will be reassessed at time of the first verification and with that prior to any issuance of VCUs. The current buffer is subject to change at verification also in line with further guidance from the VCS on this matter.

3.2.7 Methodology Deviations

There are no deviations from the applied methodology.

3.2.8 Monitoring Plan

The monitoring plan presented in the PD complies with the requirement of the applied methodology. The assessment team checked all parameters presented in the monitoring plan against the requirements of the methodology. For the monitoring of emissions reductions the requirements and parameter list as per methodology were followed. Relevant parameters available at validation are listed in the PD. All relevant parameters that need to be monitored are listed in the PD as required by the methodology.

The monitoring plan was included to the project documentation (IRL 2). Standard Operational Procedures (SOP) are defined for the monitoring activities and follow good practice. The sample design for the monitoring is set and in compliance with the respective tool for the calculation of numbers of sample plots for measurements within typical forestry project activities.

The sampling procedures as defined in the PD were reviewed by the assessment team on paper and through interviews with the relevant personnel; this information together with a physical inspection allows the assessment team to confirm that the proposed monitoring plan is feasible within the project design. TÜV SÜD concludes that the PP is able to implement the monitoring plan to report ex-post GHG net anthropogenic emissions reduction and removals from ANR areas, which can also be verified.

3.3 Environmental Impact

The project aims to protect and restore evergreen and deciduous forest from activities causing deforestation. There is no specific requirement under the current legislation of Cambodia to conduct EIA for this project activity type (IRL 112). Nonetheless, the expected positive environmental benefits are described and the main findings are adequately summarized in the PD. The audit team reviewed the reports and respective certificate. Based on the information presented, documents reviewed and the interviews and observations during the onsite visit, the audit team does not expect any negative environmental impacts from the proposed VCS project activity. An extensive discussion on the environmental impacts of the proposed project can be found in the CCB PD.

3.4 Comments by stakeholders

The main stakeholder identified for the proposed project activity are the participating communities, the Monks Community Forest, local government officials, civil society organizations, and the Forestry Administration. Several workshops were organized to ensure good cooperation among stakeholders (IRL 118, 19, 36, 38-46). A PRA and household survey were also conducted in each of the villages in order to collect information from stakeholders participating in the proposed project activity. The main findings are adequately summarized in the PD. The audit team reviewed the reports and respective certificate. Based on the information presented, documents reviewed and the interviews and observations during the onsite visit, the audit team does not expect any negative environmental impacts from the proposed VCS project activity.

4 VALIDATION CONCLUSION

TÜV SÜD performed a validation of the following proposed VCS project activity “Reduced Emissions from Deforestation in Community Forests Oddar Meanchey, Cambodia”.

Standard auditing techniques were used for the validation of the project. Methodology-specific customized checklists and protocol for the project were prepared to carry out the audit in order to present the outcome in a transparent and comprehensive manner.

The review of the project design documentation, subsequent follow-up interviews and further verification of references provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant requirements as set in the *Verified Carbon Standard, v3.2*.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. GHG removals attributable to the project are additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PD version.

The validation is based on the information made available to us, as well as the conditions detailed in this report. The validation has been performed following the VCS requirements. The single purpose of this report is its use during the registration process as part of the VCS project cycle. TÜV SÜD can therefore not be held liable by any party for decisions made, or not made, based on the validation opinion beyond that purpose.

Munich, 22 August 2012



Thomas Kleiser

Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Munich, 22 August 2012



Sebastian Hetsch

Assessment Team Leader
TÜV SÜD Industrie Service GmbH



Annex 1:

Table 1.1: Validation Protocol for “Verified Carbon Standard” version 3.2, applying VCS methodology VM0006

VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
1. Project Details				
1.1 Summary Description of Project				
Is a summary of the project description provided?	2	A summary of the project is provided. It includes information on project location, conditions prior the project start, project proponents as well as actions to mitigate deforestation drivers. The project area is public land, but is managed as Community Forestry (CF) by communities in the vicinity of the project area. The communities are requested to submit a management plan in order to get a CF. Main Project Proponent is the Cambodian Forest Administration (FA), actual project implementation is support by several national and international NGOs. <u>Clarification Request No 1</u> • Provide the amount of GHG emission reductions expected in the summary. • Clarify the number of villages involves, description indicates 58 while page 19 indicates 57 villages	CR	☒
1.2 Sectoral Scope and Project Type				
Is the sectoral scope(s) applicable to the project? Is the AFOLU project category and activity type identified? Is the project a grouped project?	2	The project falls under the REDD project category under the typology of avoiding unplanned mosaic deforestation and degradation and it is not a grouped project.	☒	☒
1.3 Project Proponent				
Are all Project Proponents listed, including contact information and roles/responsibilities?	2	The project proponents are listed and contact information is provided as well as information on the roles/responsibilities for the project proponents	☒	☒
1.4 Other entities				
Are all other entities listed including their contact information and roles/responsibilities?	2	Other project entities involved are listed as well as as information on the roles/responsibilities for the project. Terra Global Capital (TGC) is involved for the first 5 years of monitoring. Later the Cambodia Forest Administration (FA) will be	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		responsible and then decide the future of the project. The key project proponent is the FA. <u>Clarification Request No 2</u> Clarify if the CFs are actual project proponents		
1.5 Project Start Date				
Is the project start date and (partial) project crediting period listed and sustained with evidence? Is the day, month and year for all dates specified?	2	The starting date is January 1 2008, when the first project actions took place which is the presentation of the project to the Technical Working Group, and the first financial commitments were established. <u>Clarification Request No 3</u> Provide evidence on project start date	CR	☒
1.6 Project Crediting Period				
Are the project crediting period, the day, month and year for the start and end dates and the total number of years indicated?	2	The duration of the project crediting period indicated is 30 years. The determination of the renewable or fixed crediting period is to be defined. <u>Corrective Action Request No 1.</u> - Specify exact date of the start and end of crediting period - Clarify if it is a fixed or renewable crediting period	CAR	☒
1.7. Project Scale and Estimated GHG Emission Reductions or Removals				
Is the scale of the project (micro project, project or mega project) indicated? Are the annual GHG emission reductions or removals for the project crediting period estimated?	2	The scale of the project is: project. The estimated GHG emission reductions are 8,187,767 t CO ₂ -equivalents over 30 years.	☒	☒
1.8 Description of Project Activity				
Is the project activity described in the PD?	2, 3, 4	The main project activities are: - Reinforcing land tenure - Land-use plans - Forest protection - Assisted natural regeneration - Fire prevention As well as the following leakage prevention measures: - Fuel efficient cook stoves	☒	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		- Live stock protection from mosquitoes - Agricultural intensification - Natural resource Management - Non timber forest Products Development Activities		
Are technologies or measures employed by the project described?	2, 3, 4	A description on the measures employed for each project activity is provided.	☒	☒
Is a description provided how the project will achieve net GHG emission reductions or removals?	2, 3, 4	The project will achieve net GHG emission reductions though the implementation if the above indicated actions aimed to reduce emissions due to deforestation.	☒	☒
Is the lifetime of the project activity indicated?	2	The lifetime of the project activities is not indicated. <u>Corrective Action Request No 2.</u> Include the lifetime of the project activities indicated above	CAR	☒
1.9 Project Location				
Is the project location and geographic boundaries indicated? Are geo-coordinates provided for the project boundary?	2, 5	The project is located in the north-western part of Cambodia. It consists in 13 discrete parcels of land scattered across the central section of Oddar Meanchey. GIS files were provided including the geo-coordinates of the project boundary. <u>Corrective Action Request No 3.</u> • Re-check potential displacement of CF boundaries in Thai border (inconsistencies between GIS data provided by PP and Google Earth data). • Check overlap between CF boundaries in GIS data • Include only eligible areas into the project boundary (currently non-forest areas are also included)	CAR	☒
1.10 Conditions Prior to Project Initiation				
Are the conditions prior to project initiation described?	2, 12, 13, 17, 18, 19.	The major deforestation drivers and deforestation agents prior to project initiation are described. Discussions with communities and literature sources were used to determine the dynamics for deforestation in the project area. A participatory rural appraisal (PRA) was conducted for the determination of the relative importance of the different drivers of deforestation. A ranking exercise was also conducted to assess the importance of the drivers. The mobility of drivers was also conducted based on the PRA.	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		The results of the households survey was used to define the drivers of deforestation. Conversion to cropland is mainly by migrants and for commercial purpose. This driver has its own leakage pressure. Potential overlap of drivers need to be clarified to ensure conservative approach. SOPs were developed for conducting the PRA and household surveys. In each village a certain amount of households were selected. People were interviewed also outside the CFs. In order to randomly select the households, a numbering was conducted. Hunting is for commercial purpose and self consumption. The analysis of the spatial drivers was based on a database from the commune year 2008. The road data is from the year 2003, forest type is from database developed by the PP, slope data is based on SRTM The criteria for determining the spatial drivers by expert opinion, this is a qualitative analysis. <u>Clarification Request No 4</u> • Provide evidence on the accuracy/ reliability for determining the relative importance of each driver of deforestation. • Provide sources of information for the non-spatial variables driving deforestation		
Is it demonstrated that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction?	2	The project relies on the commitment from local villages and forest administration office. Therefore, it can be reasonably assumed that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.	☑	☑
1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks				
Is compliance of the project with all and any relevant local, regional and national laws, statutes and regulatory frameworks identified and demonstrated?	2, 22, 31, 112, 113, 122, 124	The project has the support of the Council of Ministers (Decision no. 699 signed May 2008) as well as the land tenure and land use rights. The Forestry Administration of the Royal Government of Cambodia is also a project proponent, thus it is credible that the project complies with all and any relevant local, regional and national laws, statutes and regulatory frameworks. Relevant laws and regulations are further the national forestry law and	CR	☑



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		the sub-degree on Community Forestry Management number and date: 79. 02/12/2003 also accessible online. <u>Clarification Request No 5</u> - Provide evidence on the compliance with the forestry law of 2002 - Provide a short summary on the compliance with the Sub decree on Community Forestry Management in the PDD		
1.12 Ownerships under Other GHG Programs				
1.12.1 Proof of land title				
Is evidence of proof of title provided? Is the proof of title been provided by one of the following: a) a legislative right b) a right under local common law c) ownership of plant, equipment and/or process generating the reductions/removals d) a contractual arrangement with the owner of the plant, equipment or process that grants all reductions/removals to be proponent	2, 20-26, 31, 112, 125	The owner of the project area is the state of Cambodia (see also Cambodian Land Law – IRL 125). The project area consists of 13 Community Forestry (CF) areas, which were established with the government (see CF sub-degree). Each CF consists of families in several communities in the vicinity of the CF area. The actual management is done by Community Forestry Management Committees (CFMCs), elected by the members of the CFs. The CFs were already founded before the start of the project, however there was not sufficient funding to implement activities to actually protect the forest area. Respective documents were reviewed by the audit team and discussed with relevant authorities during the onsite visit. The Forest Administration (FA) is responsible for distributing the benefits from the sale of carbon credits. In the agreement with the CFMCs benefit sharing from carbon revenues is not included. Terra Global Capital (TGC) receives a fixed percentage of the carbon Credits from the project as determined in a respective agreement between FA and TGC. The respective agreement included however only 12 CFs, this agreement also specifies that the least 50% of the carbon benefits will be allocated to local communities participating in the project after deducting project costs. <u>Clarification Request No 6</u> Clarify the missing agreements (12 instead of 13)	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		Clarify and provide evidence on the transparent communication on the benefit sharing with the local communities involved.		
1.12.2 Emissions Trading Programs and other Binding Limits				
(if applicable) Is it demonstrated that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions?	2, 113	Cambodia is a non-Annex I signatory of the Kyoto protocol and it does not have an emissions trading program to binding limits on GHGs. Cambodia participates in the Readiness stage of the FCFP. It is foreseen to have a registry system for REDD projects. The project is listed in the national REDD programme of Cambodia. It is expected that the project would be considered	N/A	N/A
1.12.3 Participation under other GHG Programs				
<i>Indicate whether the project has been registered, or is seeking registration under any other GHG programs. Where the project has been registered under any other GHG program, provide the registration number and details.</i>	2	The project is applying to the CCB Standards for registration. The CCBS are a complementary GHG program and does not issue any credits. The CCBA audit is conducted jointly with VCS audit and the reports are referring to the other validation process respectively to avoid any confusion or potential double counting of carbon credits. Databanks of other GHG programs were checked and the audit team did not find any indications that the project is already registered under a different GHG program	☒	☒
1.12.4 Other Forms of Environmental Credit				
Has the project generated any other form of GHG-related environmental credit for GHG emission reductions or removals? If yes, has or will any such credit be cancelled from the relevant program?	2	The project does not generate any other form of GHG-related environmental credit besides the anthropogenic GHG emission reductions resulting from the project implementation.	☒	☒
1.12.5 Projects Rejected by Other GHG Programs				
Has the project been rejected by any other GHG programs? If yes, has the relevant information been provided?	2	The project was not yet implemented, thus it has not been rejected by any other program. Databanks of other GHG programs were checked and the audit team did not find any indications that the project is already registered under a different GHG program	☒	☒
1.13 Additional Information Relevant to the Project				
1.13.1 Eligibility Criteria				
For grouped projects: Are eligibility criteria identified for inclusion of new instances of	2	The project is not a grouped project.	N/A	N/A



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
each project activity?				
1.13.2 Leakage Management				
Are the leakage management plan and implementation of leakage and risk mitigation measures identified?	2,12, 13, 17, 18, 19	A description on the leakage management and risk mitigation measures identified is provided. The leakage mitigation activities include: Fuel efficient stoves, Livestock protection from insects, Agricultural intensification, Water resource development projects, Non-Timber Forest Product (NTFP) development activities. The commitment of the communities involved in the project implementation was analyzed in the household surveys. CDA is responsible for contracting for different activities. Water projects are designed to fire mitigation and agricultural intensification.	☒	☒
Commercially Sensitive Information				
Indicate whether any commercially sensitive information has been excluded from the public version of the project description and briefly describe the items to which such information pertains.	2	A list of commercially sensitive information excluded from the public version of the project is included to the PD. A brief description of the items to which such information pertains is missing. <u>Clarification Request No 7</u> As required by the standard, briefly describe the items to which such sensitive information pertains.	CR	☒
Further Information				
Include any additional relevant legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and/or temporal information that may have a bearing on the eligibility of the project, the net GHG emission reductions or removals, or the quantification of the project's net GHG emission reductions or removals.	2	No further information included.	N/A	N/A
2. VCS Methodology				
2.1 Title and references of the VCS methodology				
Is the title, reference and version number of the methodology or methodologies applied to the project identified?	2	The VCS methodology: Carbon Accounting in Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation has been applied and was properly indicated.	☒	☒
2.2 Applicability of Methodology				
Conditions of applicability				
Criteria related to conditions on the land before project implementation:				



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
1. Has the land in the project area, consisting of either one contiguous area or multiple discrete project parcels (see definition of project area), qualified as forest at least 10 years before the project start date (VCS 2007.1, 2008 p 16)?.	2, 5, 129, 130, 131	The forest definition applied for the demonstration of eligibility was at least 10% canopy cover, a tree height of 2 m, and a minimal area of 1 ha, while the UNFCCC forest definition of Cambodia is at least 10% canopy cover, a tree height of 5m, and a minimal area of 0.5 ha. The analysis was based on satellite imagery from 1994, which demonstrates that the land qualified as a forest at least 10 years before the project start. The project area consists of 13 discrete parcels of land. A database of reference points was created using high resolution images (SPOT 2005. Google maps) to detect canopy cover of at least 10%. The areas under ANR were identified under participatory process. The definition of degradation used to define the area was based on community perception instead of the definition defined by the methodology. The total area also includes non-forest strata (11%). These areas should be excluded from the project area. <u>Corrective Action Request No 4.</u> • Provide evidence on the eligibility of lands under ANR (see also CAR 6). • Clarify which forest definition was applied for the analysis of forest cover/update with Cambodia UNFCCC forest definition • Provide evidence on the analysis conducted for the demonstration of land eligibility (satellite imagery, report on the assessment, etc). • Exclude non-eligible area	CAR	☒
2a. Is it demonstrated that the project area would be deforested in absence of the REDD project activity, as evidenced by the presence of deforestation agents and drivers near the project area (see the following criterion), and a minimal deforestation rate in the reference region of 0.5% during the historical reference period?	2, 19, 114, 119, 120,	It is assumed that the project area would be deforested because of the presence of deforestation agents and drivers near the project area, as well as a minimal deforestation rate of 0.5% in the reference region during the historical reference period. Remote sensing analysis was conducted to determine deforestation to 2.9% and the drivers of deforestation were identified during the PRA survey. An independent study was conducted by the University of Copenhagen that defined a deforestation rate of 2.5%. The Atlas of Cambodia also	☒	☒

Validation Protocol for “Verified Carbon Standard” version 3.2, applying VCS methodology VM0006

Project Title: Reduced emissions from deforestation and degradation in community forests, Oddar Meanchey, Cambodia



Industrie Service

VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
2b. Does the deforestation in the reference region follow the mosaic typology? (the presence of a mosaic typology must be verified using the criteria for mosaic deforestation set forward by the VCS)	2	provides information on the forest cover to demonstrate deforestation. The methodology applied is specifically for mosaic typology of deforestation. The mosaic typology was checked by the audit team during the field visit. Clarification Request No 8 Provide evidence on how was the mosaic typology verified using the criteria defined by the VCS for mosaic deforestation	CR	☒
3. Have the areas that have been legally sanctioned for logging where the primary activity would be stopping such logging being excluded from the project area?	228, 29, 30	Logging is not expected to occur as the communities have signed binding agreements which prevent commercial timber operations. There is a cap of timber harvesting for local use which is defined at each CFMU.	☒	☒
4a Does the deforestation and forest degradation in the project area occurs due to one or more of the following categories of drivers? (see section II.1.3 of the methodology) - Driver 1: Conversion of forest land to crop-land or grazing land for subsistence and small-scale farming. - Driver 2: Conversion of forest land to settlements - Driver 3: Logging of timber for commercial sale - Driver 4: Logging of timber for local and domestic use - Driver 5: Fuel-wood collection or charcoal production - Driver 6: Forest fires	2, 19	As described in section 1.10 above, the deforestation is caused by all drivers as listed in the methodology. A PRA was conducted in the 13 Oddar Meanchey CF in order to identify the deforestation drivers and the ranking of contribution to deforestation An average of the ranking of the deforestation drivers among the communities was taken.	☒	☒
4b Has degradation been included in the baseline? Is it demonstrated that the degradation is long-term in nature and human induced?	2	Degradation was not included in the proposed project at time of validation.	☒	☒
5a. Accurate data on past land use, land cover, and forest cover are available for at least four points in time in the reference region. More specifically: - Is it demonstrated that the reference region has similar characteristics as the project area and that the same drivers of	2, 115, 120,	Data on past land use, land cover and forest cover are available on the following periods of time before the project start date: one classified Landsat image from Jan 2008 (0-1 years), one image each from 2006, 2005, 2004 and 2003) 2-5 years, images from 2002 and two from 2000, 6-9 years, and one image from 1994 (10-15 years). The Atlas of Cambodia was used to demonstrate the compatibility of	CR	☒

Validation Protocol for “Verified Carbon Standard” version 3.2, applying VCS methodology VM0006

Project Title: Reduced emissions from deforestation and degradation in community forests, Oddar Meanchey, Cambodia



Industrie Service

VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
deforestation are present in the reference region and in the project area according to the procedures included in this methodology. - At least one remote sensing image (i.e., data) from 0-1 years before the project start date, at least one image from 2-5 years before the project start date, at least one image from 6-9 before the project start date, and one image from 10-15 years before the project start date must be available. No images older than 15 years may be used for the historical reference period.		reference region with the project area Characteristics of the reference region are discussed in section 3.1.1 of the PD. Clarification Request No 9 • Include information on the agents of deforestation as indicated in table 4 of page 26. • Accuracy assessment of remote sensing analysis still need to be discussed in depth with audit team •		
5b. Broad LULC classes and forest strata (if forest degradation is included) must be recognized with a minimal accuracy of 70%. The carbon accounting must be completely symmetrical: if degradation is included in the baseline, regeneration must be included as well. Likewise, deforestation is included in the baseline, and, therefore, increase in forest cover must be included in the baseline as well.	2	The accuracy of broad LULC classification is 94%	☑	☑
6. Subsequent to the removal or disappearance of carbon in the above ground live biomass pool, carbon in the below ground biomass pool is also removed or disappears within the duration of the project.	2	It is expected that after the removal of the above ground biomass, the below ground biomass will disappear within the duration of the project. The publication referenced is Chambers et al., 2000. (Decomposition and carbon cycling of dead trees in tropical forests of the central Amazon), as suggested by the methodology.	CR	☑
Criteria related to conditions on the land after project implementation:				
7. Are the emissions from deforestation and forest degradation in the project area reduced by implementing one or more of the following activities: - Project activity 1: strengthening of land-tenure status and demarcating forest, tenure and ownership boundaries. - Project activity 2: development of sustainable forest and land use management plans. - Project activity 3: forest protection through patrolling of forests and forest boundaries, and social fencing through capacity building and creating mechanisms to	2, 130, 131	All the activities indicated in the methodology are foreseen to be implemented in this project. Respective activities are foreseen in the budget and discussed with the project proponents onsite.	☑	☑

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VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
communicate forest trespassing to law enforcers. - Project activity 4: fire prevention activities through the construction of fire breaks and controlled burning. P - Project activity 5: decrease in the consumption of fuel-wood by introducing fuel-efficient wood-stoves and mosquito nets for livestock.				
8. Is the magnitude of activity-shifting leakage by geographically constrained drivers from project activities quantified through a rigorous monitoring plan consisting of rural appraisals, remote sensing analysis and biomass inventories in the project area and all leakage belts as indicated in the methodology?	2, 10, 11, 12, 13	Standard Operation Procedures were developed in order to monitor the magnitude of ac of activity-shifting leakage by geographically constrained drivers from project activities.	☑	☑
9. Have all increases in CO ₂ , N ₂ O and CH ₄ emissions from project or leakage prevention activities accounted for using the procedures included in the methodology? In addition, as part of the validation, the project proponents shall demonstrate that no other significant emissions exist originating from any measure associated with the project.	2, 6, 131,	Increases in CO ₂ , N ₂ O and CH ₄ emissions from project or leakage prevention activities are accounted for. Calculation of emission sources is included in the section 3 in the significant calculations No other project activities than the ones defined in the methodology are implemented, thus no other significant emissions exist.	☑	☑
10. No fossil-fuel based alternative fuel sources may be promoted by the project proponents as a leakage prevention activity	2	No other fossil fuel based alternative would be promoted as confirmed during the field visit	☑	☑
11. No commercial production of timber, fuel-wood or charcoal from biomass within the project areas may be planned in the project areas after the project starts. Only fuel-wood gathering for domestic use is allowed in project areas at a rate that is lower than the baseline fuel-wood and timber gathering rate.	2, 29, 30, 31	Agreements between the CF and Forest Administration prohibit the commercial production of timber, fuelwood from biomass within the project area.	☑	☑
12. The decrease in carbon stored in long-lived wood products due to avoiding logging for timber for commercial on-sale is less than 5% of the total credits and therefore insignificant (VCS 2007.1, 2008 p 19). The insignificance of the long-lived wood products pool must be explicitly tested using the procedure in section II.4.1	2	No Information provided regarding this applicability criteria. <u>Clarification Request No 10</u> Provide information and evidence on the insignificance of the long-lived wood products pool.	CR	☑



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
13. Are the following conditions met so that aboveground live non-tree biomass can be omitted as a carbon pool? - The project areas will be converted from forest to non-forest with final land cover of non perennial crop under the baseline scenario. - No oil palm plantations or short rotation woody crops are present under the baseline scenario within the reference region after deforestation. This is a necessary but not sufficient requirement to exclude aboveground live non-tree biomass. - Based on scientific studies or field observations, it can be demonstrated that the magnitude of change of the aboveground live pool upon deforestation is either positive or insignificant.	2	According to the 2005-2006 agricultural census of the Ministry of Agriculture, Forestry and Fisheries of Cambodia, there are no crops with significant amount of aboveground biomass cultivated within the reference region. It is also indicated that the project areas will be converted from forest to non-forest based in scientific and remote sensing data. <u>Clarification Request No 11</u> Provide the corresponding evidence sustaining the conditions for neglecting above ground non-tree living biomass as a carbon pool.	CR	☒
14. Are the following conditions met so that soil organic carbon can be omitted as a carbon pool? (see http://cdm.unfccc.int/EB/033/eb33_repan15.pdf): - The project areas shall not include organic soils (e.g., peat-lands), or wetlands - Removal of existing vegetation for assisted natural regeneration (ANR) or fire prevention measures shall be insignificant and not occur on more than 10% of the area on which ANR activities occur to avoid a decrease in soil carbon in the project scenario related to a decrease in plant biomass input into the soil. - Project activities will not remove any fine litter (woody twigs less than 2mm diameter, bark and leaves) - No mechanical soil disturbance such as tilling or soil cultivation is allowed in the project area.	2, 10	The SOPs for ANR indicate that removal will not require any mechanical soil disturbance. Project activities will not remove any litter. The assessment of land use classes identifies wetland areas, which are excluded from the project area.	☒	☒
15. Are sufficient and appropriate data available to quantify the carbon stored in long-lived wood products under the baseline scenario? Appropriate sources of data are listed within the methodology.	2, 12, 17, 18, 19	Evidence confirming that sufficient and appropriate data are available to quantify the carbon stored in long-lived wood products under the baseline scenario is found in the PRA and the social assessment conducted for the proposed project.	☒	☒
2.3 Project Boundary				



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
Physical Boundary				
GHG Sources, Sinks and Reservoirs Is sufficient information provided about GHG sources, sinks and reservoirs for the baseline scenario and for the project given? Is the project boundary defined? Are the relevant GHG sources, sinks and reservoirs for the project and baseline scenarios identified?	2, 16	A table is provided indicating the carbon pools considered and the GHG sources in line with the methodology. Information on the project boundary, leakage belt and reference region is found in the GIS files provided to the audit team. (see also CAR in section 1.9)	☑	☑
2.4 Baseline				
Is the baseline scenario Identified and justified?	2	The identified most plausible baseline scenario under the CDM modalities and procedures, paragraph 22, is option (a): Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary. A justification is based on the observed deforestation in the region. Further justification is provided in section 1.10 of the PD.	☑	☑
2.5 Demonstration and Assessment of Additionality				
Is the additionality of the project undertaken in accordance with the applied methodology?	2	The project is applying the tool: VCS VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities ver 1.	☑	☑
Step 1. Identification of alternative land use scenarios to the proposed VCS project activity				
Have realistic and credible land-use alternative(s) been identified (sub-step 1a), at least including: - Continuation of the pre-project land use - Project activity on the land within the project boundary performed without being registered as the VCS project activity If applicable, activities similar to the proposed project activity on at least a part of the land within the project boundary of the proposed VCS AFOLU project at a rate resulting from - legal requirements; - or extrapolation of observed forestation activities in the geographical area with similar socioeconomic and ecological conditions to the proposed VCS AFOLU project activity beginning 10 years prior to the project start date.	2	No single land use alternative scenarios were identified due to the fact that the deforestation typology is Mosaic Deforestation. It is indicated that drivers of deforestation interact to create alternative land use scenarios. <u>Corrective Action Request No 5.</u> - Identify realistic and credible land-use alternative land use scenario as required by the tool. - Discuss re-growth of deforested land as an alternative land use scenario and provide respective evidence	CAR	☑



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Are the alternative(s) in compliance with all applicable legal and regulatory requirements (sub-step 1b)? <i>If that is not the case, an alternative can only be considered if applicable legal or regulatory requirements are systematically not enforced or the non-compliance with those requirements is widespread</i>	2, 31, 112, 125,	Illegal logging is a driver of deforestation that does not comply with the law, however it is difficult to control and the law is not enforced.	CAR	☒
Is the project scenario not the only remaining alternative?	2	No single land use alternative scenarios were identified. See CAR above	CAR	☒
STEP 2. Investment analysis		<i>No investment analysis was applied.</i>		
STEP3. Barrier analysis				
Is a complete list of barriers developed that prevent the different alternatives to occur (sub-step 3a)?	2	The identified barrier is a financial barrier. Additional barriers include, lack of law enforcement , shifting agriculture, customs relating to land use, unclear or informal land tenure, demographic pressure on the land.	☒	☒
Is transparent and documented evidence provided on the existence and significance of these barriers?	2, 19	A participatory rural appraisal was provided as evidence on the presence of the drivers of deforestation. In other CFs the activities are conducted with short term funding <u>Clarification Request No 12</u> • Provide evidence on the financial barrier • Provide evidence on lack of law enforcement in illegal land use activities (i.e. illegal logging).	CR	☒
Is it determined which land use scenarios identified in the Sub-step 1b are prevented by at least one of the barriers listed in sub-step 3a (sub-step 3b)?	2	No single land use scenarios were identified. <u>Clarification Request No 13</u> Determine which land use scenarios identified in the sub-step 1b are prevented by at least one of the barriers listed in sub-step 3a (sub-step 3b)	CR	☒
Is explained how the identified barriers are not preventing the implementation of at least one of the alternative land use scenarios (sub-step 3b)?.	2	No explanation was provided. Alternative land use scenarios were not identified. <u>Clarification Request No 14</u> Demonstrate that alternative land use scenarios are prevented by the identified barriers	CR	☒
STEP 4. Common practice analysis				



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
Is the project activity common practice in the region?	2	There are some reforestation projects in the project region. Two activities are mentioned in the PD. Clarification Request No 15 - List all similar activities in the region (including other REDD projects, and other CF areas) - Provide documented evidence and quantitative information of the similar activities. - Provide an analysis on similar activities to the proposed VCS AFOLU project activity been implemented or currently underway.	CR	☒
Has an analysis been provided to which extent similar activities to the one proposed as the VCS AFOLU project activity have been implemented previously or are currently underway?	2	A general description is provided in the PD, however more detail on similar activities remains to be identified (i.e. fuel-efficient stoves) <i>See comment above</i>	CR	☒
If activities similar to the proposed VCS AFOLU project activity are identified, are there essential distinctions between them?	2	<i>See comment above</i>	CR	☒
2.6 Methodology Deviations				
Are any methodology deviations identified and justified?	2	No methodology deviations are identified.		
3. Ex-Ante Calculation of GHG Emission Reductions and Removals				
3.1 Baseline Emissions / Removals				
Are the baseline emissions and/or removals correctly quantified and sustained?	2	The step-wise approach was not strictly followed as required by the methodology. Clarification Request No 16 The step-wise approach shall be followed as required by the methodology.	CR	☒
Step 1 – Select Spatial and Temporal Boundaries (Section II.1.1)				
Step 1A – Describe Spatial Boundaries of the Discrete Project Area Parcels: Have the PPs provided digital (vector-based) files of the discrete project area parcels in a common GIS software format? Is a table included, containing the name of each discrete project area parcel, the centroid coordinate (latitude and longitude using a WGS1984 datum), the total land area in ha, details of	2, 5	Digital files of the discrete project area parcels, including the leakage belt and the reference region were provided using WGS 84 datum. A table as required by the meth is included in the PD (table 4)	☒	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
tenure/ ownership and the relevant administrative unit it belongs to?				
Step 1B – Select Size of the Reference Region: - Have regional or national spatially explicit baselines been and approved by the competent national authorities? - If no such applicable regional or national baseline is available, has a stratified regional baseline been developed in a reference region around the project area but much larger than the project area? - Does the reference region consist of both forest and non-forest land? - Does the reference region include the project and leakage areas before the project start date, i.e. during the historical reference period? - Does the leakage areas consist of both forest and non-forest land? (However, after project start, the reference region may not include the project and leakage areas anymore). - Have the project proponents used Table 3 to determine the minimal size of the reference region?	2, 5, 115, 120	No regional or national approved baselines were developed by Cambodia at the time of validation. A regional baseline was developed in a reference region which includes the project area. The reference region was defined based on (1) forest laws and policies, (2) land use history and dynamics, (3) ecological conditions, and (4) social conditions. In order to determine the size of the reference region a 25km buffer was defined based on the bounds of a Landsat dataset available. Protected areas, Thailand and Economic Land Concessions were excluded from the reference region due to difference of applicable laws, social conditions and land use history. The reference region is approximately 10 times larger than the project area, thus complies with the minimum requirement as indicated in Table 3 of the methodology. An overlay of the leakage belt with the land cover map demonstrates that the areas consists of both forest and non forest-land	☒	☒
Step 1C – Select Location of the Reference Region: - Does the boundary of the reference region coincide with natural, geopolitical or watershed boundaries? - in case the project area shares a border with a natural, geopolitical or watershed boundary, has the boundary of the reference region been extended outwards by applying a buffer around the project area?. - Does the reference region exclude all areas on which the access by agents of deforestation is restricted, such as national parks, areas where REDD initiatives are effectively implemented, army bases, or land concessions? - In addition, the reference region must contain at least 25% forest cover at the beginning of the crediting period. This condition must be explicitly checked using the	2, 5, 115, 120	The reference region is located in the northern part of Cambodia in the boundary with Thailand. It is not specified if the boundaries of the reference region coincide with natural, geopolitical or watershed boundaries. Category V of IUCN protected areas were excluded <u>Corrective Action Request No 6.</u> • Update the boundary of the reference region to coincide with natural, geopolitical or watershed boundaries • The exclusive reference region shall exclude the leakage belt. • Ensure to exclude all protected areas from the reference region.	CAR	☒

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classification that is developed under the remote sensing section of this methodology. - Is it demonstrated that the reference region does not contain areas where agents of deforestation have restricted access?				
Step 1D – Demonstrate the similarity between project area and reference region: - Is it demonstrated that the reference region is similar to the project area with respect to a number of key variables, as detailed in Table 4 of the methodology? (Compare the value of every key variable listed in Table 4 between reference region and project area according to the comparison procedure in the same table) - Is evidence provided sustaining each of the variables being compared?	2, 5, 95, 96, 115, 116, 120	A comparison between the reference region and project areas is based on slope, elevation, soil types, forest type, land use, forest disturbance. Variables missing are, deforestation drivers, land tenure status, policies and regulations, degree of urbanization, See CR above on reference region comparison.	CAR	☒
Step 1E – Specify Temporal Boundaries of the Project: are the following temporary boundaries fixed? - The historical reference period with exact start date - The project crediting period - The frequency of verification - Frequency of Baseline update		No information is provided regarding temporal boundaries of the project. <u>Clarification Request No 17</u> Include information on the temporary boundaries of the project	CR	☒
Are all reporting requirements included to the PD? - Maps for all project areas with the LULC classes and forest stratification - Digital boundaries of the discrete project area parcels and the reference region - Table of all the discrete project area parcels with their ID, name, coordinate centroid (latitude and longitude using a WGS1984 datum), total land area in ha, details of tenure/ownership, and the relevant administrative unit. - Overview map of the whole reference region with the location of the discrete project area parcels clearly indicated.	2	See comments above regarding missing information in the PD.	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
- Evidence that areas with effective protection were excluded from the reference region - The size of the reference region relative to the size of the project area for comparison with the relative sizes in Table 3. - Demonstration of the similarity between reference region and project area based on the formal comparison of as listed in Table 4. - Description of the temporal boundaries				
Step 2 – Analyze Historical Deforestation and Forest Degradation in the Reference Region				
Step 2A – Describe Data Sources				
Is the data that are minimally required included to the analysis as indicated in table 5 of the methodology? (1) at least one image from 0-1 year before project start date, (2) at least one image from 2-5 years before project start date, (3) at least one image from 6-9 years before project start date, (4) at least one image from 10-15 years before project start date.	2, 120	Information on data sources is provided in section 2 above. The minimum requirement is complied as required by the methodology. <u>Clarification Request No 18</u> • Follow the step-wise approach as required by the methodology. Include the corresponding information in the corresponding steps. • Provide the information reported on the employed remote sensing and other spatial data for assessing deforestation and forest degradation.	CR	☒
Step 2B – Define LULC Classes and Forest Strata				
Have the LULC classification and forest stratification been documented separately for project area and the reference region and use the procedures indicated in the methodology?	2	A description of the land use and land cover classes is provided in general, no distinction between project area and reference region. Four non-forest classes and one forest land were identified. Burn marks and clouds are excluded from the classification <u>Clarification Request No 19</u> • Document the LULC classification and forest stratification separately for project area and the reference region. • Clarify if at least the six IPCC LULC classes (Forest Land, Crop Land, Grass Land, Wetlands, Settlements, and Other Land) were included. • Clarify whether Clouds and Cloud Shadow can be qualified as	CR	☒



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		land use class. - Clarify whether burn marks are a separate LUCLC class or are part of the agricultural class / forest (dynamic) class (depends on the time of the image?). - Ensure consistency in the description/identification of burn marks as it is indicated as non-forest but indicated to occur in forest and re-growth (forest definition). - Clarify title in table 20 which refers to 4 non-forests LULC classes but contains more classes including forest (i.e. forest covered by haze, burn marks)		
Sub-Step 1: Assess the key factors that influence carbon stocks in the above- and below-biomass pools within the reference region.	2, 95, 96, 115, 120	No specific information is provided regarding the key factors that influence carbon stocks in the above and below ground biomass. However a general description on forest classes is provided were Mixed and Deciduous forests (DCD) and Evergreen forests (EVG). Information on the key factors that influence carbon stocks in the above and below ground biomass within the reference region is found under the description of LULC classes in section 3.1.2. The initial forest class was taken at Cambodia level (Kim Phat 2002) but later it was defined on two forest classes: DCD and EVG	☑	☑
Sub-Step 2: Collect maps of key factors identified in step 1 within the reference region	2, 95, 96, 115, 120	No maps of key factors that influence carbon stocks in the above and below ground biomass were found in the PD. The information was taken from the Atlas of Cambodia for the analysis which is also available digital. Four points in time for the analysis were taken in order to ensure that the seasonality was taken into account. Layers from different time series were also used to train the supervised classification.	☑	☑
Sub-Step 3: Preliminary stratification. The stratification shall be conducted by re-classifying the maps collected in step 2 into LULC classes and forest strata that have significant differences in carbon stock density.	2, 5	No information is included to the PD regarding the preliminary stratification. <u>Clarification Request No 20</u> Provide the preliminary stratification as required by the methodology.	CR	☑
Sub-Step 4: Field survey. Conduct a biomass inventory on at least three plots for each preliminarily identified stratum	2, 5, 6,	No information on a field survey is provided in the PD. However an excel spreadsheet was provided jointly with the PD containing the information from the biomass inventory The field assessment was made in 2008. After the first sampling it was	☑	☑



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		found that more plots were required.		
Sub-Step 5: Final stratification. With the information from the field survey, evaluate the homogeneity of the carbon stock densities within each preliminary forest stratum.	2, 5	No information on the final stratification is provided in the PD Clarification Request No 21 • Provide the final stratification and corresponding analysis of homogeneity of the carbon stock densities • Include the final stratification to the PD.	CR	☒
For areas subject to ANR activities: - Have these areas been further divided into forest strata according to the specific silvicultural management activities to be employed? - Has information on variables that influence biomass growth potential been provided? - Have the stand models to be implemented in the project area been defined? - Has the establishment timing of each stand model been defined? - Have the ANR areas been stratified according to (1) Existing LULC class (2) Biomass growth potential (3) Management (e.g., establishment year, treatment)? - Have the maps of the stratified project areas presented in the PD.	2, 5	No information on areas subject to ANR is included in this section of the PD. One stratum is defined for ANR areas ex-ante. Ex-post it will be defined based on the planned activities. Clarification Request No 22 Provide required information on ANR areas. (See also CAR 4 in section 2.1 (provide information on eligibility of ANR areas))	CR	☒
Step 2C – Define Land Transitions between LULC classes and Forest Strata				
Has a list been prepared of the transitions that are considered by the project proponents by analyzing a matrix combining all relevant LULC class and forest strata subject to deforestation, forest degradation, and increase forest cover and regeneration?	2	A matrix is included to the PD describing the transitions between LULC classes; however explanation of the matrix is missing. Clarification Request No 23 • Provide an explanation on the matrix and the assumptions considered for the transitions. • The table of LULC change category will be updated considering the final LULC classes.	CR	☒
Has the land that only temporarily transitions from forest to non-forest and transitions back to forest after a short while been considered temporarily unstocked forest and not counted to the total deforestation and increased forest cover rates?	2	No information on land that is considered temporarily unstocked forest is included in the PD. No slash and burn is practiced, the only potential option are the burn marks found in the LULC analysis.	CR	☒



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		<u>Clarification Request No 24</u> Clarify whether temporarily unstocked forest was found among the transitions and if these were excluded from the deforestation and increased forest cover rates.		
Has the default value of two years been used for every deforestation transition, unless project-specific conditions demand a different period?	2	The period of every deforestation transition is not specified in the PD. <u>Clarification Request No 25</u> Indicate the period used for every deforestation transition.	CR	☒
Has the forest land that transitions from a stratum with a larger carbon density stock to a stratum with smaller carbon density stock considered degradation if it has persisted for at least 3 years?.	2	Degradation was not considered for this project at the time of validation	☒	☒
Step 2D – Analyze Historical LULC Class and Forest Strata Transitions				
Pre-processing: Have the following steps being followed? - Geometric corrections - Cloud and cloud shadow removal - Reduction of haze - Radiometric corrections	2, 119, 120, 133, 134	The processing of the satellite imagery included geometric corrections and ground truth data. No radiometric correction was applied. Different training datasets were used. The assessment of each dataset was made independently thus, no radiometric correction was needed. Clouds and haze were classified and later were removed.	☒	☒
LULC Classification and Forest Stratification: Has it been done using widely accepted analysis techniques such as maximum likelihood, decision trees, or support vector machines?	2, 119, 120	A supervised classification was conducted. Different locations and four different interpreters were involved classifying the same point manually. Only where there was at least 70% consensus among the interpreters the points were taken.	☒	☒
Map Accuracy Assessment and Discounting Factor for Classification/Stratification: - Has it been calculated by multiplying a factor related to the accuracy, and a factor related to the number of images? - Has a minimal accuracy of 70% as required for discerning LULC classes or forest strata been achieved? - Has the accuracy been assessed by comparing predicted LULC classes or forest strata for a number of reference locations with independently determined LULC classes or forest strata?	2, 119, 120, 135	A sample of 30% of the reference points were used for the map accuracy. An overall thematic accuracy between 94 to 98% was achieved for forest classes. QA/QC procedures are conducted to ensure the correct interpretation.	☒	☒

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- Have At least 50 reference locations per LULC class or forest stratum been used?				
Sub-Step 1: Determine the accuracy of LULC classification: - Has it been calculated based on a database of locations and their corresponding correct classification (as determined by ground-surveys or through visual interpretation of higher resolution data)? - Has a confusion matrix been created to assess the accuracy? - Has the smallest accuracy of all maps been used to select the first discounting factor?	2, 119, 120, 135	A set of reference points were selected, 66% of these were used for training and 33% for verification. A confusion matrix was created to demonstrate the accuracy. The smallest accuracy of all maps has been used to select the first discounting factor.	☒	☒
Sub-Step 2: Determine the accuracy of forest stratification: - Has the accuracy been calculated by comparing the actual carbon density of all field sampling plots, with the predicted carbon density class from the forest stratification map? - Has the proportion of the points which are classified conservatively, i.e. the proportion of points that have an actual carbon density higher or equal than the predicted carbon density, and the commission and omission errors been reported?	2, 119, 120, 135	A table indicating the accuracy between 94 to 98% is presented. No information was found on the commission and omission of errors. <u>Clarification Request No 26</u> Provide information on the commission and omission of errors (see sub-step 2 of methodology).	CR	☒
Sub-Step 3: Multiply the first factors from sub-steps 1 and 2 with the discounting factor based on the number of images in the historical reference period: - Has the table 7 in page 37 been used for accuracy discounting factors for LULC classification	2, 119, 120, 135	No information was found on the discounting factors for LULC classification. The discounting factors for LULC classification was not applied as the accuracy is above 85%.	☒	☒
Step 2E – Summarize all Historical Land Transitions				
- Has the area for each land transition been calculated?	2, 135	The area for each land transition of the historical reference period was calculated. <u>Clarification Request No 27</u> Include information on the area for each land transition of the historical reference period to the PD	CR	☒
- Apply an appropriate temporal filter to ensure that only land that meets the three-year condition is designated as degradation.	2	Degradation is not included.	☒	☒



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Are all reporting requirements included to the PD? - List of all spatial, remote sensing and field observation data sources with their characteristics as listed in Table 5 of the methodology (page 29). - Report on the stratification procedure, document separately for project area and reference region. - Description of each LULC class and forest stratum - Description of each land transition - Remote sensing-based LULC classification	2, 135	A land transition matrix is included as required by the methodology. A description of forest and non-forest classed is provided in section 1.20.2.1 of the PD (see comments above) Clarification Request No 28 Information on spatial remote sensing is provided but does not follow table 5 of the methodology. Update the PD according to requirements of the methodology.	CR	☒
Step 3 – Analyze the Agents and Drivers of Deforestation				
Step 3A – Identify Deforestation and Forest Degradation Agents and Drivers				
For each of the six included categories of drivers covered by this methodology that are present in the reference region, the main agents must be identified.	2	Ten categories of drivers are described in section 1.10 of the PD. Agents of deforestation are listed but no further information is provided.	☒	☒
Step 3B – Assess the Relative Importance of the Deforestation Drivers:				
Have the two steps been followed? (1) estimating the absolute annual carbon loss per driver, and (2) estimate the relative contribution of each driver to the total carbon loss from deforestation and degradation.	2, 13, 19	The relative contribution of each driver was based on the PRA exercise. The annual carbon losses were also estimated in the PRA exercise.	☒	☒
Sub-Step 1: Estimating the absolute annual carbon loss per driver: Have the formulas in Table 9 (page 41), which are based on GPG-LULUCF been applied?	2, 12, 13, 17, 18, 19	The calculations on annual carbon loss per driver are provided. Clarification Request No 29 - Provide the corresponding evidence for the assumptions for the estimation of the absolute carbon loss per driver. - Clarify the source of the number of households - Ensure consistency in the calculations with the sources and ensure values are consistent with other published data. - Check input values of calculations (i.e. input of fuelwood per day instead of fuelwood consumption/year) - Ensure consistency among the tables of calculations and tables in the PD (i.e. Table 3 vs. 1b)	☒	☒
Sub-Step 2: Estimating the relative contribution of each driver: Has the relative importance of the deforestation and forest degradation drivers been calculated by combining the absolute	2, 12, 13, 17, 18, 19	The relative contribution of each driver was estimated based on the PRA assessment.	☒	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
carbon losses from Table 9 with the contributions from Table 10 using the formulas in Table 11 (page 46)?.				
Step 3C – Analyze of the Mobility of Each Deforestation and Forest Degradation Driver				
- For every driver of deforestation, report the main mode of transportation used by the main agent of deforestation of that driver: - Present a table of the average speed by which each identified mode of transportation can cross each of the LULC classes and forest strata and road categories, - Drivers that are less geographically constrained will still be confined to a —sphere of influence.	2, 12, 13, 17, 18, 19	The main mode of transportation was identified for the drivers listed. The model used the information of the mobility of each deforestation driver to estimate the leakage.	☒	☒
Step 3D – Identify the Quantitative Driving Variables of Deforestation and Forest Degradation				
For each identified driver, provide: 1. Non-spatial driving variables that explain the quantity of land cover change (Rural wages, Prices and demand of agricultural products, Costs of agricultural inputs, Population density). 2. Were the variables that potentially explain the location of deforestation and forest degradation selected?	2, 19	Non-spatial driver variables such as economic activity, rural wages, migration, fuelwood demand and population growth were described. No distinction is made for each identified driver. A list of spatial drivers explaining the location of Land Use/Land Cover (LULC) change is provided. The non-spatial variables were analyzed for modeling the location of deforestation. The selection of the variables was analyzed based on the characteristics of each agent and drivers of deforestation.	☒	☒
Are all reporting requirements included to the PD? - Name of the agent or agent group (there may be multiple agents) causing the deforestation. - Brief description of the main social, economic, cultural and other relevant features of each agent, - Brief assessment of the most likely development of the population size of the identified agents in the reference region and project area. - Estimate of the relative contribution of this driver to the overall deforestation quantity - Mobility of the agents - For every deforestation driver, list the non-spatial and spatial quantitative driving variables for each deforestation driver	2, 19	Deforestation agents are identified: migrants, private companies, local communities, hunters, soldiers, and other non-local. Clarification Request No 30 Provide information on the relevant features of each agent of deforestation	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
Step 4 – Determine Emission Factors for All Included Transitions: Have the following reporting requirements been provided?				
Rationale on which LULC classes and forest strata are selected for quantification.	2, 95	Evergreen and mixed and deciduous forest classes and bare land were selected for quantification.	☒	☒
Table with existing data in carbon stock density measurements in the literature, including the methodology, number of sampling plots, whether all species were included, minimum DBH used, and region in which the samples were taken.	2, 11, 95	A table with an overview of the relevant available existing carbon density data for the forest types available in the project area is included in the PD. The values from the literature are close or below to the values found in the biomass inventory, thus considered conservative.	☒	☒
Table with baseline net annual increments due to natural regeneration rates. Report the same information on the data sources as for the previous PD requirement	2, 6	A table with the increments of carbon stocks under the baseline scenario was included.	☒	☒
Sample framework for collecting field data, including size, layout, and location.	2, 11, 16, 14, 50, 121	Permanent sample plots were installed inside the project area and non-permanent sample plots outside the project area. For ANR areas, permanent sample plots will also be installed. The size and layout of the plots was selected to be compatible with the Cambodian forest inventory system. Standard Operations Procedure for biomass inventories was provided. The sample plots were selected randomly. Relocation of plots was allowed in particular cases (land mines, rivers, etc) and this was recorded. Re-measurement was conducted for 6 or 7 plots. During the field assessment it was found that not all procedures as described in the QC/QA were followed. Clarification Request No 31 - Update description of Cambodia UNFCCC forest definition. - Ensure that QC/QA procedures for the sampling framework are followed as described. - Ensure that biomass measured per sample plot is correctly determined in line with precision requirements of the methodology and VCS	CR	☒
Spreadsheet containing the calculations of carbon stock densities.	2, 6	An excel spreadsheet containing the calculations of carbon stocks was provided.	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		<u>Clarification Request No 32</u> - Ensure consistency in the description of the strata “mixed vs mixed deciduous and deciduous” in the excel spreadsheet and PD. - Provide the corresponding calculations on carbon stocks under the baseline scenario.		
Statistical distributions (histograms) of all carbon stock measurements per LULC class and forest type.	2, 6	A histogram of all carbon stock measurements is included to the PD as a result of the inventory.	☒	☒
Table with descriptive statistics on carbon stock densities per predicted LULC class or forest stratum, including: Average, Standard deviation, Number of observations, Standard error around the mean, Half-width of the 95%-confidence interval around the mean.	2, 6	The corresponding table with descriptive statistics on carbon stock densities per predicted LULC class or forest stratum is included to the PD.	☒	☒
Look-up table with emission factors per LULC class and forest type, similar to Table 12 (page 57).	2, 6	A table with emission factors per LULC class and forest type is included to the PD. The sampling of the non-forest class was randomly conducted to ensure that there was no underestimation of baseline stocks under the non-forest class.	☒	☒
Step 5 – Estimate Ex-ante Land Transition Rates under the Baseline Scenario: Have the following reporting requirements been provided?				
Description of the approach followed to calculate the regression parameters in the calculation of the future deforestation and degradation rates. Justify the omission of outliers or the assumption of a break in the historical deforestation trend (if relevant). (see Step 5A)	2, 6	The deforestation rates calculated in the analysis corresponds to 2.9% loss of forest cover per year based on satellite imagery interpretation. The assumed deforestation rate is constant therefore the increase of deforestation in 2006 does not affect conservativeness. The “scarcity factor” is included in the model used to determine deforestation.	☒	☒
Table with all relevant LULC class or forest stratum specific regeneration and forest cover increase rates, averaged over every pair of subsequent images. (see Step 5B)	2, 6, 120	The table with all relevant LULC class or forest stratum specific regeneration and forest cover increase rates is included to the PD.	☒	☒
Validation report of the logistic regression models with independent data. (see Step 5C)	2, 6, 120	An assessment of the logistic regression models is provided.	☒	☒
A table with all land transitions under the baseline scenario	2, 6,	A summary table with all land transitions under the baseline scenario is	☒	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
separately for the area with and without ANR for every year through the crediting period according to the procedure in step 5D. For an example of such a table, see Table 17 in section II.4.1).	120	provided separately for areas with ANR and without ANR activities.		
3.2 Project Emissions / Removals				
Step 6 – Identify Project Activities and Estimate Total Deforestation and Degradation Rates under the Project Scenario: Have the following reporting requirements been provided?				
For every planned project activity: a) Description of the activity, including which agents and drivers of deforestation are targeted. b) Map of the planned location of the activities (if relevant). c) Analysis of the labor/hours needed for the activity and who will implement. d) Indication on how the involvement of all stakeholders and community levels will be ensured e) All risks involved in why the project activities may fail. f) Estimate of the adoption rate per year of the project activity. g) A summary table of the effectiveness for every action and driver. This quantity describes the impact of a project action on a targeted driver. Include a justification of the selection of an effectiveness factor based on data from the literature, pilot studies, or social assessments. Specify all underlying assumptions.	2, 6, 28, 38 – 47, 130, 131	a) A description of the project activities per each deforestation driver is provided. These include forest protection activities, land use planning, fuel-efficient stoves distribution, fire prevention, etc. b) No maps were provided c) A yearly chronogram of activities is provided, no indication on the responsibilities for implementation. d) No information on risks of failure e) Description on the involvement of communities is included f) No information on the adoption rate was found g) A table with the summary of the effectiveness factor is provided. Detailed information on the responsibilities for the project implementation is included into the calculations spreadsheet. NTPF harvesting will create small enterprises and generate an effect on the income. The ANR activities will generate employment. The harvesting will be allowed for domestic purposes. Clarification Request No 33 • Provide information on the responsibilities for the project implementation • Provide information on risk failure of project implementation • Provide information on the adoption rate	CR	☒
Table of RelativeProjectImpactDF and RelativeProjectImpactDG for every year of the crediting period. This quantity is the relative reduction in the total amount of degradation and deforestation for every year of the crediting period.	2	Degradation is not included. No information on the relative project impact is found.	☒	☒

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VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
Table with the estimated total deforestation rate in the project area and the estimated total forest degradation rate in the project area	2, 6	A histogram is provided of deforestation decrease under the project scenario is provided.	☒	☒
Step 7 – Calculate Forest Strata-Specific Deforestation and Degradation Rates: Have the following reporting requirements been provided?				
Land transition table under the project scenario for the project area for every year of the next crediting period (see Table 17 in section II.4.1).	2, 6	A table summarizing the projected land use change in the project area under the baseline scenario is included to the PD.	☒	☒
Step 8 – Estimate GHG Emissions Sources: Have the following reporting requirements been provided?				
List of the assumptions, data sources, and other information relevant to the calculation of the emissions for every source.	2, 6	Calculations were provided in an excel spreadsheet. Assumptions and rationale of the calculations are included. <u>Clarification Request No 34</u> Provide data sources used for the calculations of emissions of the project scenario.	CR	☒
Summary of all individual emissions due to project activities	2	A table with summary of emissions due to project activity was included to the calculations file.	☒	☒
Step 9 – Estimate the Net GHG Sequestration from Assisted Natural Regeneration Activities: Have the following reporting requirements been provided?				
Digital boundaries of every individual stratum where ANR activities are planned, separately for every discrete project parcel. All necessary meta-data to correctly display the files must be included. The digital boundaries must remain available for the duration of the project's crediting period.	2, 5	GIS files of the boundaries of parcels under ANR activities were provided. <u>Corrective Action Request No 6.</u> Include only eligibility areas for ANR following the methodology requirements (currently non-forest areas were also included) (see <i>a/so</i> CAR 4)	CAR	☒
Estimates of biomass increases due to assisted natural regeneration activities based on literature data. Include the source, the methodology used, whether all species were included, the minimal DBH of measured trees, and the region in which the biomass increases were measured. This quantity may be reported separately for the different forest strata where	2, 6	<u>Clarification Request No 35</u> • Provide sources of data used for calculations • Provide evidence on the assumption: The baseline aboveground biomass growth rate for these areas is assumed be similar to natural regeneration rate	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
relevant.		Source applied for Root to shoot ratio (0.29)		
Summary table of the GHG benefits from assisted natural regeneration activities and the baseline GHG changes on the land on which assisted natural regeneration activities are proposed	2, 6	A summary table is provided in the spreadsheet file. See CR and CAR above	CR	☑
Summary of the net GHG benefits from ANR without taking emission sources into account for every year of the crediting period in the overview table	2, 6	A summary table is provided in the spreadsheet file. See CR and CAR above	CR	☑
List of the assumptions, data sources, and other information relevant to the calculation of the emissions for every source related to assisted natural regeneration.	2, 6	A list of the assumptions is included in the spreadsheet file. See CR and CAR above	CR	☑
Summary table of emissions Ebiomassloss, Efire, Efertilization for every year of the crediting period	2	Emissions were assumed to be zero. A summary table is provided.	☑	☑
Summary of the sum of the GHG emissions sources related to assisted natural regeneration for every year of the crediting period in the appropriate column of table 18	2	No emissions are expected due to ANR activities.	☑	☑
3.3 Leakage				
Step 10 – Estimate Leakage from Geographically Constrained Drivers: Have the following reporting requirements been provided?				
Justification and assumptions made to obtain the leakage cancellation rates for every geographically constrained deforestation driver.	2, 18, 19	Leakage cancellation rates were obtained through a PRA. <u>Clarification Request No 36</u> Provide evidence on the assumptions for defining the leakage cancellation rates. (see also CR 39)	CR	☑
Summarizing table of the leakage cancellation rates for each deforestation driver.	2	A table of the leakage cancellation rates for each deforestation driver is provided. See CR above	CR	☑
Table with RelativeLeakageImpactDF and RelativeLeakageImpactDG, the total relative impact of leakage	2	No information was found on the total relative impact of leakage on the decrease in GHG emissions due to project activities	CR	☑

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on the decrease in GHG emissions due to project activities for deforestation and forest degradation respectively, together with and, for every year of the crediting period.		<u>Clarification Request No 37</u> Provide the table on the total relative impact of leakage on the decrease in GHG emissions due to project activities		
Decision criteria, data sources, field information, and maps used to demarcate the leakage belt	2	<u>Clarification Request No 38</u> Provide evidence on the assumptions for defining the leakage belt	CR	☑
A map of the leakage area with a clear indication which areas were excluded due to inaccessibility.	2	A map of the leakage area is provided in the PD.	☑	☑
Table with DprojectArea.baselineScenarioDF, DprojectArea.baselineScenarioDG, Dleakageare.projectScenarioDF and Dleakageare.projectScenarioDG the absolute deforestation and forest degradation rates for the project and leakage areas under baseline and project scenarios for every year of the crediting period.	2, 6	A histogram is presented with the summary of the anticipated (gross) decrease in deforestation rate in the project areas, the cancellation of a part of this avoided deforestation through activity-shifting leakage, and the net project gains.	☑	☑
Table with all land transitions for the leakage area under the baseline and project scenarios for every year of the next baseline validation period, use Table 17 in section II.4.1 as an example.	2	A table with land transitions is provided.	☑	☑
Justification and assumptions made to obtain the leakage cancellation rates for every geographically unconstrained deforestation driver.	2	Justification and assumptions were included and reviewed during the onsite visit.	☑	☑
Step 11 – Estimate Leakage from Geographically Unconstrained Drivers				
Table with GHGOtherLeakageSources for every year of the crediting period	2	Leakage from Geographically Unconstrained Drivers is defined for land sales, ELCs and timber concessions. <u>Clarification Request No 39</u> Leakage from land sales is caused by migrants and difficult to identify the exact location. Clarify how the leakage cancelation rate can be justified. If no adequate data is available, a conservative approach shall be chosen. Ensure to comply with latest VCS guidance.	CR	☑



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
Step 12 – Estimate Applicability of and Emission sources from Leakage Prevention Activities				
List of the assumptions, data sources, and other information relevant to the calculation of the emissions for sources E_{rice} , $E_{\text{fertilization}}$, and $E_{\text{livestock}}$ from leakage prevention measures.	2	Clarification Request No 40 Provide evidence on the assumptions, data sources, and other information relevant to the calculation of the emissions for sources E_{rice} , $E_{\text{fertilization}}$, and $E_{\text{livestock}}$ from leakage prevention measures	CR	☒
A report of sources E_{rice} , $E_{\text{fertilization}}$, and $E_{\text{livestock}}$ in the relevant columns of table 18 for every year of the crediting period.	2	No information was found in the PD Clarification Request No 41 Provide a report of emission sources as required by the methodology.	CR	☒
3.4 Net GHG Emission Reductions and Removals				
Step 13 – Ex-ante Estimation of NERs				
GHG benefits from avoided deforestation in the project and leakage area in the overview table	2, 6	Excel spreadsheets with calculations on the GHG benefits from avoided deforestation in the project and leakage areas were provided.	☒	☒
GHG benefits from avoided forest degradation in the project and leakage area in the overview table	2	Avoided degradation was not included in the proposed project activity.	☒	☒
Annual values for GHG _{otherLeakageSources} in the overview table	2, 6	Overview tables were included in the calculations file.	☒	☒
The net GHG benefits from ANR without taking emission sources into account for every year of the crediting period in the overview table	2, 6	The table with calculations of ANR areas is provided. The calculations have to be modified in line with the above findings.		
Table with all emissions for every year of the project duration, their relative contribution, and the cut-off value used to determine which emissions were considered insignificant	2, 6	An overview table of ex-ante estimation of NERs through the project crediting period	☒	☒
A list of all the significant emissions from project and ANR activities in the overview table	2, 6	An overview table of ex-ante estimation of NERs through the project crediting period	☒	☒
Overview table of the total GHG	2, 6	An overview table of ex-ante estimation of NERs through the project crediting period	☒	☒
4. Monitoring				
4.1 Data and Parameters Available at Validation				
Is the complete list of parameter based on the following table included into the VCS PD?	2	The included list of parameters in the PD does not conform to the requirements below. Two parameters are missing Clarification Request No 42	CR	☒



VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		Clarify missing parameters available at validation		
4.2 Data and Parameters Monitored				
Is the complete list of parameter based on the following table included into the VCS PD?	2	Clarification Request No 43 Include missing parameters according to requirements in the methodology.	CR	☑
4.3 Description of the Monitoring Plan				
Is the monitoring plan described?	2	The monitoring plan is described in the PD, it follows the methodology requirements. <i>Note: Clarify with VCS whether the areas deforested under the project scenario have to be monitored and excluded from the eligible project area</i>	☑	☑
Are organizational structure, responsibilities and competencies identified?	2	Competences and organizational structure are identified.	☑	☑
Are methods described for generating, recording, storing, aggregating, collating and reporting data on monitored parameters?	2, 10 - 14	Procedures for data storage and recording are defined.	☑	☑
Are procedures described for handling internal auditing and non-conformities? Are line diagrams used to display the GHG collection and management system?	2	Clarification Request No 44 Provide procedures for handling internal auditing and non-conformities	CR	☑
5. Environmental impact				
Has an environmental impact assessments been carried out with respect to the project?	2, 112	The project aims to protect and restore evergreen and deciduous forest from activities causing deforestation. There is no specific requirement under the current legislation of Cambodia to conduct EIA for this project activity type. <i>See also CCBA PDD and Validation Report for further details</i>	☑	☑
6. Stakeholders comments				
Are relevant outcomes from stakeholder consultations and mechanisms for on-going communication summarized in the PD?	2, 18, 19, 36, 38-46	Relevant stakeholders identified are: Participating communities, Buddhist Monks, Local Government, Civil Society Organizations, Technical Working Group and the Forestry Administration, the Forestry Administration staff, the project design team. Several workshops were organized to ensure good cooperation with the stakeholder. A PRA and household survey was conducted in each of the villages in order to collect information from stakeholders participating in the	☑	☑

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VCS / Methodological Requirements	Ref.	COMMENTS	Draft Concl	Final Concl
		proposed project activity. <i>See also CCBA PDD and Validation Report for further details</i>		



Table 1.2: Validation Protocol for risk assessment of the project, applying the VCS “AFOLU Non-Permanence Risk Tool”

The number in the table below under “Draft Conclusion” and “Final Conclusion” are the percentage added to the buffer account in line with the VCS “AFOLU Non-Permanence Risk Tool”.

CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
Internal risk				
1. Project Management				
a. Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located.	2	The project is a REDD project. The planting activity is foreseen to take place in the ANR areas with mostly native species (less than 25%).	0	0
b. Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued.	2, 13, 17, 18, 19, 30	The project area is subject to several deforestation drivers including illegal logging, land sales, conversion to cropland, fires, etc. <u>Clarification Request No 45</u> • Provide evidence on enforcement to prevent encroachment by outside actors. • The risk factor shall be discussed in the PD as the risk is applicable to the project conditions.	CR	2
c. Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (ie, any area of required experience is not covered by at least one individual with at least 5 years experience in the area).	2	The management team has the relevant experience in AFOLU and other project related activities. CDA is the institution who will be in charge of the day to day project implementation jointly with the Forest Administration local office. <u>Clarification Request No 46</u> Present in the PD further details on significant experience in all skills necessary to successfully undertake all project activities	CR	0
d. Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area.	2	The management team maintains a presence in the country, in particular with the offices of the FA, CDA, PACT and CFI.	0	0



CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
e. Mitigation: Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (eg, individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs.	2	Terra Global Capital is included in the management team, with experience in design of AFOLU projects. The management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting.	-2	-2
f. Mitigation: Adaptive management plan in place.	2, 27	The work plan is annually revised <u>Clarification Request No 47</u> Provide the adaptive management plan following with the VCS requirements.	CR	0
Total Score Project Management				0
2. Financial Viability				
a. Project cash flow breakeven point is greater than 10 years from the current risk assessment	2, 47, 48	The calculations for cash flow breakeven were discussed onsite and in follow-up call with Terra Global Capital. It was indicated during the onsite visit by PACT and FA that the calculations will be updated. <u>Clarification Request No 48</u> Clarify if the cash flow will be updated for the validation (version submitted Investment Model - v2 - OM JUL 15 2011 for Validation.xlsx), or if the budget and cash flow as submitted is valid and accepted by all partners for validation of the project.	CR	0
b. Project cash flow breakeven point is between 7 and up to 10 years from the current risk assessment	2, 47, 48	See CR above	CR	0
c. Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment	2, 47, 48	It is expected to reach the breakeven point after the 4 th year of the project implementation. See CR above	CR	0
d. Project cash flow breakeven point is less than 4 years from the current risk assessment	2	See CR above	CR	0
e. Project has secured less than 15% of funding needed to	2, 47,	The project has not yet secured the funding needed to cover the total cash	3	3



CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
cover the total cash out before the project reaches breakeven	48	up to the 4 th year of the project implementation which is the date when the project reaches breakeven. Thus the risk rating is applied.		
f. Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven	2	N/A	0	0
g. Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven	2	N/A	0	0
h. Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven	2	N/A	0	0
<i>i. Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven</i>	2	Mitigation strategy not sustained.	0	0
Total Score Financial Viability				3
3. Opportunity Cost				
a. NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated	2	There was no calculation provided for the NPV as it is indicated that the majority of baseline activities over the length of the project crediting period are subsistence-driven. <u>Clarification Request No 49</u> Provide evidence if the majority of baseline activities over the length of the project crediting period are subsistence-driven. Provide a NPV analysis if this is not the case	CR	0
b. NPV from the most profitable alternative land use activity is expected to be between 50% and up to 100% more than from project activities	2	See CR above	CR	0
c. NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than	2	See CR above	CR	0

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CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
from project activities				
d. NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated	2	See CR above	CR	0
e. NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity	2	See CR above	CR	0
f. NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity	2	See CR above	CR	0
g. Mitigation: Project proponent is a non-profit organization	2, 6	The project proponents include a governmental organization (Cambodian Forest Administration) and a private company.	0	0
h. Mitigation: Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over the length of the project crediting period	2	The mitigation strategy was not sustained.	0	0
i. Mitigation: Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over at least 100 years	2	The mitigation strategy was not sustained.	0	0
Total Score Opportunity cost				0
4. Project Longevity				
Without legal agreement or requirement to continue the management practice	2	The CFMU is defined for 15 year period renewable. The project is defined for a 30 year renewable crediting period. An agreement is established between the FA and TGC for the project implementation, however the CFMU can also be cancelled if practices do not follow the management plan	CR	0



CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
		<u>Clarification Request No 50</u> Clarify and sustain whether there is a legal agreement or requirement to continue the management practice after the project lifetime		
With legal agreement or requirement to continue the management practice	2	See CR above	CR	15
Total Score Project Longevity			-	15
Summary Internal risk				
Project Management				0
Financial Viability				3
Opportunity Cost				0
Project Longevity				15
		Total Internal Risk		18
External risk				
5. Land Tenure				
a. Ownership and resource access/use rights are held by same entity(s)	2, 29 - 31, 112, 125	The land is owned by the State but the use rights are given to the communities as a CFMU.	0	0
b. Ownership and resource access/use rights are held by different entity(s) (eg, land is government owned and the project proponent holds a lease or concession)	2, 29	The land is given to the communities through an agreement renewable, thus the land and resource access/use are held by different entities	2	2
c. In more than 5% of the project area, there exist disputes over land tenure or ownership	2	No information is provided in the risk assessment report. <u>Clarification Request No 51</u> Provide evidence regarding any disputes over land tenure or ownership.	CR	0
d. There exist disputes over access/use rights (or overlapping rights)	2	No information is provided in the risk assessment report. <u>Clarification Request No 52</u>	CR	0

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CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
		Provide evidence on disputes over access/use rights (or overlapping rights)		
e. Mitigation: Project area is protected by legally binding commitment (eg, a conservation easement or protected area) to continue management practices that protect carbon stocks over the length of the project crediting period	2	The mitigation strategy was not sustained.	0	0
f. Mitigation: Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims	2	The mitigation strategy was not sustained.	0	-2
Total Score Land Tenure				0
6. Community Engagement				
Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted	2, 34	No households are found within the project area. In the communities, around 80% of the total population are members of the CF, and thus were informed o the project and consulted during the PRA exercises.	0	0
Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted	2	See above, more than 50% have been consulted through their representatives in each CF committee.	0	0
Mitigation: The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area	2	Covered by the CCB assessment. The project is expected to generate positive impacts on social and economic well being of the local communities.	-5	-5
Total Score Community Engagement			-	-5
7. Political Risk				
Governance score of less than -0.79	2, 136	The Governance score was indicated in the risk assessment document as - 0.84. <u>Clarification Request No 53</u> Provide details on the governance score, update the number in line with VCS requirements for calculations	CR	0



CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
		<i>Note: The governance score shall be calculated from the mean of Governance Scores across the <u>six</u> indicators of the World Bank Institute's Worldwide Governance Indicators (WGI), averaged over the <u>most recent five years</u> of available data).</i>		
Governance score of -0.79 to less than -0.32	2	See CR above	CR	4
Governance score of -0.32 to less than 0.19	2	See CR above	CR	0
Governance score of 0.19 to less than 0.82	2	See CR above	CR	0
Governance score of 0.82 or higher	2	See CR above	CR	0
Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3 of VCS AFOLU Non-Permanence Risk Tool v. 3	2, 113	Cambodia is implementing Readiness plan.	-2	-2
Total Score Political Risk			-	2
Summary External risk				
Land Tenure				0
Community Engagement				-5
Political Risk				2
		Total External Risk	-	0
Natural risk				
Are all natural risk factors applicable to the project been assessed using the Likelihood and significance (LS) and mitigation (M) (if any) approach? (See Table 10 of VCS Non-Permanence tool v.3)	2	The Likelihood and significance (LS) and mitigation (M) (if any) approach was applied for all natural risk factors applicable to the project. Major risk identified is fire. Further information on significance and likelihood is needed (see CR below), At the time of validation on mitigation measures were implemented and the PPs did not have a proven history of containing fire. Pest and diseases is also indicated as risk in the risk assessment document by the PP. Other risks were discussed with the audit team during the onsite visit but	CR	-



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CHECKLIST QUESTION	Ref.	COMMENTS	Draft Concl	Final Concl
		not considered significant. Clarification Request No 54 Provide references/evidence on each of the natural risks and the assumptions for their calculation to the audit team.		
Has evidence been provided for assessing the risk of fire occurring in the project area?	2	See CR above	CR	1.25
Has evidence been provided for assessing the risk of incidence of pests and disease attack?	2	See CR above	CR	0.5
Has evidence been provided for assessing the risk of extreme climatic events (e.g. floods, droughts, winds, frost) occurring?	2	See CR above	CR	0
Has evidence been provided for assessing the geological risk (e.g. volcanoes, earthquakes, landslides)?	2	See CR above	CR	0
Are there any other natural risks identified for the project area? Has evidence been provided for assessing these risks?	2	See CR above	CR	0
Summary Natural risk Determined by (LS × M)				
Fire (F)				1.25
Pest and Disease Outbreaks (PD)				0.5
Extreme Weather (W)				0
Geological Risk (G)				0
Other natural risk (ON)				0
		Total Natural Risk		1.75



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Overall Risk Rating

Risk Category	Rating
a) Internal Risk	18
b) External Risk	0
c) Natural Risk	1.75
Overall risk rating (a + b + c)	19.75

Table 3: Unresolved Corrective Action, Clarification Requests, Forward Action Requests

Not applicable



Table 2: Summary of Corrective Action and Clarification Requests

(VCS Project Validation: Reduced emissions from deforestation and degradation in community forests, Oddar Meanchey, Cambodia, applying VCS methodology VM0006)

Clarifications and Corrective Action Requests by Validation Team	PD section	Summary of Responses	Validation Team Conclusion
Clarification Request No 1 Provide the amount of GHG emission reductions expected in the summary. Clarify the number of villages involves, description indicates 58 while page 19 indicates 57 villages	1.1	Project Proponent The total number of villages included in the project is 58. The PD has been corrected to reflect that there are 58 villages, not 57. Audit Team To total amount of the GHG emission reductions are included to the summary . The number of villages involved in the project was clarified to be 58.	☑
Clarification Request No 2 Clarify if the CFs are actual project proponents	1.4	Project Proponent Clarified in VCS PD w/ comment: The only project proponents are the FA and TGC. The FA has determined that they have the original rights to the carbon credits from the project, not the communities. TGC is a project proponent by virtue of being granted a percentage of the credits from the project. Proof of right and project proponent representations for both the FA and TGC will be provided to the VCS upon registration Audit Team It was further clarified that the CFs are not included as PPs. Proof of right and project proponent representation were submitted to the audit team on 18 July 2012. Request closed	☑
Clarification Request No 3 Provide evidence on project start date	1.5	Project Proponent Project start date has been changed to February 28th, 2008 in the VCS PD, which is the date of the agreement between TWGF&E and CFI . The agreement has been added to the document repository Audit Team Following the VCS 3.0, the project start date of an AFOLU project shall be the date on which activities that lead to the generation of GHG emission reductions. Clarify how the provided evidence complies with the definition of project	☑



		start date. Project Proponent Added additional clarification to section 1.5 on project start date. The signing of this agreement satisfies the VCS definition of start date as this agreement was by necessity the first activity which led to the implementation of project activities. This is consistent with the VCS start date definition used for the VCS-validated REDD Project #605- Protection of a Tasmanian native forest - Project 1 - REDD Forests Pilot Audit Team Further explanation on the project start date was provided as requested.	
Corrective Action Request No 1. Specify exact date of the start and end of crediting period Clarify if it is a fixed or renewable crediting period	1.6	Project Proponent The exact start and end of the crediting period has been added to the VCS PD. The start date is February 28, 2008 and the end date is February 28, 2037. The crediting period has been clarified as fixed in the VCS PD Audit Team The project start date and end of crediting period was specified as requested. It was also clarified ti be a fixed crediting period.	☒
Corrective Action Request No 2. Include the lifetime of the project activities indicated above	1.8	Project Proponent A table listing the lifetime of each of the project activities has been added to the VCS PD. The lifetime of the project activities is specified in the project implementation workplan. Audit Team A table of the lifetime of the project activities was included as requested.	☒
Corrective Action Request No 3. Re-check potential displacement of CF boundaries in Thai border (inconsistencies between GIS data provided by PP and Google Earth data). Check overlap between CF boundaries in GIS data	1.9	Project Proponent Offsets were identified and corrected. Resolved in the new shapefile. All non forest areas were removed from project boundary Audit Team Provide the corresponding GIS files of the project boundary in order to ensure that CAR was met	☒



Include only eligible areas into the project boundary (currently non-forest areas are also included)		Project Proponent: GIS files were supplied: "CAR 3 - project_parcel_wgs84_utm48n.zip" Audit Team The PD describes a total of 64,318 hectares (discounting the non-forest area it is 57,243 ha), however the area calculated in the shapefiles includes 56,050ha. Clarify the difference between the project area in the GIS files and the PD description (compare with calculations too). Project Proponent: Table 5 in Section 1.9 was obsolete. The table has been updated to include project parcel areas (2008 forested Community Forest Areas). Hectare sums now match the shapefile values. Calculations used the 56,050 ha value. Audit Team The GIS files and the PD description were updated to ensure consistency.	
Clarification Request No 4 Provide evidence on the accuracy/reliability for determining the relative importance of each driver of deforestation. Provide sources of information for the non-spatial variables driving deforestation	1.10	Project Proponent In the "1. Gross Emission Reductions" workbook, sheet "0. Drivers and parameters", we referred to several independent datasets to confirm the reliability of the relative importance of each driver of deforestation. Audit Team Sources of input parameters of the drivers of deforestation are indicated in the calculation files. The sources for the non-spatial drivers were also provided and referenced in the PD Clarify extent of areas burnt by hunters and for clearing the land (the description indicates lower extent of area burnt by hunters while figures show the opposite) Project Proponent: This was a mistake; The table represents the correct values and the description was not updated according to the table. The description in section 3.3.2 above the table was changed to: It was found that the conversion of forest to cropland by local communities was the most important contributor to GHG emissions. The use of fires for clearing forests was the second most important contributor to GHG emissions in the project area, followed by forest clearing for land sales and conversion of forest to settlements. The contributions of timber	☒

[illegible]



		are in line with the mentioned law. The Sub decree on CF Management was also summarized in the PD as requested. Compliance with the project activity and the Sub decree was demonstrated during the onsite visit.	
Clarification Request No 6 Clarify the missing agreements (12 instead of 13) Clarify and provide evidence on the transparent communication on the benefit sharing with the local communities involved.	1.12	Project Proponent Awaiting signed agreement back from the FA clarifying that there are 13 communities involved in the project. This document will be added to the document repository once we have received it. Benefits sharing workshop occurred on 14 October. Look at email from Donal (10/18). Have a PPT in both english and Khmer which discusses the benefits sharing, have added presentation and meeting minutes to document repository under Community Consultations- "Community Consultation Benefits Sharing (English) October 14.ppx" & "Minutes for BS Consultation Meeting in OM.pdf" Audit Team Missing agreement remains to be provided. Evidence on further workshops conducted with local communities were provided as evidence of communications of how benefits will be distributed. It was also indicated that the budget of the project will be public available. Monitoring of the community benefits is further discussed under the CCB validation documents. Project Proponent: This agreement has been added to the document repository under the Agreements section Audit Team Agreements with all the communities involved were provided as requested	☒
Clarification Request No 7 As required by the standard, briefly describe the items to which such sensitive information pertains.	1.13	Project Proponent A description of each piece of commercially sensitive information has been added to the VCS PD (section 1.12.3). Audit Team In compliance with the standard, a description of the items to which such sensitive information pertains was included to the PD.	☒



Corrective Action Request No 4. Provide evidence on the eligibility of lands under ANR. (see also CAR 6) Clarify which forest definition was applied for the analysis of forest cover/update with Cambodia UNFCCC forest definition Provide evidence on the analysis conducted for the demonstration of land eligibility (satellite imagery, report on the assessment, etc). Exclude non-eligible area	2.2	Project Proponent ANR SOP was created that operationalizes the definition of forest degradation set forward by the VCS. Please note that the area that is currently delineated for ANR is subject to change. The boundaries were mapped together with the communities on land that was recently degraded. Through a GIS analysis, we have excluded all land that was not forest at the beginning of the crediting period. In addition, we have developed an ANR SOP that specifies how to map out the ANR area in detail so that ANR is only conducted on areas that meet the requirements in the methodology. More specifically, we have tried to operationalize the requirement that ANR has to be done on degraded land that is still forest through concrete indicators of degradation, such as girdled trees, presence of agriculture, evidence of recent severe forest fires. Please have a look at the ANR SOP to validate how we operationalized the definition of degradation. The forest definition used in the PD is the UNFCCC foest definition for Cambodia. Clarification has been added to the VCS PD on which forest definition is used. As indicated before, the area that was submitted to the auditor were mapped out by communities who were asked to identify land that was degraded and that was a good candidate for regeneration. This mapping is preliminary since funds are lacking to do a detailed mapping and planning of the area together with the communities. With the ANR SOP that was developed, we will verify the preliminary ANR areas and ensure that they are effectively degraded. Note that the methodology allows to make changes to the location and extent of the ANR area up to the first verification. Area that was non-forest was excluded from the ANR area. However, the ANR area will be demarcated in more detail once sufficients funds are available to do a full anlvsis of the degraded nature of forests.	☒
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Audit Team

The definition of degraded forest used is scattered patches of degraded forest with 10 to 20% crown cover and a biomass density of less than 30 Mg DM ha⁻¹.

The ANR SOP indicated in the reply was not found among the new documentation provided.

According to UNFCCC the forest definition for Cambodia is defined as containing at least 10% canopy cover, a tree height of 5 m, and a minimal area of 0.5 ha. It was clarified that this is the definition applied.

Evidence on the analysis to exclude non-eligible areas was not found among the documentation provided. Furthermore, the extent of the ANR areas from the previous version of the PD and the new version remains the same.

Project Proponent:

We supplied the new ANR shapefile from which the forest area was excluded to the validator as evidence on the analysis to exclude non-eligible areas. In the previous version, the extent (size) of the ANR area remained the same because we will re-map the ANR areas before first verification in a much more detailed manner until we get the ANR size for which there is budget. However, since this is not mapped yet, we reduced the size of the ANR area to what is in the shapefile so that the shapefile and the PD are consistent. The SOP for ANR is also supplied to the auditors.

Audit Team

The ANR SOP was provided as requested. It contains guidance on the selection of the ANR areas and management techniques for promoting growth.

The area of the ANR shapefile includes 5,351 ha while the description indicates 4,485ha. Clarify the difference in the area of the shapefiles and the PD (compare calculations too)

Project Proponent:

The ANR shapefile attribute table contained legacy hectare values (from prior to removal of non-forest pixels). The hectare values have been updated in the attribute table, and the new shapefile correctly sums to



		4,485 ha. The new file is anr_wgs84_utm48n_forest_v4.shp (CAR_5_anr_wgs84_utm48n_forest_v4.zip) Audit Team The ANR area was clarified and values of the area included in the GIS files were updated.	
Clarification Request No 8 Provide evidence on how was the mosaic typology verified using the criteria defined by the VCS for mosaic deforestation	2,2	Project Proponent See applicability criteria 2. The following was added: <i>The average distance to area that was deforested within 5 years prior to the start of the crediting period is 401m. Such a small average indicates that most deforestation occurs in a patchwork manner in which the patches of deforestation are interspersed with forested land. The patchy nature of the deforestation near the project area can be easily confirmed by observing gaps in the project area. In addition, it is certain that most areas of the forest are accessible to human populations since a GIS analysis revealed the average distance from any point in the forest to a road or a track was only 1.29km. Human settlements are spread across the landscape. More specifically, a GIS analysis indicated that the average distance from any point in the forest to a village is 6.65km.</i> Audit Team Further explanation was provided in order to verify the mosaic typology of the landscape as defined by the VCS. The patchy distribution of the forest was analysed as a function of the distance to human settlements and distance between patches.	☒
Clarification Request No 9 Include information on the agents of deforestation as indicated in table 4 of page 26. Accuracy assessment of remote sensing analysis still need to be discussed in depth with audit team	2.2	Project Proponent A description of each agent of deforestation has been added to the VCS PD Section 1.10.1.3. One agent of deforestation has been removed- "Other Non-Local", as it was deemed to be too similar to soldiers and private companies. Audit Team A description of the agents of deforestation was included to the VCS PD as required. The accuracy assessment of the remote sensing analysis was further discussed and evidence on the procedure followed was provided to the audit team.	☒

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Clarification Request No 10 Provide information and evidence on the insignificance of the long-lived wood products pool.	2.2	Project Proponent This was added to Section 3.13.1 Step 13A – Estimate carbon in long-lived wood products. Audit Team The assessment of the insignificance of the long-lived wood products pool was added to the VCS PD following the methodology requirements.	☒
Clarification Request No 11 Provide the corresponding evidence sustaining the conditions for neglecting above ground non-tree living biomass as a carbon pool.	2.2	Project Proponent Applicability criterion 12 was re-worded and evidence was provided on omitting the aboveground non-tree live pool. Audit Team The CR corresponds to applicability criterion 13 (revise ordering of applicability criteria in the PD). Evidence sustaining the conditions for neglecting above ground non-tree living biomass as a carbon pool was not found among the documentation provided Project Proponent: Applicability criteria 12 and 13 were reordered. We added a justification for neglecting the AG non-tree living biomass. The following is a fragment: "Kiyono et al. (2010) reported values for aboveground non-tree biomass as well as aboveground tree biomass in Deciduous and Evergreen forests of Cambodia. These authors calculated a non-tree to tree biomass ratio of about 7% for both deciduous (i.e., 7.9/268.2) and evergreen (i.e., and 26.1/413.6). Applying these percentages to our biomass stocks (Table 37) yields average aboveground non-tree biomass values of 3.8 and 8.8 Mg C ha-1. The aboveground biomass of rice cropping systems – the dominant cropping type – can be calculated as the average yield divided by the harvest index. Assuming a harvest index of 0.5 (FAO, 2000a) and a yield of 1.7 Mg DM ha-1, the aboveground biomass of rice cropping systems in Cambodia is estimated to be 1.7 Mg C ha-1. " Audit Team Evidence sustaining the conditions for neglecting above non-tree living biomass as a carbon pool were provided as requested.	☒
Corrective Action Request No 5. Identify realistic and credible land-use alternative land use scenario as required by the tool.	2.5	Project Proponent Have revised section VCS PD Section 2.5.1.1 to more clearly identify the alternative land-use scenarios.	



Discuss re-growth of deforested land as an alternative land use scenario and provide respective evidence		Have added clarification to VCS PD Section 2.5.1.1 to elaborate on the alternative land-use scenario of regeneration / re-growth of degraded areas. Audit Team Provide the corresponding evidence that under a without-project scenario, the areas where regrowth occurs will remain in a low-carbon state and will be subject to on-going degradation from the identified drivers of deforestation Project Proponent: See CR 24. The effective regeneration rate (measured) is very small, which should count as sufficient evidence that areas where regrowth occurs will remain in a low-carbon state. Audit Team An analysis of the regeneration rate based on satellite images was provided as evidence sustaining that under a without-project scenario, the areas where regrowth occurs will remain in a low-carbon state and will be subject to on-going degradation from the identified drivers of deforestation	☒
Clarification Request No 12 Provide evidence on the financial barrier Provide evidence on lack of law enforcement in illegal land use activities (i.e. illegal logging).	2.5	Project Proponent Evidence on financial barrier added to VCS PD Have added language to VCS PD Section 2.5.1.2 related to the difficulties in enforcing against illegal logging Have added a report ("DA Cantonment Report on Forest Law Enforcement") to the document repository related to enforcement against illegal land-use activities under the category "Other". Audit Team Further description on the financial barrier was included to the PD, however evidence on the financial barrier was not found among the documents provided. A description on lack of enforcement was included to the PD and reference to the DA Cantonment Report on Forest Law Enforcement was provided as evidence. Project Proponent: The primary evidence for the financial barrier is now stated clearly in the PD (see below). As part of the FA's registration representation, the PP certifies that the statements regarding the financial barriers are true. "The project faces a number of barriers that prevent its implementation without the sale of carbon. Foremost, the project faces a financial barrier to	☒



		implementation due to the fact that project produces no other financial benefits other than carbon sales. A limited amount of donor funding from DANIDA was secured in 2008, to begin the project actions that reduce deforestation, and cover initial activities for less than a year. Since then the project has not received any additional funding for implementation and thus has been required to postpone many of the planned project actions that will reduce deforestation in the project area, until such time as upfront payments for future carbon sales can be secured. Only when funds are secured from carbon sales will the project actions, training, capacity development, workshops, and technical assistance to support the ongoing monitoring of carbon stocks to ensure project activities are continued for the planned duration of the project. The “Project Costs” as listed in the Project Financials under 2011 represent the cost for activities that would have been implemented each year starting in 2008 if the project had funding to support these activities.” Audit Team Evidence on the financial barrier was provided. It is demonstrated that the project can only be carried out from external sources of funding. Previous activities were implementing from donor funding sources.	
Clarification Request No 13 Determine which land use scenarios identified in the sub-step 1b are prevented by at least one of the barriers listed in sub-step 3a (sub-step 3b)	2.5	Audit Team No reply from PPs. CR remains open Project Proponent: Added clarification to Section 2.5.2.2 about Sub-step 3b Audit Team The mosaic typology of the project defines several land use scenarios. In the barrier analysis the implementation of the project activity without being registered as a VCS project activity is also discussed. The continuation of the pre-project activities are not prevented by the identified barriers.	☒
Clarification Request No 14	2.5	Project Proponent	

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Demonstrate that alternative land use scenarios are not prevented by the identified barriers		Added new section to address this in VCS Section 2.5.2: Sub-step 3b: Show that the identified barriers would not prevent the implementation of at least one of the alternative land-use scenario None of the barriers identified in Sub-step 3a prevent the implementation of the alternative land use scenario. Rather, these barriers promote continued deforestation and degradation in the project area and serve to reinforce the alternative land use scenario. The financial barrier prevents the implementation of project activities to counteract the drivers of deforestation and degradation present in the project area, allowing mosaic-pattern deforestation to continue unmitigated. The additional barriers identified in sub-step 3a do not in any way prevent the implementation of the identified alternative land use scenario. Audit Team Added text further clarifies that alternative land use scenarios (continuation of deforestation) are not prevented by the identified barriers.	☒
Clarification Request No 15 List all similar activities in the region (including other REDD projects, and other CF areas) Provide documented evidence and quantitative information of the similar activities.	2.5	Project Proponent At the time of validation, there are no known VCS REDD project activities being implemented in Cambodia. The Oddar Meanchey REDD project is expected to be the first project of its kind to be implemented in Cambodia. There are currently 57 CF areas outside of Oddar Meanchey, and therefore not included in the REDD project; 12 located in Banteay Meanchey province, 11 in Preah Vihear province and 34 in Siem Reap province. It may be possible in the future for these CF areas and other future CF areas to be developed as a REDD project. A map of these CF areas has been added to the VCS PD in section 2.5.3 The locations of the other CF areas in Cambodia have been provided in the map included in the VCS PD section 2.5.3 There are no other activities similar to the proposed VCS project activity currently being developed in Cambodia Audit Team A review of the VCS and CCB Standards databases of registered projects	☒

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Provide an analysis on similar activities to the proposed VCS AFOLU project activity been implemented or currently underway.		indicates that there are no similar activities in the region. The project activities are in most cases similar to the ones conducted in other CF areas, however the lack of funding to conduct such activities is the major barrier for its implementation.	
Clarification Request No 16 The step-wise approach shall be followed as required by the methodology.	3.1	Audit Team step-wise approach was followed as required by the methodology.	☒
Corrective Action Request No 6. Update the boundary of the reference region to coincide with natural, geopolitical or watershed boundaries The exclusive reference region shall exclude the leakage belt. Ensure to exclude all protected areas from the reference region.	3.1	Project Proponent Completed following the methodology requirement. The following was added to the VCS PD (Section 3.1.3, Step 1C): All protected areas were excluded from the reference region. The protected areas included Tthe Banteay Chhmar National Protected Area (IUCN Category IV), and the Kulen Promtep Protected Area (IUCN Category V), and Phnom Kulen National Park (IUCN Category II). The source of the protected areas was received from the Ministry of Environment. Audit Team The boundary pf the reference region was modified according to the methodology requirements. Protected areas were excluded as requested.	☒
Clarification Request No 17 Include information on the temporary boundaries of the project	3,1	Project Proponent The temporal boundaries of the project have been added to section 3.1.5 of the VCS PD, and are as follows: • Historical reference period: November 17, 1990 – June 9, 2007 • Project crediting period: 30 years (February 28 2008 – February 28 2037) • Verification frequency: 2 years • Frequency of Baseline update: 10 years Audit Team Information on temporal boundaries to section 3.1.4 as requested.	☒



Clarification Request No 18 Follow the step-wise approach as required by the methodology. Include the corresponding information in the corresponding steps. Provide the information reported on the employed remote sensing and other spatial data for assessing deforestation and forest degradation.	3,1	Project Proponent see tables 20 and 21 Audit Team The step-wise approach was followed following the VCS guidelines. Information on the employed remote sensing and other spatial data for assessing deforestation and forest degradation was included to the PD as requested.	☒
Clarification Request No 19 Document the LULC classification and forest stratification separately for project area and the reference region. Clarify if at least the six IPCC LULC classes (Forest Land, Crop Land, Grass Land, Wetlands, Settlements, and Other Land) were included. Clarify whether Clouds and Cloud Shadow can be qualified as land use class. Clarify whether burn marks are a separate LULC class or are part of the agricultural class / forest (dynamic) class (depends on the time of the image?). Ensure consistency in the description/identification of burn marks as it is indicated as non-forest but indicated to occur in forest and re-growth (forest definition). Clarify title in table 20 which refers to 4 non-forests LULC classes but contains more classes including forest (i.e. forest covered by haze, burn marks)	3,1	Project Proponent Separate section was added for stratification in ref region vs. project area. Classes were rephrased as one of the six IPCC classes No, these are now identified as indeterminate or “no data” classes. No, these are now identified as indeterminate or “no data” classes. This is clarified in the PD: 'This class is indeterminate and may be reclassified as forest, grassland, or cropland.' This table was updated (now Table 25) Audit Team The LULC classification was conducted separately for project area and reference region. It was clarified that IPCC classes were used for the definition of the classes. The table 20 (now 25) was updated with description of only non-forest classes.	☒
Clarification Request No 20	3.1	Project Proponent	☒

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Provide the preliminary stratification as required by the methodology.		EMS will rephrase section 3.2.2 (Step 2B) so it follows the meth (pages 32 and 33) Audit Team Information on the stratification was included to the PD. The main parameters for the stratification includes species composition, biophysical conditions and soil types.	
Clarification Request No 21 Provide the final stratification and corresponding analysis of homogeneity of the carbon stock densities Include the final stratification to the PD.	3.1	Project Proponent EMS will rephrase section 3.2.2 (Step 2B) so it follows the meth (pages 32 and 33) EMS will rephrase section 3.2.2 (Step 2B) so it follows the meth (pages 32 and 33) Audit Team Information on the stratification was included to the PD. The main parameters for the stratification includes species composition, biophysical conditions and soil types.	☒
Clarification Request No 22 Provide required information on ANR areas. (See also CAR 4 in section 2.1 (provide information on eligibility of ANR areas))	3.1	Project Proponent All requested items are discussed in section 3.9 of the PD under "Further specifics" Audit Team Ensure consistency in the description of the ANR areas. It was already indicated that non-eligible areas were already removed however the extent of the ANR areas described in the updated version of the PD remains the same as the previous version of the PD. Project Proponent: Extent was updated. See CAR 4 Audit Team The extent of the ANR areas was updated and found consistent with PD description.	☒
Clarification Request No 23	3.1	Project Proponent	



Provide an explanation on the matrix and the assumptions considered for the transitions. The table of LULC change category will be updated considering the final LULC classes.		The following narrative was added to the PD: 'All transitions between forest strata and non-forest LULC classes were included except for transitions from forest strata to settlements and vice versa. The latter transitions were not considered since the settlement class is insignificant in the classification. Areas that represent hamlets, villages, and towns are present in the “grassland” category. This is conservative since grasslands have higher carbon stocks than settlements.' The table was updated with the final LULC classes. Audit Team Further explanation clarifies the matrix and assumptions considered for the transitions among classes. The table with LULC classes was updated correspondingly.	☒
Clarification Request No 24 Clarify whether temporarily unstocked forest was found among the transitions and if these were excluded from the deforestation and increased forest cover rates.	3,1	Project Proponent No temporarily unstocked forest is present in the project area. No large areas of managed forests are present in the project area. Given the pressures on the forest area, it is likely that all recently deforested land will remain out of forest cover in the baseline scenario. (added to section 3.2.3) Audit Team Provide evidence on the assumption that the recently deforested land will remain deforested beyond the period defined for unstocked forest. Project Proponent: We have very low regeneration rates that are calculated using RS imagery (see CAR 25 below for source of these data). Basically, the regeneration rate are 0.057%/year for reforestation to deciduous/mixed and 0.017%/year for evergreen, with a 0.075%/year total reforestation rate. In other words, the average time it would take for an area to become reforested, is $1/0.075\% = 1340$ yr, which is much greater than any reasonable period of temporarily unstocked. Audit Team Evidence based on satellite image analysis determined the rate of regeneration which sustains the assumption that the recently deforested land will remain deforested beyond the period defined for unstocked forest.	☒
Clarification Request No 25 Indicate the period used for every deforestation transition.	3,1	Project Proponent The following rationale was added to the PD: 'The period of temporarily unstocked was set to 3 years. The rationale for this duration is that when	☒



		no anthropogenic pressures are present, woodlands that have a canopy cover less than 10% can grow back into a forest area with canopy cover greater than 10% given the observed forest growth rates in the province. However, in practice, it is likely that all recently deforested land will remain out of forest cover in the baseline scenario, given the pressures on the forest area. Therefore, no land was classified as temporarily unstocked forest in the project area. ' Audit Team Provide evidence on the observed forest growth rates in the province as evidence on the period defined for the unstocked areas. Project Proponent: The evidence on the observed forest growth rates is present in the workbook "1. Gross Emission Reductions v15.xlsm", sheet "2c. Historical DF, RF, DG, RG" (provided as background documents during the submission of the revised PD). In this sheet RF stands for reforestation. Please look at cells I76 and I77 for the relative regeneration rates. The auditor can back-track all calculations to the original RS images, if desired. Audit Team Evidence on the observed forest growth rates in the province for defining the unstocked forest was provided as requested.	
Clarification Request No 26 Provide information on the commission and omission of errors (see sub-step 2 of methodology).	3,1	Project Proponent The spreadsheet "0. Log of remote sensing work.xlsx" now contains extra sheets with the omission and commission errors. For complete transparency, the sheet "log" contains the formulas how these were calculated. Tables with omission and commission errors were added to the VCS PD (Table 30 and 31) Audit Team Requested information on the commission and omission of errors was included to the PD as requested.	☒
Clarification Request No 27 Include information on the area for each land transition of the historical reference period to the PD	3,1	Project Proponent A table with transitions was added to section "3.2.6 Step 2E – Summarize all Historical Land Transitions" Audit Team Information on the area for each land transition of the historical reference period to the PD was include to the PD as requested.	☒
Clarification Request No 28	3,1	Project Proponent	☒

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Information on spatial remote sensing is provided but does not follow table 5 of the methodology. Update the PD according to requirements of the methodology.		Table in PD was made compatible with p 31 of meth Audit Team The PD was updated following the requirements of the methodology	
Clarification Request No 29 Provide the corresponding evidence for the assumptions for the estimation of the absolute carbon loss per driver. Clarify the source of the number of households Ensure consistency in the calculations with the sources and ensure values are consistent with other published data.	3,1	Project Proponent In the "1. Gross Emission Reductions" workbook, sheet "0. Drivers and parameters", we referred to several independent datasets to confirm the reliability of the relative importance of each driver of deforestation. The household data is derived from several sources. Information on the number of households in the village has been taken from the Commune Database 2006. Information on the number of CF members has been tabulated based on the CF member lists for each CF. This documentation is a necessary part of the CF legal registration. Since CF membership fluctuates, Pact has made some updates based on research with the CF Management Committee. (For more details contact Khiev Samnang) Comparisons with all other independent literature we could find were added to the "1. Gross Emission Reductions.xlsm" spreadsheet. For example, we compared the fuelwood extraction and charcoal extraction with Top et al. (2004).	☒

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Check input values of calculations (i.e. input of fuelwood per day instead of fuelwood consumption/year) Ensure consistency among the tables of calculations and tables in the PD (i.e. Table 3 vs. 1b)		The correct unit for fuelwood is kg per day and not kg per year. As a consequence, the value was multiplied with 356. Data entry forms were checked for anomalous values, and 2 coding errors were corrected: <table><tr><th>Site ID</th><th>Kg</th><th>Interviewer</th><th>Response</th><th>Explanation</th><th>Valid</th></tr><tr><td>77</td><td>50</td><td>Pann Chantrea</td><td>Cook food for the pig, to make alcohol (rice wine)</td><td>Ambiguity in what respondent 'cooks'</td><td>Yes</td></tr><tr><td>245</td><td>100</td><td>Pann Chantrea</td><td>Interviewer cannot recall</td><td>No</td><td>?</td></tr><tr><td>202</td><td>50</td><td>Chheung Rachana</td><td>Mis-entered response</td><td>Actually 5 KG</td><td>No</td></tr><tr><td>281</td><td>50</td><td>Pann Chantrea</td><td>Make food for pig, and family</td><td>See above</td><td>Yes</td></tr></table> All other units were verified and no further errors were found. Audit Team Evidence on the assumptions for the estimation of the absolute carbon loss was included to the calculation files. The source of number of households was further clarified. Consistency in the calculations was ensured with other published data from third parties.	Site ID	Kg	Interviewer	Response	Explanation	Valid	77	50	Pann Chantrea	Cook food for the pig, to make alcohol (rice wine)	Ambiguity in what respondent 'cooks'	Yes	245	100	Pann Chantrea	Interviewer cannot recall	No	?	202	50	Chheung Rachana	Mis-entered response	Actually 5 KG	No	281	50	Pann Chantrea	Make food for pig, and family	See above	Yes	
Site ID	Kg	Interviewer	Response	Explanation	Valid																												
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202	50	Chheung Rachana	Mis-entered response	Actually 5 KG	No																												
281	50	Pann Chantrea	Make food for pig, and family	See above	Yes																												
Clarification Request No 30 Provide information on the relevant features of each agent of deforestation	3,1	Project Proponent Additional information on the relevant features of each driver of information has been included in VCS PD section 1.9.1.3 (see CR #9) Audit Team Further description of the relevant agents of deforestation was included to the PD sustained with evidence. This features of the agents of deforestation was also confirmed during the onsite visit.	☒																														
Clarification Request No 31 Update description of Cambodia UNFCCC forest definition.	3,1	Project Proponent Done (see CAR 4)	☒																														



Ensure that QC/QA procedures for the sampling framework are followed as described.	Better training and remeasurement procedures are developed. An additional "OM REDD project policies" document was developed, which contains a section on "Quality Control Policy for the Forest Biomass Inventories and Social Assessments". This section outlines how the SOP must be followed, and how at least 10 percent of the plots must be checked by an independent party in order to assess the accuracy of the plots. Similarly, it was clearly indicated that sufficient time should be taken to conduct forest inventories, so that the accuracy is not jeopardized by fatigue or stress; quote from the project policies doc: "Field work can be physically grueling. The field team shall be given sufficient time to rest between data collection sessions in order to avoid fatigue and overwork which could lead to carelessness. The teams are urged not to rush the work, but to always prioritize accuracy."
Ensure that biomass measured per sample plot is correctly determined in line with precision requirements of the methodology and VCS	During the validation visit, about 250 trees were re-measured for Quality Assurance and Quality Control (QA/QC). It was found that the remeasured trees were on average 1 cm DBH wider than the original measurements. In relative terms, trees were on average 5% wider than the original measurements. For 95% of the trees, the deviation was greater than 90%. Therefore, we propose an additional factor to correct for potential bias of 0.9 to be applied to the emission factors. This factor is applied directly to the emission factors. See Section "3.4.6 Step 4F – Calculate Emission Factors and Check Compatibility with Degradation Definition". Audit Team Description was updated using the UNFCCC forest definition for Cambodia. The uncertainty discount factor was applied considering the precision requirements of the methodology. A field trip report with 12 plots checked was provided, however this report was conducted prior to the onsite (January 2010). The document OM REDD project policies" which contains a section on "Quality Control



		Policy for the Forest Biomass Inventories and Social Assessments" was not found among the documents provided. Project Proponent: The document "Quality Control Policy for the Forest Biomass Inventories and Social Assessments.doc" is provided to the auditor. The report on the biomass plot remeasurements was also provided to the auditor. Audit Team A brief procedure on QA/QC policies was provided as requested. This guideline jointly with the report of the data analysis from the QA/QC shall be reviewed at time of verification.	
Clarification Request No 32 Ensure consistency in the description of the strata “mixed vs mixed deciduous and deciduous” in the excel spreadsheet and PD. Provide the corresponding calculations on carbon stocks under the baseline scenario.	3,1	Project Proponent All the calculations of the carbon stocks per hectare are available in "Field inventory v7.xlsx" workbook, worksheet "Sampling and Discount". Audit Team Consistency among the calculation files and PD was ensured. Corresponding calculations of carbon stocks under the baseline scenario were also provided.	☒
Clarification Request No 33 Provide information on the responsibilities for the project implementation Provide information on risk failure of project implementation Provide information on the adoption rate	3,2	Project Proponent A table has been added to the VCS PD section 3.6.1.2 which lists the implementing party for each of the planned project activities Added new VCS PD Section- 1.13.4, Risk of Failure of Project Implementation, with discussion of project risks. Audit Team Information on the responsibilities for the project implementation was provided. Information on risk failure was included to the PD as requested. The assumptions for the adoption rates remain to sustained. Project Proponent: Added justification for adoption rates to VCS PD section 3.6.2 Audit Team Further justification on the adoption rates was provided, however it is	☒



		important to remark that these are only based on assumptions for ex-ante estimations which are liable to differ from actual adoption rates ex-post.	
Clarification Request No 34 Provide data sources used for the calculations of emissions of the project scenario.	3,2	Project Proponent I think this is fairly straightforward. Calculations provided. Audit Team Data sources used for the calculations were referenced in the excel spreadsheet and provided as evidence.	☒
Corrective Action Request No 6. Include only eligibility areas for ANR following the methodology requirements (currently non-forest areas were also included)	3,2	Project Proponent Non-forest areas must be excluded from ANR areas. ANR areas must be on degraded land. The VCS came out with a new definition of degradation: 'The persistent reduction of canopy cover and/or carbon stocks in a forest due to human activities such as animal grazing, fuelwood extraction, timber removal or other such activities, but that does not result in the conversion of forest to non-forest land, and falls under the IPCC 2003 Good Practice Guidance land category of forest remaining forest'. We have excluded all non-forest areas from the ANR areas. In addition, we will conduct a more in-depth stratification and demarcation of the ANR area when funds come available in the next coming years. In the meantime, we have developed an ANR SOP which contains procedures to verify the anthropogenic degradation status of the land using indicators such as fire, tree stumps, and girdled trees. This is discussed at length in the ANR SOP and Section "3.9 Step 9 – Estimate the Net GHG Sequestration from Assisted Natural Regeneration Activities". Audit Team As requested previously, provide evidence on the procedure followed to identify eligible areas for ANR activities. The description of the current PD on the area available for ANR remains the same as the description of the previous PD version. Project Proponent: We have attached the ANR SOP which contains the procedures to the validator ("CAR 6 - SOP Assisted Natural Regeneration Oddar Mean Chey REDD v11-0.docx"). The ANR area was updated in the PD to the exact size of the new shapefile, i.e., 4485 ha. Audit Team A document describing the SOP for ANR areas was provided as requested	☒



Clarification Request No 35 Provide sources of data used for calculations. Include the source, the methodology used, whether all species were included, the minimal DBH of measured trees, and the region in which the biomass increases were measured. Provide evidence on the assumption: The baseline aboveground biomass growth rate for these areas is assumed be similar to natural regeneration rate Source applied for Root to shoot ratio (0.29)	3,2	Project Proponent The ANR calculation section was restructured and a justification for all statements was added. The following snippet was added: "Using the natural regeneration rate as the baseline regeneration rate in absence of project activities is conservative since the actual baseline regeneration rate will likely be smaller due to on-going degradation and anthropogenic influences. It is highly unlikely that the actual baseline regeneration rate will be greater than the natural regeneration rate in absence of any silvicultural activities or assistance." The source document was provided to the auditor: "86. Cairns 1997 Root Biomass Allocation In The Worlds Upland Forests.pdf" Audit Team Evidence on the source applied for root-to-shoot ratio was provided as requested. - Clarify the area of the ANR as it remains the same as the previous PD version. - Clarify the assumption of the mean aboveground biomass growth for the ANR area ($7.8 \text{ Mg DM ha}^{-1} \text{ yr}^{-1}$) which is considered to be the same as a plantation. - Clarify the assumption for the baseline aboveground biomass growth rate ($2 \text{ Mg DM ha}^{-1} \text{ yr}^{-1}$) which is for age class >20 years. - Clarify if the baseline considers the following aspects (1) the natural regeneration rate without assistance, and (2) the loss of forest biomass due to deforestation and forest degradation. - According to the description of the activities of the ANR areas, thinning and pruning - Provide the source of the equation used to model ex-ante change in carbon stocks under the project scenario As required by the methodology the accounting of the carbon changes always must follow the relevant sections of the most updated CDM-	☒
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		approved methodology AR-ACM0001 such as definition of stand models for ex-ante estimations. Project Proponent - <i>ANR area was adjusted to exclude area that was non-forest at the start of the project (from 5355 ha to 4485 ha)</i> - <i>Added to section 3.9.1: Using a growth rate representing plantations is justified since ANR will be carried out in the areas that where natural growth rates can be enhanced. The ANR activities resemble the growth enhancement and tending activities of plantation forestry in the respect that those areas will receive site preparation, some plantation and other silvicultural activities. Given the resemblance of ANR activity with that of plantation forestry, the plantation growth rate is the best value to predict the ex-ante estimation of the biomass growth after ANR.</i> - <i>Added to section 3.9.1: Using satellite imagery of the year 1989, it can be demonstrated that the project areas have been forest for at least 20 years. Therefore, it is reasonable to consider and use aboveground biomass growth rate applicable to age class > 20 years.</i> - <i>We confirm that the baseline scenario considers both the natural regeneration without assistance, as well as the loss of forest biomass due to deforestation and forest degradation. The evidence of this can be found in the excel workbook "1. Gross Emission Reductions" on sheets "4b. Model Results ANR only" and "5. RG and RF"</i> - <i>Yes, the ANR activities will include both thinning and pruning in addition to others. The modeled biomass growth already assumes the loss of biomass that could take place due to thinning and pruning. No fire activities will be used during ANR. The removal of unwanted shrubs and trees during site preparation for ANR is accounted for in the carbon accounting procedures. Thinning and pruning during ANR will only come from new growth, and are included in the growth model. As a consequence, no additional loss of biomass should be accounted for.</i> - <i>The source of the equation and the derivation to get to the equation we used is now included in section 3.9.1.</i> - <i>Correct, version 3 of the AR-ACM0001 methodology indicates the</i>	
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use of the allometric method to estimate above- and below-ground biomass change over a different time period, which the project is using for ex-post measurements. The allometric model used in ex-ante calculations is compatible with the methodology (see response to previous comment).

Audit Team

- The assumption of the mean aboveground biomass growth for the ANR area was sustained as it is expected that the same silvicultural treatment of a forestry plantation will be given to promote growth.
- The baseline above ground biomass growth rate was sustained with the fact that the forest remained forest for at least 20 years.
- The baseline calculations included the natural regeneration without assistance, as well as the loss of forest biomass due to deforestation and forest degradation
- The ANR growth model was derived from the Bertalanffy equation (Bertalanffy 1957; Rammig et al. 2005; Vanclay 1994). Provide evidence on the applicability of the equation for the project conditions
- The accounting of the ANR areas followed the AR-ACM001 methodology as required by the VCS approved methodology.

Project Proponent:

The equation used in the ANR growth model belongs to the class of theoretical growth models. No long-term empirical forest growth data from areas similar to the ANR areas are available. Therefore, a theoretical growth equation is more appropriate than an empirical equation on the condition that the main parameters of the growth model are selected well. We will justify separately why the theoretical form of the growth model is appropriate, and why the selected parameters were appropriate.

1. Why is the theoretical form of the growth model appropriate?

The specific growth model used is applicable for generic mixed tropical forests and is useful in modelling forests comprising many species, a wide range of tree sizes, and indeterminate ages. The growth model describes how an initial rapid growth phase is followed by reduced steady growth which is completely in line with the growth patterns observed in the project area. The theoretical model has been successfully applied to forest



		growth for over 70 years and is based on very basic assumptions that are valid in any forest system: growth can be represented as the difference between the synthesis and degradation (Bertalanffy 1941, 1957, 1968). The processes of anabolism (synthesis) and catabolism (degradation) are expressed as allometric functions of mass (Y), and thus growth (dY/dt). The generalized form of this growth model is called the Chapman-Richards plant growth equation. Vanclay (1994) demonstrated that the Bertalanffy and Chapman-Richards equations can be used at the stand level or tree level whenever theoretical model is desired, especially in forestry applications. Many examples exist of successful applications of this forest growth model: • Sein and Mitlohner (2011) have used this model to predict growth of Acacia mangium in Vietnam. • Ramming et al. al (2005) utilized the Bertalanffy equation to develop a model for predicting growth in a mountain forest system. • Similarly, Neef and Roberto dos Santos applied a similar model to a forest system in Central Amazonia (2005). These are just a few examples of scientific papers who have successfully applied a forest growth model similar to the one used in the PD. 2. Why were the selected parameters appropriate for the project area? The theoretical model is parameterized using the best available empirical data for ex-ante estimation. In particular, we used the lower value of the range in growth rates for “mixed tropical forests” reported by the IPCC and the average biomass measured in the project area for the maximal biomass. Both of these assumptions are underestimating the true growth and potential biomass, respectively, and are, therefore conservative. Papers that were not provided yet to the auditor are contained in CR_35_extra_literature.zip Audit Team Evidence on the applicability of the methodology was provided as requested.	
Clarification Request No 36 Provide evidence on the assumptions for defining the leakage	3.3	Project Proponent Leakage cancellation rates for geographical unconstrained drivers were	☒



cancellation rates. (see also CR 39)		justified in the PD. Audit Team - Provide clarification on the potential overlap between the driver of land sales and the conversion to settlements - Provide evidence on the assumptions for the Leakage cancellation rates Project Proponent: Clarification on the potential overlap between the driver of land sales and the conversion to settlements: The overlap was due to an oversight on our part. Forest Clearing for land sales is a geographically unconstrained driver. However, in the PD, was repeated in two places, section 3.10.1 - Step 10A and 3.11 - Step 11. We believe this was causing the confusion. We moved the leakage assessment for Forest Clearing for land sales to section 3.11 Step 11. Both processes and outcomes of these two drivers are different. For example, forest clearing for land sales results in larger patches of areas mostly away of existing settlements while conversion to settlements is mostly smaller patches that are closer to existing settlements. The PRA study showed that lands clearing for sales are conducted by outsiders (i.e. migrants), while forest clearing for settlements usually happens by local people. Table 33 shows that the spatial driving variables for these two drivers are different i.e., proximity to roads, proximity to forest edge and slope were able to explain the existence of drivers while population density, proximity to edge and slope were able to explain the conversion to settlement process. The local communities are aware of the nature, locations and extent of these two drivers. The analysis made here therefore confirms that the two drivers can be effectively distinguished and the likelihood of overlap between these two drivers is small. Evidence on the assumptions for the Leakage cancellation rates: The decision to migrate is dependent on the perception of economic advantages such as wage differentials between sending and receiving areas as well as on the perception of an improvement in the quality of life. Some of these decisions are driven by the economic factors which in the case of project area is availability of land for sales. When the availability of land for sale diminishes, then people are least likely to migrate and try to look for income opportunity in the surrounding where they can frame a livelihood involving their families and friends – a perceived quality of life.	
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		Thus, the decision to migrate is not always driven by economic factors alone. Migration in Cambodia is, by and large, concentrated within its borders and in the rural-urban interface. Reports from the Ministry of Planning set the percentage of internal migrants at 35% of the total population and most of these internal movements are intra-provincial and very short-range (Maltoni 2007). The household survey also found out that that the migration to the Oddar Meanchey started to increase in 2000, peaking in 2005 and then decrease again. Given the short-range nature of intra-provincial migration and leveling of migration rates in the province, it was found conservative to assume a leakage cancellation of 50% under the project scenario. The agents of driver “Land clearing for settlement” are mostly participating community members. Lack of land management plan and lack of forest protection often opens the forest for conversion to settlements. These drivers results in gradual expansion of existing lands. These local communities are bound to local villages and with reinforcement of land-tenure and implementation of land management plans together with availability of other livelihood opportunities which the REDD project activity is expected to bring. Therefore, it was reasonable to assume that this driver can be addressed in its entirety without any leakage Audit Team - Further clarification on the differences between clearing the land for sales and conversion to settlements was provided. The main distinction spatially is the distance to roads. The leakage cancellation rates are based on assumptions from the PPs and the rationale is discussed in the PD.	
Clarification Request No 37 Provide the table on the total relative impact of leakage on the decrease in GHG emissions due to project activities	3.3	Project Proponent Table on "Relative leakage impact as a function of year during the crediting period." was added. Audit Team A table on the total relative impact of leakage on the decrease in GHG emissions due to project activities was included as requested.	☒
Clarification Request No 38 Provide evidence on the assumptions for defining the leakage belt	3.3	Project Proponent A new narrative was added to justify the delineation of the leakage belt. Audit Team References sustaining the leakage cancellation rates were added to the PD.	☒
Clarification Request No 39	3.3	Project Proponent	☒

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Leakage from land sales is caused by migrants and difficult to identify the exact location. Clarify how the leakage cancellation rate can be justified. If no adequate data is available, a conservative approach shall be chosen. Ensure to comply with latest VCS guidance.		A justification was added to the PD in section 3.10.1 Audit Team Leakage from land sales was assumed to be 50% beyond the leakage belts which is considered adequate for ex-ante estimations and to be reviewed at time of baseline update as per monitoring plan.	
Clarification Request No 40 Provide evidence on the assumptions, data sources, and other information relevant to the calculation of the emissions for sources E _{rice} , E _{fertilization} , and E _{livestock} from leakage prevention measures	3.3	Project Proponent Assumptions and data sources were added to workbook "2. Calculate emissions sources v10.xlsm" Audit Team References on the assumptions and data sources used for the calculations of the emissions sources from leakage prevention measures were provided as requested.	☒
Clarification Request No 41 Provide a report of emission sources as required by the methodology.	3.3	Project Proponent Columns for E _{rice} , E _{fertilization} , and E _{livestock} were added to the table in "3.13.3 Step 13C – Test the Significance of GHG Emissions" Audit Team A report of emission sources were included to the calculation files.	☒
Clarification Request No 42 Clarify missing parameters available at validation	4,1	Project Proponent One parameter related to degradation was not included in the previous version of the PD. This parameter is now included but set to "not relevant". The number of another parameter was not enumerated well (number 69). This was corrected as well. Audit Team The missing parameter was included to the monitoring section as requested.	☒
Clarification Request No 43 Include missing parameters according to requirements in the methodology.	4,2	Project Proponent All parameters were added to the PD Audit Team The missing parameter was included to the monitoring section as requested.	☒
Clarification Request No 44 Provide procedures for handling internal auditing and non-conformities	4.3	Project Proponent A summary of the procedures for handling internal auditing and non-conformities from the "Oddar Meanchey Community Forestry REDD Project Policies September 2011" document has been added to the VCS PD, in section 4.3.4. The full document has been added to the document repository under the category Agreements and Approvals Audit Team	☒



		Procedures for handling internal auditing and non-conformities were provided as requested.	
Clarification Request No 45 Provide evidence on enforcement to prevent encroachment by outside actors. The risk factor shall be discussed in the PD as the risk is applicable to the project conditions.	Risk I.1	Project Proponent As the project has not yet been validated under the VCS, there are no previously issued credits for this project. Thus, the rating is zero. Risks section has been added to the VCS PD Audit Team Provide the corresponding evidence on enforcement to prevent encroachment by outside actors as requested Project Proponent: VCS has provided clarification on this issue. The Risk Buffer has been updated to reflect this clarification, and this section has been changed from a 0 to a 2. Audit Team In compliance with the VCS clarification the risk factor was included. Request closed.	☒
Clarification Request No 46 Present in the PD further details on significant experience in all skills necessary to successfully undertake all project activities	Risk I.1	Project Proponent Have added a description of each key Oddar Meanchey management team member, as Annex 1 of the Risk Buffer. Audit Team Description on significant experience and skills to successfully undertake all project activities was included to the risk assessment. The project proponents and implementing parties have demonstrated experience to conduct the proposed project activities	☒
Clarification Request No 47 Provide the adaptive management plan following with the VCS requirements.	Risk I.1	Project Proponent At present there is not an adaptive management plan in place for the project. An adaptive management plan will be provided at Verification Audit Team At time of validation there was no adaptive management plan in place, therefore the mitigation score is set to zero.	☒
Clarification Request No 48 Clarify if the cash flow will be updated for the validation (version submitted Investment Model - v2 - OM JUL 15 2011 for Validation.xlsx), or if the budget and cash flow as submitted is valid and accepted by all partners for validation of the project.	Risk I.2	Project Proponent Awaiting input from project partners Audit Team Pending reply Project Proponent: The budget that has been provided on the document repository is the final	☒

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		version used for the cash-flow analysis. The total budget amount for each year is set and will not change from this budget. Audit Team It was definend that the project has secured less than 15% of the budged needed to cover the total cash out before the project reaches breakeven, thus the risk rating was defined accordingly to 3.	
Clarification Request No 49 Provide evidence if the majority of baseline activities over the length of the project crediting period are subsistence-driven. Provide a NPV analysis if this is not the case	Risk I.3	Project Proponent Have added clarification to the risk buffer Audit Team As discussed further in the VCS PD, the majority of the baseline activities are subsistence-driven. Evidence is provided in the description of the deforestation drivers.	☒
Clarification Request No 50 Clarify and sustain whether there is a legal agreement or requirement to continue the management practice after the project lifetime	Risk I.4	Project Proponent There is a legal requirement to continue the management praticite, required by the Sub-Decree on Community Forestry Management (No. 79 Or Nor Krar. Bor Kar), Article 27, which states: <i>Community Forest Agreements shall be in effect not more than a period of fifteen (15) years from the data of approval by the Forestry Administration Administration Cantonment Chief.</i> <i>One year prior to the expiration of the Community Forest Agreement, the Community Forestry Management Committee shall submit a written request to the Forestry Administration Cantonment Chief to renew the Community Forest Agreement for an addional fifteen (15) year term.</i> The Community Forestry Sub-Decree has been added to the Document Repository under the category "Other". In addition, the Agreement between TGC and the FA states that the FA is required to support the communities in the implementation and maintenance of project actions necessary to develop the carbon benefits from the project, with no limitations with respect to the duration of this support. This document is available on the Document Repository under "Agreements and Approvals". Audit Team Legal agreements are in place in order to continue the management practice after the project lifetime as defined by the Sub-Decree on CF	☒

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		Management and internal agreements between PPs.	
Clarification Request No 51 Provide evidence regarding any disputes over land tenure or ownership.	Risk E.5	Project Proponent Awaiting input from project partners Audit Team Pending reply Project Proponent: Added additional information to Risk Buffer section External - Land Tenure regarding disputes over land tenure or ownership Audit Team It was demonstrated that there are no disputes over the land tenure and the ownership and resource access/use rights are held by different entity(s) (eg, land is government owned and the project proponent holds a lease or concession).	☒
Clarification Request No 52 Provide evidence on disputes over access/use rights (or overlapping rights)	Risk E.5	Project Proponent Awaiting input from project partners Audit Team Pending reply Project Proponent: Clarification has been added to the Risk Buffer. The FA, as the project proponent, ensures in the statements in the risk buffer that there are no current disputes over access or use rights (overlapping rights) in any of the CFs included in the Oddar Meanchey REDD project. (By signing the Registration Representation document for the VCS, the FA has certified a) that it is the project proponent for the Oddar Meanchey project and b) that the Project Description and any other Project Documents, including this risk buffer document, are true and accurate in all material respects.) Audit Team Evidence on disputes over access/use rights (or overlapping rights) was provided through official documentation from the forest authority.	☒
Clarification Request No 53 Provide details on the governance score, update the number in line with VCS requirements for calculations	Risk E.7	Project Proponent The governance score has been recalculated based on the newest World Bank indicators. Cambodia's average score for WB indicators from 2006 - 2010 (most recent year) across all five factors is -0.77. Audit Team The governance score was properly calculated following the VCS AFOLU Non-Permanence Risk Tool.	☒
Clarification Request No 54 Provide references/evidence on each of the natural risks and	Risk NR	Project Proponent Evidence is provided in the risk assessment document	☒



the assumptions for their calculation to the audit team.	Audit Team Evidence and references were included to the PD to sustain the natural risks. Provide evidence that the project proponents have proven history of effectively containing the natural fire risk. Project Proponent: The risk buffer section regarding Fire has been updated. In addition, two pieces of evidence have been added to the document repository under the section "Other": 1) an image of a fire break that has been established by the FA and 2) an english translation of the regulations Anukrut 188 which lays out the responsibilities of the FA and states the responsibility of the FA for managing and prventing fire. As such, we are claiming the -.25 mitigation on the risk buffer. Audit Team Evidence on the previous experience of containing the risk of fire was provided as requested.
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Table 3: Unresolved Corrective Action, Clarification Requests, Forward Action Requests

Not applicable

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ANNEX 2: Information Reference List

Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
1.	TÜV SÜD Industrie Service GmbH	Interview during field visit	2011
		Eric Berghold Country Director PACT	
		Stuart Raetz REDD officer PACT	
		Steven De Gryze TGC Managing Director	
		Amanda Bradley PACT Program Director	
		Omalis Keo DD Forestry Administration	
		Long Ratanakoma DD Forest Dept. Forest Administration	
		Maya Sepehri PhD Research	
		Donal Yeang Carbon Program Officer	
		Chou Chandarith Forestry Administration OMC	
		Taing chau Sema Forestry Administration OMC	
		Sim Sohn Forestry Administration OMC	
		Blung Phath Forestry Administration OMC	
		Bun Salouth Program Officer CDA	
		Chboernung Rachana P.A CDA	
		Sa Thlai CFN	
		Yem Sambath Forestry Administration OMC	
		Rith Bo P.M CDA	
		Net Channa Junior Database & GIS PACT	
		Hae Teur Community Forestry Member	
		Sour Pisey Community Forestry Member	
		Mean Hom Community Forestry Member	
		Sari Von Community Forestry Member	

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document			Date
		Lat Iveam	Community Forestry Member		
		Ehhearn Chantrea	Community Forestry Member		
		Sat Hourt	Community Forestry Member		
		Rin Chanda	REDD project assistant		
		Loek Socheata	Forestry Administration		
2.	Terra Global, PACT	Initial VCS PD Final VCS PD			2011 2012
3.	Terra Global, PACT	Initial CCB PDD Final CCB PDD			2011 2012
4.	Terra Global, PACT	VCS risk assessment: OM REDD Risk Assessment v1.pdf			2011
5.	Terra Global, PACT	GIS files of the project area			2011
6.	Terra Global, PACT	VCU calculations (Excel files:)			2011
7.	Chave et al	Tree allometry and improved estimation of carbon stocks and balance in tropical forests. Oecologia 145: 87-99.			2005
8.	Terra Global, PACT	Allometric equation verification			2011
9.	Tom Evans, Hannah O'Kelly, Nut Meng Hor	Validation of the biomass equation used for the Seima REDD Project, Cambodia WCS Cambodia Program, Forestry Administration, Ministry of Agriculture, Forestry and Fisheries, Cambodia			2011
10.	Terra Global, PACT	SOP Assisted Natural Regeneration Oddar Meanchey v4.pdf			2011
11.	Terra Global, PACT	SOP Biomass Inventory Oddar Meanchey v11.pdf			2011
12.	Terra Global, PACT	SOP Household Survey Oddar Meanchey v2.pdf			2011
13.	Terra Global, PACT	SOP Participatory Rural Appraisal Oddar Meanchey v2.pdf			2011
14.	Terra Global, PACT	SOP QA-QC for Biomass Inventories Oddar Meanchey v2.pdf			2011

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
15.	Terra Global, PACT	Summary of biomass plots (Field inventory V7.xlsx)	2011
16.	Terra Global, PACT	GIS file on location of biomass sample plots	2011
17.	Thomas W. Blackburn Jr.	Household_Survey_Data_Report_Final_Final.pdf	2011
18.	Terra Global, PACT	Household Survey Database: CDA_pact_REDD Database_Samnarng-VT_24.mdb	2011
19.	PACT	Report on Participatory Rural Appraisal (PRA), Oddar Meanchey Community Forestry REDD Project (PRA Analysis V2.doc)	2011
20.	FA TGC	Oddar Meanchey FA TGC Carbon Agreement Extension JUL 2011.jpg	2011
21.	FA TGC	Oddar Meanchey FA TGC Carbon Agreement Final Signed MAR 2009.pdf	2009
22.	Government of Cambodia	Council of Ministers 699 English Translation of Reply from MAY 26 2008.pdf	2008
23.	Terra Global, PACT	OM REDD Pact Terra MOU Signed JUL 1 2010.pdf	2010
24.	PACT	MOU PACT&FA 16 Dec 2010 eng.pdf	2010
25.	PACT, FA	Implementing Partners MOA Pact and FA OCT 29 2010 - Final text but not signed yet.pdf	2010
26.	FA, CFA	FA CFA Mgt and Carbon Agreement.docx	2011
27.	Terra Global, PACT	Carbon Development work plan 2 for PD Validation.pdf	2011
28.	PACT	OM REDD Workplan_30 years_15 June 2011 with % mgmt.xlsx	2011
29.	PACT	Minutes of community agreements for avoiding logging activities	2011
30.	PACT	Binding community forestry agreements	2011
31.	Government of Cambodia	Sub-Decree on Community Forestry Management	2003
32.	PACT	Commitment of communities for the implementation of project activities	2011
33.	Technical Working Group	Signed agreement between the TWG-F&E Secretariat	2008

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
34.	PACT	Member list of communities	2011
35.	Terra Global, PACT	Land Eligibility Assessment	2011
36.	PACT	List of community meetings	2011
37.	PACT, Stuart Raetz	Oddar Meanchey Community Forestry REDD Project: Review of monitoring capacity (January 2011 OM-REDD_Monitoring Scoping Visit-Review.doc)	2011
38.	PACT	OM CF REDD+ Participatory MERL Workshop Module July 2011 OM CF REDD Participatory M E Workshop - Module.doc July 2011 OM CF REDD Participatory M E Workshop - List of Invitees.xls	2011
39.	PACT	June 2008 Forest Law Enforcement Workshop - report.doc	2008
40.	PACT	June 2011 CFF Meeting - 28th June 2011 CFF Meeting Minutes (Integrated).docx	2011
41.	PACT	List of Community Engagement and Consultation Documents.xlsx	
42.	PACT	List of Trainings conducted for CF in Oddar Meanchey by CDA as of 2010.doc	
43.	PACT	March 2008 Launch Workshop - Carbon workshop : - Report - List of Participants - Agenda	2008
44.	PACT	OM REDD Community Consultation. - List of participants - Minutes - Plan and guidelines - Summary of Results	2009
45.	PACT	OM-CF-REDD-PM&E-Workshop	2011

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
46.	PACT	Issue reports by communities	2011
47.	Terra Global, PACT	OM REDD Budget - 30 years (revised - 21 01 11) for DG presentation Jan 25 2011.xlsx	2011
48.	Terra Global, PACT	Investment Model - v2 - OM JUL 15 2011 for Validation.xlsx	2011
49.	PACT, Birdlife international	Final OM Biodiversity assessment report (24 Jan 2011) .doc	2011
50.	PACT	PACT Field reports on biodiversity assessment	2011
51.	Acker, Frank Van.	“Natural Resource Management and Decentralization” Support Programme for the Agricultural Sector in Cambodia. (PRASAC II, Phnom Penh) August 2003.	2003
52.	ADB	Asian Development Bank. Cambodia: Enhancing Governance for Sustainable Development. (ADB: Phnom Penh) 2000.	2000
53.	Azimi, Ali et al.	Environments in Transition: Cambodia, Lao PDR, Thailand, Vietnam. (Asian Development Bank: Manila) February 2001.	2001
54.	Bailieux, Renaud.	The Tonle Sap Great Lake. (FAO/Asia Horizons Books Co., Bangkok) 2003.	2003
55.	Forestry Administration	Cambodian Tree Seed Project. Cambodian Tree Species. (Forestry Administration: Phnom Penh, Cambodia) 2004.	2004
56.	Community Forestry International	CFI. Proceedings of the Non-Timber Forest Product (NTFP) Workshop and Seminar. (Community Forestry International: Phnom Penh) 2006.	2006
57.	Community Forestry International	CFI. Workshop on Rattan in Cambodia. (Community Forestry International: Phnom Penh) 2007.	2007
58.	Community Forestry International	CFI. Community Forestry and Honey Enterprise Development. (Community Forestry International: Phnom Penh) 2007.	2007
59.	Community Forestry International	CFI. “Report on Launching Workshop on Avoided Deforestation Community Forestry Carbon Pilot Project in Oddor Meanchey Province.” Provincial Department of Agriculture: Samraong, Oddar Meanchey, March 2008.	2008
60.	Community Forestry	CFI. “Social Appraisal Report- Oddar Meanchey Province.” Phnom Penh. 2008.	2008

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
	International		
61.	Community Forestry International	CFRP Management Team, Cambodia's Community Forestry Research Project. (Community Forestry Research Project: Phnom Penh) September 2006.	2006
62.	Danielsen, Finn et al.	“A simple system for monitoring biodiversity in protected areas of a developing country” Biodiversity and Conservation (9:1671-1705), 2000.	2000
63.	Evans, Tom D. et al.	“A Study of Resin-Tapping and Livelihoods in Southern Modulkiri, Cambodia” (World Conservation Society, Phnom Penh) January 2003,	2003
64.	FAO	FAO. Country Deforestation Data (Source: Food and Agriculture Organization of the U.N.: The State of the World's Forests) 2003.	2003
65.	Forestry Administration	“Cambodian Tree Species”. (Forestry Administration, Phnom Penh) April 2004.	2004
66.	Fox, Jefferson M. et al.	“Land Use and Tenure Change in Ratanakiri: 1989-2006.” (Community Forestry International: Phnom Penh) 2008.	2008
67.	IUCN	IUCN Red List Categories and Criteria: Version 3.1. (IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK) 2001.	2001
68.	Kanninen, Markku et al.	“Do Trees Grow on Money? The implications of deforestation research for policies to promote RED.” (Center for International Forestry Research: Bogor Indonesia) 2006.	2006
69.	McMahon, Dennis.	“Assessment of Community Forestry Sites and Migration Patterns in the Oddar Meanchey Province, Cambodia”. (CFI: Phnom Penh) 2008.	2008
70.	Min Bunnara et al.	“Participatory Land Use Planning in Cambodia”. The Development of Community-based Natural Resource Management (CBNRM-LI) in Cambodia. (CBNRM-LI Learning Institute: Phnom Penh) 2005.	2005
71.	Oberndorf, Robert B.	“Legal Analysis of Forest and land Laws in Cambodia,” (Community Forestry International, Phnom Penh) 2006.	2006
72.	Government of Cambodia	Royal Government of Cambodia, Community Forestry Sub-Decree. 2003.	2003
73.	Government of Cambodia	Royal Government of Cambodia. “Income and Expenditure” (Council for Administrative Reform:	

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
		www.car.gov.kh/Cambodia/income-expenditure).	
74.	SCW	Save Cambodia's Wildlife. The Atlas of Cambodia: National Poverty and Environment Maps (SCW: Phnom Penh) 2006.	2006
75.	Kingdom of Cambodia	Sar. Chor. Nor. No. 699, Council of Ministers, Kingdom of Cambodia, Phnom Penh May 2008.	2008
76.	Sunderlin, William D.	Poverty Alleviation Trough Improved Community Forestry in Cambodia, Lao-PDR, and Vietnam. (Draft) 2006.	2006
77.	TWG	Technical Working Group on Forestry & Environment. FOREST COVER CHANGES IN CAMBODIA 2002-2006. (Cambodia Development Cooperation Forum, Phnom Penh) June 2007.	2007
78.	Top, Neth et al.	“Spatial Analysis of woodfuel supply and demand in Kampong Thom Province, Cambodia.” Forest Ecology and Management, 194. 2004.	2004
79.	PACT	Trip Report: Visit to Oddar Meanchey to Explore Possibilities for Forest Carbon Project. January, 2008.	2008
80.	Taillandier, Valerie-Anne.	“Cambodia Fuel wood Saving Project Phase 2”. Geres Cambodia. http://www.geres-cambodia.org/cfsp/index.html . Accessed October 2009.	2009
81.	Vitou, Sam and Ngak, Ouch.	Dissemination of New Lao Bucket Stove. Undated newsletter.	2011
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83.	World Bank.	Forest Policy Assessment: Cambodia. (World Bank: Washington, D.C.) 1996.	1996
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86.	Cairns, M.A., Brown, S., Helmer, E.H., Baumgardner, G.A.	Root biomass allocation in the world's upland forests. Oecologia 111:1-11.	1997
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88.	Community Forestry International	CFI. “Report on Launching Workshop on Avoided Deforestation Community Forestry Carbon Pilot Project in Oddar Meanchey Province.” Provincial Department of Agriculture: Samraong, Oddar Meanchey, March 2008.	2008
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91.	FAO	Food and Agriculture Organization (FAO) of the United Nations. 2000. Forestry Department. Global Forest Resource Assessment 2000.	2000
92.	FAO	Food and Agriculture Organization (FAO) of the United Nations. 2005. Forestry Department. Global Forest Resource Assessment 2005.	2005
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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
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99.	National Institute of Statistics	NIS. General Population census of Cambodia 1998, Final Result. National Institute of Statistics, Ministry of Planning, Phnom Penh, Cambodia, 199. p. 299.	1998
100.	Pearson T., S. Walker and S. Brown.	Sourcebook for Land Use, Land-use Change, and Forestry Projects. Winrock International and the Bio Carbon Fund.	2005
101.	Poffenberger, M	Community Forestry International. Oddar Mean Chey Field Trip Report. . 28, February 2008.	2008
102.	Sasaki, N.,	Carbon emissions due to land-use change and logging in Cambodia- a modeling approach. Journal of Forest Research 11(6), 397-403.	2006
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108.	UNDP/MOE	Improvement of activity data and emission factors for forestry sector in Cambodia. Phnom Penh, Cambodia.	2003
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110.	PACT	Documents for getting Community Forestry Approval	2011
111.	N/A	Sources for non-spatial drivers: census data from Cambodia	2011
112.	Government of Cambodia	Cambodian forestry law: http://www.forestry.gov.kh/Documents/Forestry%20Law_Eng.pdf	2011

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
		Para 40-41	
113.	Government of Cambodia	REDD readiness plan for Cambodia	2011
114.	University of Copenhagen	Deforestation rates calculated in the Forestry Administration study supported by GRAS A/S of the University of Copenhagen between 2002 and 2006	2006
115.	DANIDA	ATLAS of Cambodia (sponsored by DANIDA) (checked onsite) shapefiles available	
116.	Terra Global Capital	Radar data for elevation, and slope	2011
117.	Chambers et al.	Decomposition and carbon cycling of dead trees in tropical forests of the central Amazon	2000
118.	Ministry of Agriculture	agricultural census of the Ministry of Agriculture, Forestry and Fisheries of Cambodia (AC 14	
119.	Terra Global Capital	SOP on remote sensing analysis	2011
120.	Terra Global Capital	Classified LANDSAT images (TIF)	2011
121.	Terra Global Capital	Interlinked Excel sheets for biomass plot data	2011
122.	Terra Global Capital	Guideline on Community Forestry and its Relevant Policies	2011
123.	PACT	Brief profile of CFs (in English)	2011
124.	Government of Cambodia	National Forest programme	2011
125.	PACT	Summary of consultation process, minutes and photographs	2011
126.	Terra Global Capital, PACT	Module for training	2011
127.	PACT	Labour law / regulation	2011
128.	Terra Global Capital, PACT	Activity based budget	2011
129.	UNFCCC	CDM Forest Definition of Cambodia: http://cdm.unfccc.int/DNA/index.html	2011
130.	Terra Global Capital	SPOT Image 2005	2005

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Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date
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132.	Chomitz and Grey.	Roads, Land Use, and Deforestation: A Spatial Model Applied to Belize.	1996
133.	Muller and Munroe	Tradeoffs Rural Development Policies and Forest Protection: Spatially Explicit Vietnam	2005
134.	Peter et al.	Accessibility and Land-Use Patterns at the Forest Fringe in the Northeastern Part of the Philippines.	2004