

Guiding document

Carbon feasibility checklist

June 2022



© **Form International B.V.**, Hattem, June 2022. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means unless appropriately referencing this document.

Authors: Esther Boer, Ronja Knippers, Anke Scheper, Tieme Wanders, Sicco Stortelder

Title: Guiding document – Carbon feasibility checklist

Acknowledgement: This report has been produced for the Precious Forests Foundation. Form International is however solely responsible for the content of this report.

The authors thank FSC International for their contribution to the guideline/report development with additional valuable input into its content.

Disclaimer: Form International has prepared this report with the utmost care and has made its best effort to provide accurate information. Form International assumes no liability or responsibility for the content or use of the information stated in this report.

Contents

Acronyms & Abbreviations.....	4
Glossary of terms.....	5
1. Introduction.....	7
2. How to use this document	10
3. Carbon feasibility assessment	12
3.1 Determine project type and eligibility.....	12
3.2 Set project boundaries and scope	13
3.3 Determine baseline scenario and emissions.....	16
3.4 Determine project scenario and emissions.....	20
3.5 Quantify leakage.....	21
3.6 Quantify net emission reductions.....	22
3.7 Quantify Verified Carbon Units	23
3.8 Monitoring	24
3.9 ESG impact	25
3.10 Cost-benefit analysis	25
4. References.....	27
Annex I: Decision tree – eligibility	30
Annex II: Overview questions – input calculation tool.....	31
Annex III: Carbon rights country profiles	32
Annex IV: Context of the carbon rights for SMF operators.....	50
Annex V: Monitoring requirements	55

Acronyms & Abbreviations

CH ₄	Methane
CO ₂	Carbon dioxide
CT	Calculation tool Calculation tool
ERA	Extended Rotation Age Extended Rotation Age
FAO	Food and Agriculture Organization
GD	Guiding document
GHG	Greenhouse gas
Ha	Hectare
IFM	Improved Forest Management
LtHP	Low-Productive to High-Productive Forest
LtPF	Logged to Protected Forest
LULC	Land Use and Land Cover
NDC	Nationally Determined Contribution
N ₂ O	Nitrous oxide
REDD	Reduced Emissions from Deforestation and Degradation
RIL	Reduced Impact Logging
RIL-C	Reduced Impact Logging for Climate
SFM	Sustainable Forest Management
TAr	Tropical (evergreen) rainforest
TAwa	Tropical moist deciduous forest
TAwb	Tropical dry forest
TM	Tropical mountain systems
VCM	Voluntary Carbon Market
VCS	Voluntary Carbon Standard
VCU	Verified Carbon Unit
WRC	Wetlands Restoration and Conservation



Glossary of terms

Additionality Carbon projects that want to certify their emission reductions or removals must prove that they are additional. This means that they must show that the project would not have existed in the absence of the carbon offset market. This ensures the quality of carbon credits.

Baseline emissions The emissions that would have occurred in the project area in the absence of the project.

Baseline scenario The business-as-usual scenario that would have led to the baseline emissions during the project crediting period if the project was not implemented.

Carbon credit Any tradable permit or certificate that gives the holder the right to emit a certain amount of greenhouse gases.

Carbon pool In VCS methodologies, a carbon pool is carbon stored in a certain reservoir. Important carbon pools are above-ground tree carbon (all carbon stored in above-ground tree biomass), below-ground tree carbon, soil organic carbon, litter and non-tree biomass.

Crediting period The period during which certified carbon credits can be generated from a single project. Crediting periods will be dependent on project type and methodology, amongst others.

Emission avoidance A type of emission reduction where emissions are avoided, i.e. emissions that have been predicted to happen are prevented. This is the emission removal type for set-asides, REDD+ and RIL-C. The other major type of emission reduction is emission removal, where existing greenhouse gases in the atmosphere are stored, for example in tree biomass during afforestation and reforestation projects.

Feasibility study A necessary part of carbon project development where the feasibility of the project is explored.

Leakage Leakage occurs when activities that lead to GHG emissions are decreased in the project area during the project crediting period and consequently move to another area. As such, these emissions are not eradicated. Leakage has to be accounted for in most forest carbon projects.

Non-permanence risk Due to a myriad of factors (financial instability, political instability, natural disasters, etc.) carbon benefits from forest carbon projects do not always happen as planned or are not permanent (enough). This is accounted for in VCS methodologies through a deduction based on the risk of non-permanence of the project.

Project emissions During project implementation, GHGs are emitted. Depending on the methodology, these have to be accounted for.

Project scenario The scenario proposed by the project proponent in which carbon benefits are obtained when compared to the baseline scenario.

REDD+ In the context of the forest carbon market, REDD+ is the avoidance of GHG emissions through prevented deforestation and/or forest degradation.

Regional Performance Method A document specifying the regionally-specific conditions for carbon accounting of RIL-C projects. This document currently exists only for a small selection of regions. In its absence, the document has to be developed (by the project proponent) and approved by VERRA before project accreditation can start.

RIL-C The implementation of Reduced Impact Logging practices for carbon benefits.

Set-aside Converting logged or planned-to-be-logged forest to protected forest.



Uncertainty deduction A mandatory reduction in carbon benefits from carbon project due to uncertainty in the data used for analysis of GHG emissions.

VCS A certification program for voluntary carbon credits. VCS is the largest globally applicable standard that allows for the accounting of carbon benefits from improved forest management and REDD+.

VCU The unit of carbon credits under VERRA's VCS program. One VCU is equivalent to one tCO₂e.

Voluntary carbon market The part of the carbon market outside of government-level agreements on carbon trade and emission reductions.



To use this guidance effectively, SFM operators should have some basic information about their potential project at the ready, including the country in which the project would be established, the approximate project area, the harvesting intensity (if applicable), the rotation length, the status of the project area (primary or secondary forest), etc.

1. Introduction

The aim of the decision tree and the accompanying guiding document is to help forest operators with the development of a voluntary carbon project in sustainably managed, natural tropical forest where logging is part of the management strategy. Voluntary carbon projects aim to capture CO₂ and/or to avoid emissions that would have happened in absence of the projects. These two components make up the carbon benefits and project yields. Carbon benefits are expressed in the unit of carbon credits, where one carbon credit is equivalent to one ton CO₂ that has been stored or avoided as emissions. These carbon credits can be sold on the voluntary carbon market (VCM), thereby creating a revenue stream from carbon storage/avoided emissions.

Carbon benefits in SFM can come from a variety of activities and project categories. In this document, we consider the following (see Table 1 for an overview of the available carbon accounting methodologies per project category):

Reduced Emissions from Deforestation and Degradation (REDD+): SFM operators can obtain carbon benefits from REDD+ implementation. REDD+ means that emissions from planned or unplanned deforestation or degradation are avoided and carbon therewith conserved. Contrary to set-asides (see below), REDD+ can be combined with a sustainable logging scheme. In that case, the forest is logged sustainably and thereby more intensive (un)planned deforestation and degradation is avoided. If no logging takes place and the REDD+ project area is only a part of the complete concession of an SFM operator, REDD+ are functionally identical to set-asides.

Improved Forest Management (IFM): IFM activities increase carbon sequestration and/or reduce GHG emissions by increasing biomass carbon stocks on forest lands managed for wood products through improving forest management practices. Four project activities are categorized as IFM activity: Reduced Impact Logging (RIL), Logged to Protected Forest (LtPF) or “set-aside,” Extended Rotation Age (ERA) and Low-Productive to High-Productive (LtHP).

- Logged to Protected Forest (LtPF) or “set-aside”: A part of a logging concession is set aside (no more timber harvest) for conservation purposes. This can be done in a myriad of ways. A set portion of the concession can be set aside at once, or a certain area can be set aside at each harvesting instance. Carbon benefits from set-asides stem from the fact that trees that would normally have been harvested (under the pre-project management plans) are left standing and carbon in tree biomass is thereby conserved.
- Reduced Impact Logging (RIL): Reduced Impact Logging for Climate (RIL-C) differs from set-asides and REDD+, since carbon benefits are obtained solely from sustainable changes to



logging operations. Under RIL-C, the logging intensity does not change. Instead, logging operations are improved to maximize use of harvested trees and minimize collateral damage to remaining stands during skidding, felling, and hauling. Examples of improved logging operators can be narrower logging roads, smaller skidders, and more effective use of harvested trees. Through these activities, emissions from damage to standing trees is reduced, less trees will have to be removed for logging roads and more wood can be harvested from the same number of trees. These sources combined make up the carbon benefits that can be achieved through RIL-C implementation. VCS offers a specific accounting method for RIL-C (VM0035). Contrary to REDD+ and set-aside methodologies, the methodology for carbon benefits from RIL-C uses a regional baseline to determine the number of credits that can be issued. These regional baselines (or benchmarks) must be determined in a separate ‘regional performance method.’ For now, regional performance methods are only available for Kalimantan and Yucatan, although various documents are in progress (e.g., Guyana, Congo basin)¹. It should be noted that RIL activities can also be incorporated into other VCS AFOLU methodologies, for example in combination with a REDD+ project. If this option is chosen, the methodology must be augmented by the project proponent and these changes must be approved by VERRA before the project can be registered. Whenever RIL-C methods and requirements are mentioned in the remainder of this document, they refer to VM0035.

Table 1: Relevant methodologies per project category

Project categories	Relevant methodologies				
REDD+ including logging	VM0006 Methodology for Carbon Accounting for Mosaic and Landscape-scale REDD+ Projects, v2.2	VM0007 REDD+ Methodology Framework (REDD+MF), v1.6	VM0009 Methodology for Avoided Ecosystem Conversion, v3.0	VM0037 Methodology for Implementation of REDD+ Activities in Landscapes Affected by Mosaic Deforestation and Degradation, v1.0	VM0015 Methodology for Avoided Unplanned Deforestation, v1.1
Set-asides	VM0010 Methodology for Improved Forest Management: Conversion from Logged to Protected Forest, v1.3	VM0011 Methodology for Calculating GHG Benefits from Preventing Planned Degradation, v1.0			
RIL-C	VM0035 Methodology for Improved Forest Management through Reduced Impact Logging v1.0				

¹ Finalized performance methods can be accessed through: <https://verra.org/methodology/vm0035-methodology-for-improved-forest-management-through-reduced-impact-logging-v1-0/>

Note: Apart from the categories described above, other activities exist that can lead to improved carbon storage or avoided emissions in SFM concessions in the tropics. These include Low-productive Forest to High-productive Forest (LtHP) (VM0005) and Extended Rotation Age (ERA) (VM0003). In addition, while some carbon accounting methodologies, such as VM0011 or VM0035, are aimed at a specific project category others focus on combined category projects. For example, VM0006 allows REDD and IFM activities to be combined with afforestation, reforestation, and re-vegetation activities, as well as clean cookstoves initiatives. Combining AFOLU project activities that are not unified in one methodology is also possible. In that case, two options are available: project activities and methods can be combined in one set of project documents that can be audited at once, or separate project documents can be drawn up that will have to be audited separately. Information on how these activities can lead to carbon benefits can be synthesized from the applicable VCS methodologies.

Carbon benefits from REDD+, set-asides, and RIL-C can lead to significant revenue streams. However, the number of credits issued and the price at which they can be sold are dependent on many project and market variables. Aside from that, not all proposed projects may be feasible due to project-specific objections. In this document, we will provide guidance on project feasibility and project development to grant SFM operators insight into whether their project area has the potential to include a carbon project component, as well as an approximate bandwidth of the carbon credits that could be generated (depending on the chosen project activities).

Purpose of the guiding document

The purpose of the guiding document is threefold:

1. Providing clarity on project eligibility: by answering straightforward questions such as “*will the project activity involve conversion of forest to non-forest land use?*” the guiding document will generate an answer on whether – and under which conditions – the project may qualify as formal carbon offset project
2. Explaining a process or raising issues that must be considered when developing a carbon project (e.g., demonstrating additionality or explaining the status of voluntary carbon credits in different countries)
3. Generating quantitative input to determine an approximate bandwidth of carbon credits that may be generated by the proposed project, as well as an approximation of the project’s financial viability



2. How to use this document

The document is structured in line with the VCS standard and methodologies, which lay out all the requirements for developing carbon projects and set out detailed procedures for quantifying real greenhouse gas benefits of a project (see Figure 1).

The first chapter provides information on project eligibility and helps to classify the proposed carbon project, whereas the second chapter discusses project boundaries and scope. Chapters 3-7 provide guidance on the calculation of carbon credits generated by the project, including information on the quantification of baseline and project emissions, leakage emissions, net emission reductions and verified carbon units (the ultimate number of credits that may be sold). Chapter 8 discusses long-term monitoring requirements and chapter 9 explains how ESG impact can be integrated in a VCS project. Chapter 10 concludes with an indicative cost-benefit analysis (presented in a separate document).

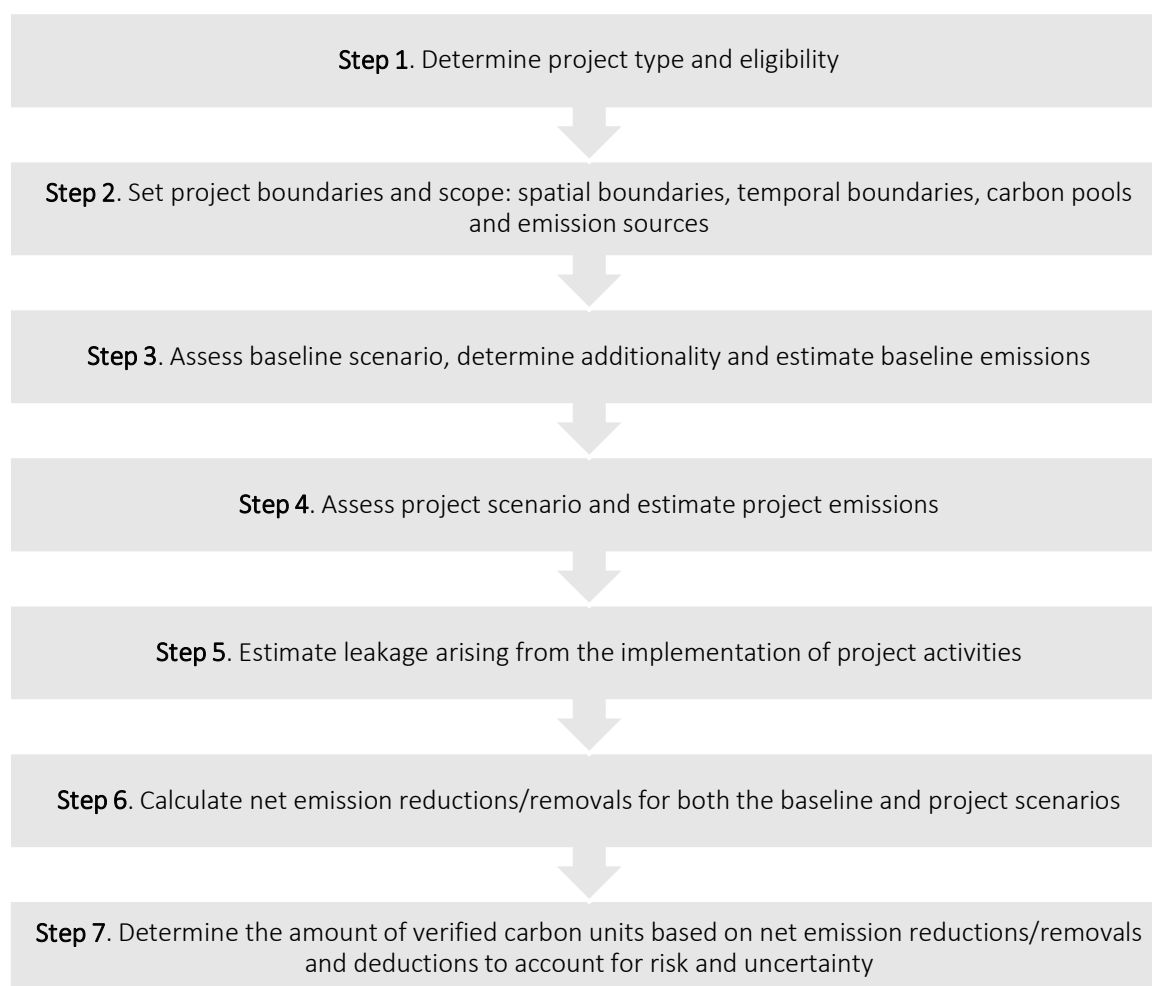


Figure 1. Overview of steps in carbon accounting process

The decision tree (Annex 1) corresponds to the first step in the carbon feasibility assessment (Section 3.1) and serves as an eligibility checklist. The decision tree contains only yes/no questions

that should be answered to determine 1) whether the proposed project would qualify as formal carbon offset project and 2) whether the project would classify as REDD+, set-aside or RIL-C project.

To arrive at an estimation of carbon credits that may be generated by the proposed project, some additional questions should be answered and used as input for the calculation tool (presented in a separate document). These questions are indicated with a calculator symbol, with answer options and/or required entry formats highlighted in green. An overview of all key questions including the corresponding Excel cell where answers may be entered is provided in Annex 2. Questions without calculator symbol are solely explanatory – answering these would require a level of detail not readily available at this stage of project development.



Disclaimer: A full feasibility study normally closely follows the chosen methodology and requires detailed analysis of parameters and complex calculations to determine factors such as deforestation rate, emission factors, leakage, and non-permanence risk. As much of this information is not readily available at pre-initiation phase, benchmark figures from existing projects and scientific literature are used to provide bandwidths and where needed region-specific values. The technical assumptions underlying the calculation tool are presented in a separate tab of the tool. Most of these values can be adjusted manually.

3. Carbon feasibility assessment

3.1 Determine project type and eligibility

Q1. Does the project area contain a forest? Yes/No

Land in the project area (either one continuous area or multiple discrete project area parcels) must meet an internationally accepted definition of forest, such as those based on UNFCCC host country thresholds or FAO definitions (see Box 1) and must qualify as forest for a minimum of 10 years before the project start date.

Box 1. FAO definition of a forest. Land spanning more than 0.5 hectare with trees higher than five meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use. Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of five meters in situ. Areas under reforestation that have not yet reached but are expected to reach a canopy cover of 10 percent and tree height of five meters are included, as are temporarily unstocked areas, resulting from human intervention or natural causes, which are expected to regenerate. Includes: areas with bamboo and palms provided that height and canopy cover criteria are met, forest roads, firebreaks and other small open areas, forest in national parks, nature reserves and other protected areas such as those of specific scientific, historical, cultural or spiritual interest, windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectare and width of more than 20 meters, plantations primarily used for forestry or protective purposes, such as rubber wood plantations and cork oak stands. Excludes: tree stands in agricultural production systems, for example in fruit plantations and agroforestry systems. The term also excludes trees in urban parks and gardens.

Q2. Does the project area include peatland or organic soils? Yes/No

Methodologies within the REDD and IFM categories are not applicable to peatland or organic soils, except for REDD+ Methodology Framework VM0007. If the project area does contain peatland or organic soils, a project based on the appropriate Wetlands Restoration and Conservation (WRC) methodology can be formulated. VM0007 allows for combined (REDD+WRC or IFM+WRC) category projects.

Q3. Will the project activity involve conversion of forest to non-forest land use/ cover? Yes/No

Project activities involving the conversion of forest to non-forest land use/ cover are not eligible as REDD or IFM activities.

Q4. Does the country context allow for the development of VCM carbon projects?

Depending on the country or specific location of the project, additional eligibility criteria may apply. The main consideration here is the allocation of the rights to sell, trade and purchase carbon credits. These carbon rights are differently defined and interpreted in each country. Next to legal definitions of these rights, national REDD+ policies and NDCs also have an impact on who is allowed to trade carbon. Annex III provides an analysis of the carbon rights status and approaches of a selection of relevant countries in the context of SFM. This includes information on whether there



is a legal basis for carbon rights, the impact existing REDD+ programmes and the NDCs, and any relevant development that may change the current situation. Annex IV serves as a theoretical background in which some of these concepts are explained.

Q5. Will the forest be deforested in the baseline (in absence of the project activity)? Yes/No

Deforestation is the direct, human-induced conversion of forest land to non-forest land.

Q6. Is the deforestation planned (in absence of the project activity)? Yes/No

Activities designed to stop planned (designated and sanctioned) deforestation and/or unplanned (unsanctioned) deforestation are eligible as REDD activities.

Q7. Will the forest be degraded in the baseline? Yes/No

Degradation is 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 which does not result in the conversion of forest to non-forest land.

Q8. Is the forest degradation planned? Yes/No

Activities designed to stop unplanned (unsanctioned) degradation are eligible as REDD activities. This also includes illegal degradation (e.g., removal of fuelwood and/or timber extracted by non-concessionaires) on lands that are legally sanctioned for timber production.

Activities designed to stop logging, followed by protection, on forest lands legally designated or sanctioned for forestry (i.e., logging) activities (planned degradation) fall outside the scope of REDD but are included within the IFM – Logged to Protected Forest (LtPF) category.

Q9. Will the project activity involve timber harvesting? Yes/No

Under some methodologies, the project activity may involve timber harvesting. In this case, net GHG emissions are reduced by switching from conventional logging to Reduced Impact Logging. While the most obvious example is VM0035 (Methodology for Improved Forest Management through Reduced Impact Logging), some REDD methodologies also allow for (limited) harvesting of timber from the project area (e.g., VM0006, VM0015 and VM0037).

Q10. Will the project activity involve a reduction in harvest levels? Yes/No

Activities on forest lands legally designated or sanctioned for forestry (i.e., logging) activities (planned degradation) that do not involve a reduction in harvest levels compared to the baseline fall within the scope of RIL-C methodology VM0035.

3.2 Set project boundaries and scope

Spatial boundaries



Q1. Where is the project located?

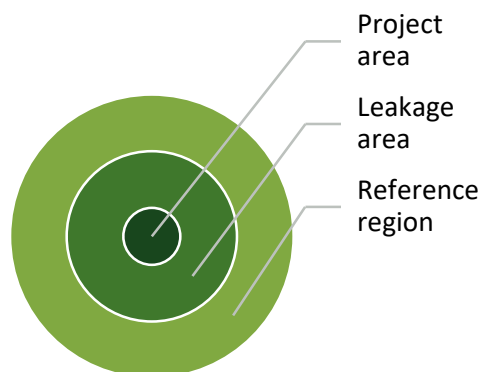
Information about the project location, forest type and forest status (see below) is used to make an estimation of the carbon stocks within the project area prior to intervention (i.e., baseline emissions) (also see Section 3.3).



Region and country (select from list)

What is the reference area?

Future emissions from deforestation or forest degradation in the project area in the absence of project activities (i.e., baseline emissions) are predicted based on (historical) deforestation or forest degradation rates in a reference area that is comparable to the project area. It is the “analytical domain” from which information about rates, agents, drivers and patterns of land use and land cover change is obtained. Guidance on selecting a reference area can be found in the applicable methodologies.



Q2. What is the total project area?

The project area is the complete area where project activities belonging to one project are implemented. The project area can grow over time if the spatial scope of project activities is expanded to new land.

Total project area (in hectares)



Q3. What is the designated area per foreseen activity?

The total project area does not necessarily coincide with the precise area where project activities belonging to one methodology take place. The area per project category (REDD+, set-asides, RIL-C) can be specified in the calculation tool. If different project activities are foreseen to be combined, this can be accounted for by dividing the total project area according to the different activities that are planned. For example, a project area of 100,000 ha could be divided into 10,000 ha (10%) set asides and 90,000 ha (90%) RIL-C. These can be fed into the calculation tool simultaneously.

Total area designated for REDD+, set-aside and RIL-C (in hectares)

What is the leakage area?

The leakage area of leakage belt is the area where pre-project activities could be displaced. Leakage may occur in REDD+ and set-aside projects when reduced timber harvesting levels lead to increased logging activities in other locations.



Q4. What is the forest type?

Based on the FAO Global Ecological Zoning framework, the following tropical forest types can be distinguished:

- A. **Tropical (evergreen) rainforest (TAr)**: annual rainfall > 1500 mm, often > 2000 mm, either no dry season or less than 3 months dry
- B. **Tropical moist deciduous forest (TAwb)**: annual rainfall 1000-2000 mm, 3-5 months dry
- C. **Tropical dry forest (TAwb)**: annual rainfall 500-1500 mm, 5-8 months dry
- D. **Tropical mountain system (TM)**: variety of climatic conditions, approximate > 1000 m altitude (local variations)



Note: Non-tropical forests fall outside the scope of this tool. Most REDD+/IFM methodologies can, however, be applied to non-tropical forest types.



Q5. What is the forest status?

- A. **Primary forest:** old-growth forests that are intact and have not been cleared
- B. **Secondary forest >20 years:** including all other forests (see definition of forest above) that have been cleared and have recovered naturally
- C. **Secondary forest <20 years**

Note: The performance method for RIL-C in East and North Kalimantan (VMD0047), which must be used in conjunction with the general RIL-C methodology (VM0035), is only applicable to harvest blocks that do not include virgin forest, i.e., forest areas previously accessible for timber harvest. Similar requirements might be included in other region-specific performance methods, though this is yet to be determined.

Stratification

If the project area does not represent one homogenous land use and land cover (LULC) class but consists out of multiple strata, these must be identified. Depending on the project and the methodology, stratification can be necessary for the project area, the leakage belt and/or the reference area. Specific guidelines for stratification will differ between methodologies and can indicate the necessary resolution and which LULC classes to consider, amongst others.

Note: To improve accuracy of the carbon revenue estimation, it is recommended to fill in the calculation tool for each of the identified strata separately and add up the results.

Temporal boundaries



Q6. What is the project crediting period?

The crediting period of a project is the time during which credits can be issued from the project in question. For AFOLU projects, the project crediting period must be a minimum of 20 years up to a maximum of one hundred years. The choice of length of the crediting period will depend on the amount of time over which carbon credits can feasibly be obtained from the project activities. This will rely on multiple factors, including length of land tenure rights, carbon credit rights, logging rights, the stability of the baseline scenario (for some methodologies, this must be reassessed every 10 years), and forest management plans.

Project crediting period in years (if unknown, a standard crediting period of 20 years may be applied)

Carbon pools

Which carbon pools must be included in the assessment?

Which carbon pools must be included in the GHG assessment for baseline consideration and project implementation depends on the methodology adopted. The only pool that must be included for all methodologies is aboveground tree biomass. Other common pools include



aboveground non-tree woody biomass, belowground biomass, dead wood, and harvested wood products. In some methodologies, litter and soil organic carbon are included.

It can occur that carbon pools are mentioned as ‘optional’ or are only ‘included if relevant.’ The former can mean that inclusion of the carbon pool is up to the project proponent, but it can also mean that inclusion of the carbon pool is subject to one or more conditions. Including optional carbon pools can lead to more work hours needed on the project documents but can also increase potential credits (depending on the pool). The latter means that the methodology includes a test that will determine if the pool should be included. If the answer is yes, inclusion of the carbon pool is mandatory.

Note: The calculation tool only includes aboveground tree biomass. Other carbon pools are conservatively excluded.

Emission sources

Which emission sources must be included in the assessment?

Significant emissions of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) from sources not related to changes in carbon pools (i.e., emission sources) must be accounted for. For example, when a project includes harvesting, the loss of carbon resulting from harvesting activities must be included in the quantification of project emissions.

The most common emission sources to be included in the GHG assessment for baseline consideration and project implementation relate to the combustion of fossil fuels in vehicles, machinery and equipment and the burning of biomass. However, as emissions are likely to be greater in the baseline scenario than in the project scenario, most methodologies provide an option to exclude project emissions, which is deemed conservative. In RIL-C methodology VM0035, emission sources are excluded altogether.

3.3 Determine baseline scenario and emissions

Determine baseline scenario

Methodologies that quantify carbon credits from forestry projects need to know what the emissions from the project area would have been in the absence of the proposed project activity to gauge the impact of the project. These theoretical emissions are called the baseline emissions. They depend on the baseline scenario: the scenario that would have taken place if no project would have been realized.

REDD+ & set-asides

Methodologies that determine carbon credits from set-asides and REDD+ projects ask for the determination of a baseline scenario and subsequently the baseline emissions. Often, the baseline



scenario will be determined with the help of VCS tool VT0001² (also used to determine additionality). VT0001 dictates baseline scenario that must at least be considered:

- A. Continuation of pre-project land use
- B. Implementation of project activities without VCS certification for carbon credits
- C. (If applicable) activities within the project boundary similar to the project activities that are a result of legal requirements or that are an extrapolation of similar activities in the region

The most plausible baseline scenario is thereafter determined based on methodology-specific guidance. Under some standards, the baseline must be reassessed periodically (usually every 10 years), because regional drivers of forest degradation and land use change will deviate over time.

There are exceptions for the use of VT0001 in REDD+ and set-aside methodologies. VM0006, for example, names the most likely baseline scenario as a continuation of existing or historical carbon stock changes within the project area. Moreover, there are methodologies which allow only for one specific baseline scenario. An example is VM0010: Methodology for Improved Forest Management: Conversion from Logged to Protected Forest. Logically, the baseline scenario must in this case be planned timber harvest.

RIL-C

VT0001 is not used for the RIL-C methodology (VM0035). Instead, a baseline is implemented by measuring the impact that a project has against regionally specific "crediting baselines" for the emissions from felling, skidding, and hauling. These must be calculated and justified in a separate document that must be approved by VCS before use in methodology VM0035.

Box 2. REDD+ example: Cikel Brazilian Amazon REDD APD Project Avoiding Planned Deforestation (VERRA ID: 832). The company behind the Cikel REDD project were planning to convert 20% of their forest concession to agricultural land for cattle grazing, as is permitted per Brazilian law. Planned deforestation and land use conversion was therefore the baseline scenario for this project. Instead, they opted to start a REDD+ carbon project under VERRA. As such, the carbon that is stored in the vegetation that would have been destroyed under the baseline scenario could be accounted for and translated to carbon credits. They planned sustainable timber harvest from the REDD+ project area. The baseline emissions were calculated by calculating the amount of carbon that will remain stored in trees if deforestation is avoided minus the carbon that will leave the forest through sustainable timber harvest.

Determine additionality

The demonstration of additionality, i.e., a project activity that results in emission reductions and/or removals that are in excess of what would be achieved under a "business as usual" scenario, is essential to the integrity and market acceptance of carbon projects. If a project is not deemed additional according to the indicated tools, a project may not issue carbon credits and consequently cannot obtain revenue from them.

² <https://verra.org/wp-content/uploads/2017/11/VT0001v3.0.pdf>



REDD+ & set-asides

For most AFOLU projects, additionality must be demonstrated through VCS Tool VT0001, in which additionality can be determined in two ways. The first option is an investment analysis, in which the project proponent demonstrates that the project scenario is not the most economically/financially viable of all identified land-use scenarios. The simplest option that VCS offers here is what they name the ‘simple cost analysis’ in which it must be shown that the project activities generate no financial benefits except for those derived from carbon credits.

If the investment analysis is unable to demonstrate additionality, a combination of a barrier analysis and common practice analysis can be performed. In the barrier analysis, it must be investigated whether there are any barriers to the project that cannot be overcome without financing from carbon credits. These barriers should not impede at least one of the alternative land-use scenarios. These can be, amongst others, investment barriers, institutional barriers, technological barriers, cultural barriers, environmental barriers, and land tenure barriers. Barrier analysis must be complemented by a common practice analysis, in which it must be established to what extent similar projects have been (and will be) implemented in the region. Other registered VCS AFOLU projects are not considered. If such projects are identified, it must be investigated if they were financially attractive and faced any barriers. Any differences between the alternative projects and the proposed project must be explained to ensure additionality.

RIL-C

RIL-C offers an alternative option for determining additionality. Firstly, a regulatory surplus must be demonstrated. This means that project activities must fall outside of any law, statute, or other regulatory framework. Hereafter, additionality is determined by project outperforming the performance benchmark for felling impacts, skidding impacts, and hauling impacts, which must be set in the regional performance method. As such, the ‘improvements’ regarding felling, skidding, and hauling impacts necessary to obtain additionality will vary geographically.

Quantify baseline emissions

When the baseline scenario has been determined, the emissions that would have taken place in the baseline scenario can be quantified.

REDD+

In the case of REDD+ projects, these emissions will signify deforestation or forest degradation that would have taken place if the project activities were not implemented. Emission avoidance will be higher if the baseline scenario is more extreme. For example, predicted deforestation will lead to more carbon credits per hectare than predicted (mild) forest degradation.

Exact quantification of avoided emissions in REDD+ project will depend on numerous factors. The data used will differ amongst methodologies but will generally be a combination of historical remote sensing data and historical data from other sources such as scientific publications or management. It can also include field data that has to be used to validate remote sensing data.



The number of credits that are generated per hectare will depend on whether logging is involved in the project scenario and how high the logging intensity is. Moreover, it will depend on the severity of the baseline scenario, as mentioned before.

When the baseline involves deforestation, a baseline deforestation rate must be determined. If available, a VCS or UNFCCC registered baseline deforestation rate that is applicable to the reference region, project area and leakage area, must be used. Otherwise, a projected deforestation rate must be determined by the project proponent. The latter is mostly done by using the average annual deforestation rate measured during the historical reference period.

The deforestation rate used in the calculation tool is determined as the average deforestation rate in (a part of) the country in which the project will take place according to the latest peer-reviewed publication.

Often, areas for implementation of REDD+ will be chosen in high-deforestation landscapes. Therefore, the option is included to choose a higher deforestation rate than the national average in the calculation tool. If the area surrounding the project area has been recently, heavily deforested it can be assumed that the deforestation pressure on the project area is medium or high. If no such indications exist, low should be chosen for conservativeness.



Q7. How intense is deforestation pressure in the project area?

Deforestation rate (%) in the project area (if unknown, the national average deforestation rate is applied as default value)

Set-asides

Baseline emissions for set-aside projects are equivalent to the wood that was planned to be harvested, as verified through forest management plans. Carbon credits will be based on the avoidance of these emissions. To calculate the amount of wood that would have been taken out of the forest, the baseline harvest intensity and rotation length must be known:



Q8. What was the foreseen harvesting/cutting intensity in the baseline scenario? M^3 / ha

Q9. What was the foreseen rotation length/cutting cycle in the baseline scenario? **Years**

RIL-C

The baseline emission for RIL-C is determined in the regional performance method. Currently a benchmark only exists for Kalimantan in Indonesia, but a benchmark is under development for the Congo Basin, Guyana, and the Yucatan peninsula. The benchmarks use emission estimated for regional average forest management practices. Given that not all logging companies implement best-practice, their average emissions from logging practices will generally be higher than those from RIL-C.



Baseline emissions are not explicitly implemented in the calculation tool. RIL-C emission reduction approximations are based on average CO₂e emission reductions per m³ of harvested timber (further explained under 3.4). This data was collected from a range of published literature.



Q10. What was the foreseen harvesting/cutting intensity in the baseline scenario? M³ / ha

Q11. What was the foreseen rotation length/cutting cycle in the baseline scenario? Years

Note: Baseline harvesting intensity and rotation time do not need to be filled in separately for set-asides and RIL-C.

Note: Harvesting intensity (both baseline and project) in m³/ha is converted to tCO₂e through multiple conversion factors:

- Volume to weight: 0.871 (m³/1000 kg)
- Carbon fraction of weight: 0.47 (kg/kg)
- Carbon to CO₂: 44/12

3.4 Determine project scenario and emissions

REDD+ & set-asides

The baseline rate of deforestation (percentage forest loss per year) will be translated to the amount of GHG emissions that can be avoided under the project scenario.

Note: Only deforestation is included in the calculation tool. Drivers and concurrent intensity of forest degradation are incredibly varied and geographically specific. As such, no benchmark data could be collected for avoided forest degradation and no emission reductions can be calculated.

If logging is a part of the project scenario (not applicable to set-asides), the emissions from harvesting activities must be subtracted from the avoided emissions under the project scenario (also see section 4.2 – emission sources)



Q12. Is logging a part of the project scenario? Yes/No

Q13. What is the harvesting/cutting intensity in the project scenario? m³ / ha

Q14. What is the rotation length/cutting cycle in the project scenario? Years

RIL-C

A few RIL-C practices can be identified with the potential to reduce carbon emissions from harvesting operations. Emission reductions can be obtained from interventions concerning each of the following categories:

- Felling
- Skidding
- Hauling



Common interventions under RIL-C hereby include improvements in pre-harvest inventory, felling, bucking and extraction practices, improved skidding equipment, improved (dozer) skid trail planning, improved (long-line) winching, directional felling, and narrower and/or shorter haul roads and smaller log landings.

Because the quantification of benchmark data under the RIL-C methodology has only been accomplished for Kalimantan and Yucatan, calculations of carbon benefits from RIL-C in the calculation tool are based on broader average emission reductions from the implementation of RIL in different tropical countries and regions from peer-reviewed publications. Data were averaged per continent, yielding an average CO₂e reduction per m³ for America, Africa, and Asia. Generally, included publications looked at RIL implementation in felling, skidding, and hauling. If the proposed project will not include interventions in all three categories (felling, skidding, hauling), the estimates produced by the calculation tool are probably too high and should be interpreted with care.

To further finetune what will be required to achieve emissions reductions in an existing forest concession, the following questions may be answered:

Is the project area FSC or PEFC certified? Yes/No

Does forest management in the project area already adhere to best practice for RIL? Yes/No

FSC/PEFC certification and RIL implementation have a lot in common with the requirements for RIL-C set by VERRA. As such, implementing RIL-C will be relatively cheap for projects that possess FSC/PEFC certification or adhere to best practice for RIL since many of the activity and monitoring requirements for VCS VM0035 will already be met.

Note: A deduction in total harvest intensity in the project scenario compared to the baseline is not allowed in the RIL-C methodology. As such, the baseline logging intensity is equal to the project scenario logging intensity.

3.5 Quantify leakage

There are two types of leakage: activity-shifting leakage and market leakage. The former implies the risk that activities causing emissions shift to other locations (e.g. when timber harvesting is reduced in the project area, it may cause an increase in timber production elsewhere), whereas the latter means that the market equilibrium is changed as a consequence of project implementation, causing other actors to shift their activities (e.g. when a large conservation project reduces the local timber supply, this may drive up prices and pressure on forests elsewhere). Carbon methodologies apply discounts for such leakage risks. Leakage due to market effects is equal to the baseline emissions from logging and fuelwood/charcoal extraction multiplied by a leakage factor. These discounts are then deducted from the total estimated GHG emission reductions/ removals resulting from project implementation.



While the exact leakage assessment requirements differ per methodology, projects may apply the appropriate market leakage discount factor based on the proposed project activity:

- When a SFM activity has no effect or minimal effect on total timber harvest volumes, leakage is not applicable. In this case the market leakage discount factor = 0%.
- When a SFM activity leads to a shift in harvests across time periods but minimal change in total timber harvest over time, leakage risk is considered low. The market leakage discount factor = 10%.
- When a SFM activity substantially reduces harvest levels permanently, leakage risk is moderate to high. The market leakage discount factor then depends on whether the ratio of merchantable biomass to total biomass is higher, similar, or lower within the area to which harvesting is displaced compared to the project area.
 - If it is higher → market leakage discount factor = 20%
 - If it is similar → market leakage discount factor = 40%
 - If it is lower → market leakage discount factor = 70%

Many REDD+ methodologies (e.g., VM0007 and VM0015) use a leakage belt for leakage approximation. The difference in deforestation activities before and after project implementation in the leakage belt is then used as an indicator of leakage. Leakage can be argued to be zero in this case when the REDD+ project area is bordered by land that cannot be subject to deforestation. This can be due to various causes:

- The project area is bordered by other VCS certified forests and/or;
- The project area is bordered by forest that cannot be deforested, e.g., effectively protected areas and/or forest with no road access.

Otherwise, leakage is the pre- to post-project change in emissions. If this change is zero (or negative) leakage can likewise be set to zero.



Q15. What is the leakage risk rate?

A standard leakage risk rate of 40% will be applied to REDD+ and set-aside activities in the calculation tool with the possibility to increase or decrease this value manually

Note: Since a decrease in harvesting regimes is not allowed under RIL-C methodology VM0035, leakage is not relevant for projects that only implement VM0035 and leakage in the calculation tool is set to zero.

Note: Currently, Verra does not offer an option to account for international leakage, which is hard to approximate due to unclear causality and impaired traceability. As such, leakage occurring outside of the host country does not have to be accounted for.

3.6 Quantify net emission reductions



The net emission reduction, i.e., GHG benefit, of a project equals the difference between the project scenario and the baseline scenario of carbon stocks adjusted for project emissions (fossil-derived CO₂, N₂O and CH₄) and leakage emissions.

3.7 Quantify Verified Carbon Units

The total amount of credits that can be sold on the voluntary carbon market are called Verified Carbon Units (VCU). The amount of VCUs that can be credited to the project each year over the project crediting period is based on the net emission reductions/ removals and deductions to account for (non-permanence) risk and (data) uncertainty.

All projects aiming for VCS certification are assessed by qualified, independent third parties known as validation/verification bodies (VVB). After selecting a methodology and developing a project description, the VVB determines whether the project meets all standard and methodology requirements (validation). If this is the case, the project may be submitted for registration. Subsequently, the project owner monitors the project activities, after which the VVB verifies emission reductions and removals (every 5-10 years depending on the project) and the project owner may submit the project for verification approval. In the final step, the VCUs are issued in the Verra registry. The total validation and verification process (including a first audit and several follow-up audits) may take up to several years, with audit costs up to \$20,000 per audit (excluding monitoring and technical assistance costs).

Non-permanence risk

Non-permanence risk in AFOLU projects must be addressed by means of a project risk analysis, using the AFOLU Non-Permanence Risk Tool³, which determines a number of credits to be deposited in the AFOLU pooled buffer account. Buffer credits are not VCUs and cannot be traded.

The non-permanence risk rating percentage is determined based on the ratings of each risk factor in each of the following risk categories; internal risk (including project management, financial viability, opportunity cost and project longevity), external risk (including land tenure and resource access/ impacts, community engagement and political risk) and natural risk (fire, pests and diseases, extreme weather, geological risk and other natural risk). While the rating of some of these risk factors requires detailed information on the proposed project activities, other ratings can be determined without knowing such project specifics. For example, political risk must be based on country specific governance scores, which are pre-determined by the World Bank, and project longevity risk simply depends on whether there is a legal agreement or requirement to continue the management practice.

Preparing a non-permanence risk report is mandatory for all projects. Projects that include tree harvesting must also put in place a management system that ensures that the carbon against which VCUs are issued is not lost during a final cut with no subsequent replanting or regeneration.

³ https://verra.org/wp-content/uploads/2019/09/AFOLU_Non-Permanence_Risk-Tool_v4.0.pdf



The minimum non-permanence risk rating is 10%, regardless of the rating calculated using the Non-Permanence Risk Tool. The maximum acceptable risk rating is 60%, above this value project risk is deemed unacceptably high and the project will not be eligible for crediting.



Q16. What is the non-permanence risk rate?

A standard non-permanence risk rating of 10% will be applied to the calculation tool with the possibility to increase or decrease this value manually

Uncertainty deduction

Calculations for set-aside and REDD+ projects are subject to an uncertainty deduction. This deduction relates to the variability of the data, where a higher variability (inaccuracy) leads to a higher deduction. This uncertainty deduction can be applied to both *ex-ante* and *ex post* data and calculations. Usually, methodologies will include a table which lists the deduction factor that must be applied for various levels of uncertainty. These will often include a cut-off value. If the uncertainty is higher than the given cut-off value, the project is not eligible. On the other hand, there is also often a cut-off value at the other end of the spectrum, where uncertainty is so low that no deduction needs to be applied.

For REDD+, the uncertainty percentage is estimated using VCS module VMD0017⁴. For RIL-C, the uncertainty deduction (related to the calculation of emission reductions from impact parameters and uncertainty with respect to estimates of impact parameters) are integrated in the applicable region-specific RIL-C performance method module.



Q17. What is the uncertainty percentage?

A standard value of 2% uncertainty deduction will be applied

Note: This is an arbitrarily chosen percentage based on registered VCS projects. During project development and implementation, uncertainty must be calculated and transformed to deduction rates at various instances throughout the methodology.

3.8 Monitoring

Monitoring will be necessary to assess the progress of the project and to determine the amount of carbon that has been stored since the project inception or the previous monitoring period. Credits are approximated *ex ante* but the exact number of credits that can be issued will only be determined after monitoring *ex post*. In general, monitoring takes place on an annual basis.

In the case of REDD+ and set-aside projects, monitoring is based on permanent sampling plots (PSPs). The number and distribution of the PSPs will be determined by the methodology and is usually dictated by the size of the project area, where a larger project area warrants more PSPs. Of

⁴ https://verra.org/wp-content/uploads/2020/09/VMD0017-X-UNC_v2.2.pdf



course, if new instances are added to the project (such as in grouped projects), these will have to be integrated into the monitoring program through the placement of PSPs.

Monitoring methods and plans for RIL-C must be written up in the regional performance method and can thus differ between regions or projects. The performance method that is currently available for Kalimantan foresees a method in which monitoring takes place along logging roads.

Although monitoring is not of immediate concern when drafting a project proposal, it should be considered that monitoring is an integral part of the project during the entire crediting period and that it, depending on the methodology, can be very resource intensive. The most important monitoring requirements per project category are indicated in Annex V.

3.9 ESG impact

While the VCS program enables delivery of credits for quantified greenhouse gas emissions reductions or removals, validation and verification to Climate, Community & Biodiversity (CCB) Standards⁵ provide assurances of the social and environmental quality of the project's implementation. CCB Standards provide a clear framework of issues to consider and processes to develop during design of any site-based activity that could impact local communities and the environment and can be used in conjunction with VCS AFOLU projects. CCB certification, and therewith the guarantee that a project has a positive social and environmental impact while generating carbon credits, can be a condition for buyers and investors and can lead to higher carbon credit prices.

Double certification with the CCB standard requires a slightly different approach. Combined project development, validation and verification templates are available to combine VCS and CCB⁶. Apart from the quantification of GHG emission reductions and removals, the VCS-CCB also requires the establishment of a with -and without-project community and biodiversity scenario, as well as extensive documentation on the engagement of (local) stakeholders in project design and implementation, among others.

3.10 Cost-benefit analysis

The potential of a SFM based carbon project depends on the carbon benefits generated by the project as well as the costs associated with project development and auditing. A cost-benefit tool (presented in a separate document) was developed to assess the financial viability of the proposed project. A brief explanation of the tool is provided below.

The Assumptions sheet contains General settings (e.g., FX rates, carbon prices), Project settings (size, carbon yields, expected time frames), and Project development & audit costs (incl. yearly

⁵ <https://verra.org/project/ccb-program/>

⁶ <https://verra.org/project/ccb-program/rules-requirements-and-guidance/>



project cost, marketing, PD development, audits, monitoring, and registry costs). In this sheet all orange-coloured cells are meant for editing.

Settings may be edited in accordance with the proposed project and based on the output of the calculation tool (carbon yield in tCO₂/ha/year). Default values may also be left unchanged. This is practical for the registry costs, for example, which are based on the most recent version of Verra's Fee Schedule.

For some settings, there is both an IFM (set-aside and RIL-C) and REDD option, because of different values or assumptions for both.

The REDD sheet contains the cost-benefit analysis for a REDD project (no edits to be made). The first lines and grey-green blocks show the set timeline and how this translates into a yearly planning. After that, from line 15 and onwards, are calculations on inputs (credits), revenues and expenditures, resulting in a (gross) profit margin and IRR calculation (calculation is pre-tax).

The IFM sheet is largely similar to the REDD sheet (also, no edits to be made), except that this calculation is for an IFM project. The only additional cost element is the regional performance method development for RIL-C.

Box 3. Cost-benefit calculation example: set-aside. We will hypothesize a set-aside project of 30,000 hectares with no CCB certification that will start in 2022 with an operational start in 2022, no back-dating and verification every two years. The carbon calculation tool has shown that yearly carbon credits generated per hectare will be approximately 3.5 tCO₂e. Output for a set-aside project will appear in the IFM tab of the cost-benefit tool. If no updates information is available, **general financial** assumptions (including all prices) can remain unchanged, with the exception of the option for **CCB certification** which should be changed according to need (to **No** in this case). **Project size** is set to 30,000 hectares, **carbon yield** to 3.5 tCO₂e, **operational start date** to 2022, **project start date** to 2022 and **# years verification dates back** to 0. The **verification interval** is set to 2. For both REDD+ and IFM, the time needed for different phases of project development are estimated in the tool. Unless indicated otherwise, these can remain unchanged. The same is true for **project development & audit costs**. **Yearly project owner costs start date** will generally be the same as the operational start date (2022 in this case). **Registry costs** need only be updated once a new version of Version 4.1 of Verra Program Fee Schedule becomes available. After filling in the assumptions of the tool, the IFM tab now immediately shows a yearly overview of the **revenue**, **expenditures** and **gross profit** for a 25-year period after project initiation. In this hypothetical case, the total profit over the 25-year period is ~€14 million, averaging €560,000 in profit per year.

4. References

- Angelsen, A., Martinus, C., de Sey, V., Duchelle, A. E., Larson, A. M., & Thu Thuy, P. (Eds.). (2018). *Transforming REDD+: Lessons and new directions*. CIFOR. <https://doi.org/10.17528/cifor/007045>
- Biofíllica. (2020). *REDD+ projects in Brazil*. <https://www.biofilica.com.br/en/redd-projects-in-brazil/>
- CAFI. (2019). *65 million agreement for R. Congo forest signed in Paris*. Central African Forest Initiative. <https://www.cafi.org/node/164>
- Cambio Climático. (2021, November 30). *Following COP26 climate talks, the San José Principles Coalition Recommits to Principles for High-Integrity Carbon Markets, Pledges to Act on Them Together*. Dirección de Cambio Climático. <https://cambioclimatico.go.cr/following-cop26-climate-talks-the-san-jose-principles-coalition-recommits-to-principles-for-high-integrity-carbon-markets-pledges-to-act-on-them-together/>
- Carbon Pulse. (2022, January 13). *Peru joins ranks of nations pledging to adjust voluntary credits*. Carbon Pulse. <https://carbon-pulse.com/148256/>
- Corriveau-Bourque, A., Almeida, F., & Frechette, A. (2018). *Uncertainty and Opportunity: The Status of Forest Carbon Rights and Governance Frameworks in Over Half of the World's Tropical Forests*. Rights and Resources Initiative. <https://doi.org/10.53892/fnnp5361>
- Cozijnsen, J. (2020, December 18). *Opinion A Tale of Two Transactions: the Corresponding Adjustments Story*. Ecosystem Marketplace. <https://www.ecosystemmarketplace.com/articles/22353/>
- del Aguila, P. P. (2014). REDD+ on the ground | A case book of subnational initiatives across the globe. In E. O. Sills, S. S. Atmadja, C. de Sassi, A. E. Duchelle, D. L. Kweka, I. A. P. Resosudarmo, & W. D. Sunderlin (Eds.), *REDD+ on the ground*. Center for International Forestry Research. <https://www2.cifor.org/redd-case-book/>
- Fittkau, E. J., & Klinge, H. (1973). On Biomass and Trophic Structure of the Central Amazonian Rain Forest Ecosystem. *Biotropica*, 5(1), 2. <https://doi.org/10.2307/2989676>
- Freitas, F. L. M., Englund, O., Sparovek, G., Berndes, G., Guidotti, V., Pinto, L. F. G., & Mörtberg, U. (2017). Who owns the Brazilian carbon? *Global Change Biology*, 24(5), 2129–2142. <https://doi.org/10.1111/gcb.14011>
- Hazim, A. (2021). Govt agrees for Voluntary Carbon Markets development. *The Malaysian Reserve*. <https://themalaysianreserve.com/2021/09/20/govt-agrees-for-voluntary-carbon-markets-development/>
- Karsenty, A., Vogel, A., & Castell, F. (2014). “Carbon rights”, REDD+ and payments for environmental services. *Environmental Science & Policy*, 35, 20–29. <https://doi.org/10.1016/j.envsci.2012.08.013>
- KETSA. (2021). *Redd plus Finance Framework (RFF)*. Ministry of Energy and Natural Resources (KETSA). <https://redd.ketsa.gov.my/redd-plus-finance-framework/>
- Kiernan, P. (2021). Malaysia to establish emissions trading scheme, guidelines for voluntary carbon market. *Carbon Pulse*. <https://carbon-pulse.com/138923/>

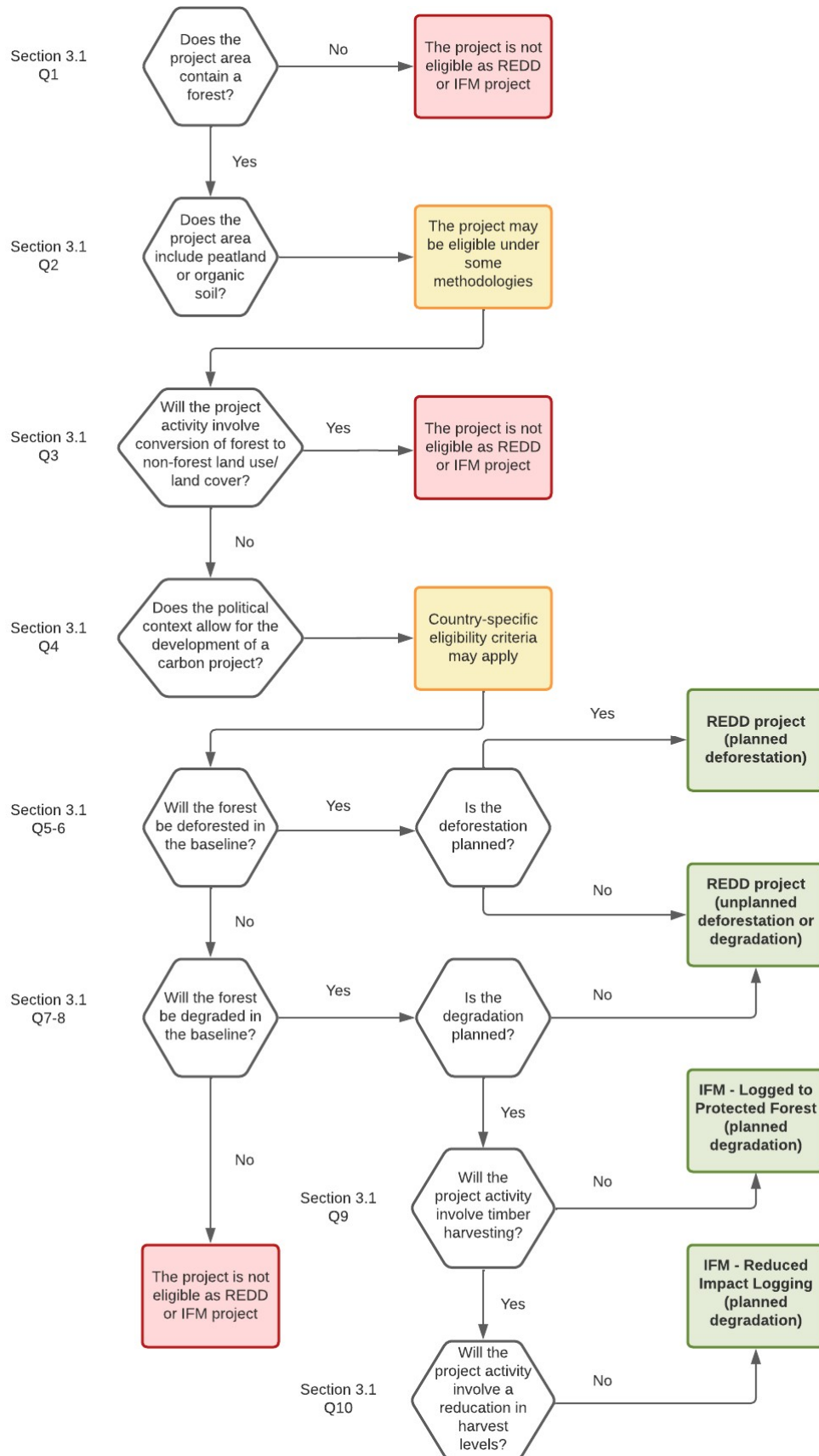


- Kreibich, N., & Obergassel, W. (2019). The Voluntary Carbon Market: What may be Its Future Role and Potential Contributions to Ambition Raising? In https://epub.wupperinst.org/frontdoor/deliver/index/docId/7396/file/7396_Carbon_Market.pdf.
- Loft, L., Ravikumar, A., Gebara, M., Pham, T., Resosudarmo, I., Assembe, S., Tovar, J., Mwangi, E., & Andersson, K. (2015). Taking Stock of Carbon Rights in REDD+ Candidate Countries: Concept Meets Reality. *Forests*, 6(12), 1031–1060. <https://doi.org/10.3390/f6041031>
- Millar, I., Carranza, A., & Paniagua, V. (2020, December 1). *Peru: Government launches the “National Registry of Mitigation Measures” digital platform during 2020 NYC Climate Week*. Global Compliance News. <https://www.globalcompliancenews.com/2020/12/01/peru-government-launches-the-national-registry-of-mitigation-measures-digital-platform-during-2020-nyc-climate-week-29102020/>
- MINAM. (2020, September 15). *Minam desarrolla plataforma para registrar y transferir medidas sobre reducción de gases de efecto invernadero*. [Www.gob.pe](http://www.gob.pe). <https://www.gob.pe/institucion/minam/noticias/302686-minam-desarrolla-plataforma-para-registrar-y-transferir-medidas-sobre-reduccion-de-gases-de-efecto-invernadero>
- MINAM. (2022). *MEcanismos de REtribución por Servicios Ecosistémicos – MERESE*. Dirección General de Economía Y Financiamiento Ambiental. <https://www.minam.gob.pe/economia-y-financiamiento-ambiental/mecanismos-de-retribucion-por-servicios-ecosistemas-mrse/>
- MMA. (2016). *The National REDD+ Committee*. [Redd.mma.gov.br](http://redd.mma.gov.br). <http://redd.mma.gov.br/en/the-national-redd-committee>
- Mokany, K., Raison, R. J., & Prokushkin, A. S. (2006). Critical analysis of root : shoot ratios in terrestrial biomes. *Global Change Biology*, 12(1), 84–96. <https://doi.org/10.1111/j.1365-2486.2005.001043.x>
- Montoya-Zumaeta, J. G., Wunder, S., & Tacconi, L. (2021). Incentive-based conservation in Peru: Assessing the state of six ongoing PES and REDD+ initiatives. *Land Use Policy*, 108, 105514. <https://doi.org/10.1016/j.landusepol.2021.105514>
- Pham, T. T., Moeliono, M., Angelsen, A., Brockhaus, M., Gallo, P., Hoang, T. L., Đào Thi, L. C., Ochoa, C., & Bocanegra, K. (2018). Strategic alignment: Integrating REDD+ in NDCs and national climate policies. In A. Angelsen, C. Martius, V. de Sy, A. E. Duchelle, A. M. Larson, & T. T. Pham (Eds.), *Transforming REDD+: Lessons and new directions*. CIFOR. <https://www.cifor.org/knowledge/publication/7066>
- Pinsky, V. C., Kruglianskas, I., & Victor, D. G. (2019). Experimentalist governance in climate finance: the case of REDD+ in Brazil. *Climate Policy*, 19(6), 725–738. <https://doi.org/10.1080/14693062.2019.1571474>
- Ravikumar, A., Larson, A. M., Duchelle, A. E., Myers, R., & Gonzales Tovar, J. (2015). Multilevel governance challenges in transitioning towards a national approach for REDD+: evidence from 23 subnational REDD+ initiatives. *International Journal of the Commons*, 9(2), 909. <https://doi.org/10.18352/ijc.593>
- REDD+ Business Initiative. (2020, April 9). *Near All-time high for Voluntary offsets in 2018; largely due to REDD+ projects in Peru*. REDD+ Business Initiative. <https://reddplusbusiness.com/voluntary-offsets-near-all-time-high-in-2018-largely-due-to-redd-projects-in-peru/>

- RRI. (2021). *Status of Legal Recognition of Indigenous Peoples', Local Communities' and Afro-descendant Peoples' Rights to Carbon Stored in Tropical Lands and Forests*.
<https://doi.org/10.53892/kmmw8052>
- SERNANP. (2021, May 5). *Proyectos REDD+ en Perú marcan la transición hacia la gestión efectiva y sostenible de las áreas naturales protegidas*. *Www.gob.pe*.
<https://www.gob.pe/institucion/sernanp/noticias/491188-proyectos-redd-en-peru-marcan-la-transicion-hacia-la-gestion-efectiva-y-sostenible-de-las-areas-naturales-protegidas>
- South Pole. (2022). *The voluntary carbon market: eight things to know for the year ahead*.
<https://www.southpole.com/reports/voluntary-carbon-market-trend-report-2022>
- State of Gabon. (2021). *Gabon's Proposed National REDD+ Forest Reference Level*.
Redd.unfccc.int. <https://redd.unfccc.int/submissions.html?country=gab>
- Streck, C. (2020). Who Owns REDD+? Carbon Markets, Carbon Rights and Entitlements to REDD+ Finance. *Forests*, 11(9), 959. <https://doi.org/10.3390/f11090959>
- Sunderlin, W. D., Larson, A. M., & Sarmiento Barletti, J. P. (2018, December 1). *Land and carbon tenure: Some – but insufficient – progress*. CGIAR.
<https://cgspace.cgiar.org/handle/10568/112445>
- Todd, K. (2022, February 28). *Nationally Determined Contributions and REDD+: demonstrating the potential of forests for NDC Enhancement and Implementation*. UNREDD. <https://www.un-redd.org/post/nationally-determined-contributions-and-redd-demonstrating-potential-forests-ndc-enhancement-0>
- UN REDD. (2021, December 1). *Peru 2021*. UNREDD. <https://www.un-redd.org/partner-country/peru-2021>
- UNFCCC. (2016). *NDC of Bolivia*. *Www4.Unfccc.int*.
<https://www4.unfccc.int/sites/NDCStaging/pages/Party.aspx?party=BOL>
- UNFCCC. (2020). *NDC of Brazil*. *Www4.Unfccc.int*.
<https://www4.unfccc.int/sites/ndcstaging/pages/Party.aspx?party=BRA>
- UNFCCC. (2021). *NDC of Indonesia*. *Www4.Unfccc.int*.
<https://www4.unfccc.int/sites/NDCStaging/pages/Party.aspx?party=IDN>
- Verra. (2021, April 15). *Version 4 of the Jurisdictional and Nested REDD+ (JNR) Framework Released*. Verra. <https://verra.org/version-4-of-the-jurisdictional-and-nested-redd-jnr-framework-released/>
- Verra. (2022). *Methodologies*. Verra. <https://verra.org/methodologies/>
- WWF Brazil. (2020, December 11). *New Brazilian NDC reduces the country's climate ambition, against the spirit of the Paris Agree*. *Www.wwf.org.br*. <https://www.wwf.org.br/?77508/New-Brazilian-NDC-reduces-the-country-s-climate-ambition-against-the-spirit-of-the-Paris-Agreement>
- Zhongming, Z., Linong, L., Xiaona, Y., Wangqiang, Z., & Wei, L. (2019). *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*.



Annex I: Decision tree – eligibility



Annex II: Overview questions – input calculation tool

1. Where is the project located?
2. What is the total project area?
3. What is the designated area per foreseen activity?
4. What is the forest type?
5. What is the forest status?
6. What is the project crediting period?
7. How intense is deforestation pressure in the project area? (REDD+)
8. What was the foreseen harvesting/cutting intensity in the baseline scenario? (IFM)
9. What was the foreseen rotation length/cutting cycle in the baseline scenario? (IFM)
10. What was the foreseen harvesting/cutting intensity in the baseline scenario? (RIL-C)
11. What was the foreseen rotation length/cutting cycle in the baseline scenario? (RIL-C)
12. Is logging a part of the project scenario?
13. What is the harvesting/cutting intensity in the project scenario?
14. What is the rotation length/cutting cycle in the project scenario?
15. What is the leakage risk rate?
16. What is the non-permanence risk rate?
17. What is the uncertainty percentage?



Annex III: Carbon rights country profiles

Carbon rights are defined as the right to benefit from sequestered carbon. Understanding who has the rights to carbon captured by forest projects is essential if an organisation wants to financially benefit from the sales of credits flowing from these projects (Streck, 2020). Project proponents of SFM carbon projects must be able to show control over the project area and ownership of carbon rights for the project area at the time of verification. SFM operators therefore need to be aware of the carbon rights circumstances in their country to know if they are allowed to benefit from a forest carbon project.

In some countries it may be the case that only the government can benefit from the capture of carbon, whereas in other countries there may be ample room for the development of carbon projects by non-state actors. Also, in some countries legislation on carbon rights already exists, while in others no legal framework is available. In addition to carbon rights, national policies on REDD+, or government pledges to achieve their NDCs under the Paris Agreement should also be considered, as these can equally influence the potential for SFM carbon projects. While country progress on these topics has been slow, developments in several countries are on its way and potential change in rules and regulations should always be considered by project developers.

To bring some clarity into the complex topic of carbon rights, we have created seven country profiles detailing the current situation on carbon rights and the potential for an SFM carbon project in these countries. The information on these countries can be used to guide decision-making, identify ways to enter the voluntary carbon market, and determine the feasibility of carbon projects in the specific country. More generally, it helps to create a sense of implications that carbon rights allocation can have for SFM operators with an interest in developing carbon projects.

For some countries little information is available, whereas for others more in-depth information could be found. For each country we first discuss if there is any legal basis for carbon rights where we describe any legislation, policy or other framework that determines who has the rights to carbon and who can benefit from the sales of carbon credits. Subsequently, we discuss if there is a national REDD+ framework or NDC pledges in the country that may impact the potential for an SFM carbon project. Following this we discuss if there are any forest carbon projects developed by private parties on the voluntary market. We will only look at the AFOLU project category and will point out if these projects are using one of the VCS methodologies suitable for SFM carbon projects (See Table 1 of the guiding document). Finally, we discuss any known developments in the country that may impact the potential for developing SFM carbon projects. From these different sections we will give an indication on the potential for an SFM carbon project within the country's framework. After the country profiles, we show an overview table of the possibilities and criteria of SFM carbon in the countries discussed in section 8.

Annex III of this document serves as a complimentary guidance in which some of the theoretical concepts on carbon rights and REDD+ are further explained.



1. Bolivia

Legal basis for carbon rights

In Bolivia, the issue of carbon is defined by the Framework Law of Mother Earth (Law No. 300). This Law states that the “environmental functions and natural processes of the components and life systems of Mother Earth, are not considered as merchandise but as gifts from the sacred Mother Earth.” Article 32 paragraph 5 states that all plans and programs to reduce greenhouse gas emissions will be focused on the non-commercialization of the environmental functions of the components of Mother Earth, indicating that they will not be including payment for carbon mechanism by private transactions.

National REDD+ framework and NDCs

Forests are at the forefront of Bolivia’s NDCs, but mostly in the context of sustainable management, increasing forest cover, reducing illegal deforestation, and promoting the livelihoods of forest people. The Law of Mother Earth framework forms also the basis of the country’s NDC and there are strong objections against capitalism and the commodification of resources. As an implementing mechanism for the NDCs Bolivia highlights its “Joint Mitigation and Adaptation Mechanism for Integral and Sustainable Management of Forests” (JMA), which is also embedded in Law no. 300 (Art. 54). This mechanism, similar to the NDC, has as its main objectives the comprehensive and sustainable use and protection of Mother Earth’s Forest; the non-commodification of the forests’ environmental functions; and strengthening the livelihood of Indigenous peoples living in the forest. It intends to accomplish this through various policy, support, and education efforts (UNFCCC, 2016). Although some REDD+ preparational activities have taken place in the past, the country’s focus is now on the JMA.

Existing forest carbon projects

There is currently only one registered voluntary market project (REDD+) in the Verra database that uses one of the methodologies suitable for SFM carbon projects. Two other projects (IFM & REDD+) are currently under validation, but as the project documents were written in 2013 it seems unlikely that these projects will be registered.

Ongoing developments on the forest carbon market

Except for the further development and roll-out of the country’s NDCs and their JMA, no other developments are known.

Potential for an SFM carbon project

The potential for an SFM carbon project in Bolivia is limited at the moment. The actual legislation, which comes down to a prohibition of trade in carbon emission rights, was developed when the country was governed by the MAS party, then headed by Evo Morales. This party is again in power since 2021 after disputed elections and transfer of power to a temporary government in 2019. During the latest COP, President L. Arce firmly rejected carbon markets as policy instrument and considers it ‘carbon colonialism’ tied to ‘green capitalism.’ Therefore, no carbon policy change is



expected under the MAS government that would open up possibilities for SFM operators to receive carbon benefits. Even with a change of government more open to carbon schemes, this topic will likely not be high on the public agenda.

2. Brazil

Legal basis for carbon rights

Brazil is a federal republic with twenty-six states that have significant autonomy. The federal government and the states have concurrent jurisdiction on forest legislation, and following the Brazilian Constitution, states have full legislative authority in the absence of federal law (Art. 24) (RRI, 2021). Analyses of carbon rights in Brazil found that carbon rights are tied to forest rights and not land rights, which they derive from Brazil's Civil Code (Law No. 10.404/2002) and the Forest Code (Law No. 12.651/2012) (see e.g., Loft et al. 2015). In the Forest Code (Art. 41), Brazil recognizes carbon as an environmental service, and for private ownership, the Civil Code stipulates that the fruits and other products of the property belong to its owner, unless these are otherwise established by a contract or law (Art. 1,232).

For public forest, however, Law No. 11.284/2006 on public forests management for sustainable production specifically forbids the commercialization of credits resulting from the avoid emission of carbon in natural forests (Art. 16. § 1 VI). The article notes that only the rights expressly provided for in the concession contract are granted. However, paragraph 2 stipulates that the right to trade carbon credits may be included in the concession contract, in case of reforestation of degraded areas or their conversion to alternative land use. Indigenous lands, which are part of public land, are an exception to this rule, because Indigenous populations have permanent rights to property and exclusive resources rights as laid down in the Brazilian Constitution (e.g., Art. 231). Loft et al. (2015) also highlight that there is a federal legal opinion that found that the rights to carbon benefits and potential credits generated in Indigenous lands belong to Indigenous people and not to the federal government. Yet, there is still a debate as to whether this is a right they can autonomously assert, or only in cooperation with the government.

Because the federal law does not specify the nature or carbon rights, it has left room for the individual states to develop their own interpretation. This has led to the assertion of jurisdiction and the development of diverging carbon rights initiatives in the states of Acre, Amapá, Mato Grosso, Maranhão, and Tocantins (Loft et al. 2015; RRI 2021). RRI (2021) found that the states of Amapá, Maranhão and Tocantins have interpreted that the title to carbon credits is attributable to the state.

National REDD+ framework and NDCs

Brazil has a national REDD+ approach and the country adopted its National REDD+ strategy in 2015. REDD+ is governed through national level institutions and bodies, including the National Commission for REDD+ (CONAREDD+), technical working groups and advisory bodies (MMA 2016). The strategy is implemented by national agencies, subnational and local government agencies, and



civil society organisations. Brazil has been one of the largest recipients of international REDD+ funding, including REDD+ readiness funding and result-based payments.

Although there is a national REDD+ programme, the Brazilian government leaves much room for projects to be developed on the voluntary market. CONAREDD+ has specifically recognized the contribution of the voluntary carbon market and encourages its functioning in harmony with relevant national and subnational legal instruments (CONAREDD+ Resolution 3/2020). Among its tasks, CONAREDD+, is responsible for formulating guidelines and issuing resolutions on the allocation of emission reductions, for both federal entities and for privately developed programs and projects of forest carbon (Decree 10.144/2019, Art. 3 section IV). This is considered a positive development for private sector projects as this can avoid double counting of credits, something buyers of carbon are looking to keep away from (Biofilica, 2020).

The role of the voluntary market is further recognized in the '*Floresta+ Carbono*' or 'Forest+ Carbon' program created by the Ministry of Environment of Brazil in 2020 (MMA Ordinance 518/2020). This program is part of their more general *Floresta+* program, designed to develop an environmental services market in all Brazilian biomes.⁷ The aim of the Forest+ Carbon program is the encouragement of the voluntary, public, and private market for carbon credits from natural forests (Ordinance 518, Art. 1). Most importantly, the ordinance allows the voluntary market to establish its own rules and parameters, without any establishment of responsibility or correlation with the commitments assumed by the Brazilian government (Ordinance 518, Art. 2). With the program, the government hopes to establish a more favourable business structure for payments for environmental services.

Aside from REDD+, Brazil's updated NDC of 2020 is quite general and does not include quantifiable measures, projects, or activities to reduce emissions from deforestation or forest degradation. Instead, the NDC only makes general reference to the importance of forest protection and payments for environmental services through their *Floresta+* program (UNFCCC 2020). It should be noted that under the current Bolsonaro government, Brazil's NDC ambition and targets dropped significantly as compared to their initial NDC (WWF Brazil, 2020).

Existing forest carbon projects

Brazil is highly active on the voluntary carbon market with 47 AFOLU projects in the Verra database, 27 of which are registered, and 37 which use a methodology suitable for SFM carbon projects. Some of the projects are developed by SFM operators, including the CIKEL Brazilian Amazon REDD APD Project (Verra ID: [832](#)), and the Florestal Santa Maria project (Verra ID: [875](#)). Other SFM projects include the Amazon Rio REDD+ (Verra ID: [1147](#)), and the Agrocortex REDD (Verra ID: [852](#));

Ongoing developments on the forest carbon market

The main developments on the carbon market are mentioned above.

⁷ See: Forest+ Carbon, available at the website of the Brazilian government: <https://www.gov.br/pt-br>.



Potential for an SFM carbon project

There is currently good potential for an SFM carbon project in Brazil. In particular, the country's Forest+ Carbon program and its explicit support of voluntary market projects provides a favourable environment for VCS projects. However, in terms of carbon rights, SFM operators that have public forest concessions in Brazil are in principle not allowed to trade carbon, unless this includes reforestation of degraded areas or the conversion of areas to alternative land use. For private land there is no rule preventing the trade in carbon and the abovementioned projects developed by SFM operators in Brazil are in fact privately owned. In general, the presence of various AFOLU projects on the voluntary market, indicates a good possibility for the development of voluntary market projects. However, a close look at specific state legislation will be necessary, as states may develop legislation separate from the federal framework.

The national REDD+ program and NDCs do not prevent the development of an SFM carbon project and there are favourable policies for voluntary market projects. Consulting with the government, keeping track of CONAREDD+'s upcoming rules and guidelines, and carefully assessing and safeguarding Indigenous peoples' rights in the project area is a recommended course of action.

3. Gabon

Legal basis for carbon rights

Gabon launched a new ordinance in September 2021, which describes how a national system for greenhouse gas emissions monitoring and regulation. The same ordinance also launches a quota system which is to ensure that Gabon's emissions remain stable at the current low level. The ordinance also has a section on how the generation of carbon credits will be managed. The legal text has some sections that will later be specified.

The ordinance number 019/2021 states in article 71 the objective to stimulate projects that will reduce greenhouse gas emissions. Projects must conform to UNFCCC guidelines and regulations. It also states that all carbon stocks and greenhouse gas emissions will belong to the state but that the state will grant the rights to these emission reductions to the project proponents while conserving 20% of the emission reductions. The state also envisages to venture the commercialization of emission reductions the climate ministry. Proponents of projects need to get a permit for their project before initiating it. The text further foresees in a possibility for (inter) national trade.

REDD+ framework and NDCs

The first NDC for Gabon was published in 2015. In this document Gabon expects to be able to have a scenario that show a 62% reduction in greenhouse gas emissions in 2025 when compared to unchecked development. In Gabon, a great focus is the carbon adsorbing capacity of the forestry sector, but in the NDC it is stated that Gabon does not want to rely on carbon stocks in vegetation as this (REDD+) approach would hamper development of real emission reductions such as the



halting of flaring of gas in oil winning and reduction of energy consumption. With investments in hydropower and rational land-use planning the greenhouse gas emissions are to be reduced.

In February 2021 Gabon's Proposed National REDD+ Forest Reference Level was published for review (State of Gabon, 2021). The document presents that Gabon holds a special status as a High-Forest, Low-Deforestation (HFLD) country. The average annual change for the REDD+ activity Deforestation is 0.07% for the 2015-2018 period. It is not clear if there are updates concerning the past three years.

Ongoing developments on the forest carbon market

There is currently no carbon market in Gabon. Despite the ordinance released in 2021, much remains unclear. Parties willing to initiate projects are waiting to see how the ordinance will be made concrete. Parties are also likely to be waiting for first movers to see what challenges they encounter.

Existing forest carbon projects

There are no existing forest carbon projects in Gabon.

Potential for an SFM carbon project

Gabon has high potential for carbon projects. In the many forestry concessions, there is potential to reduce emission with the application of RIL-C methodologies. Although the benchmark for this approach is still to be determined, it is expected that if values presented in scientific literature are applied, quite high reductions are possible. This present an excellent case for SFM carbon projects. The set-aside of parts of timber concessions, especially as a possible solution to problems presented by Intact Forest Landscapes in concessions with FSC certification may be an attractive option. Set-aside with stock enhancement through forest restoration may also be a good option (not studied in this report). REDD will probably be more difficult because of Gabon's status as a High-Forest, Low-Deforestation (HFLD) country.

4. Indonesia

Legal basis for carbon rights

Indonesia currently does not possess definitive legislation covering the voluntary carbon market for forest carbon.

REDD+ framework and NDCs

Indonesia places major emphasis on the forestry sector and the REDD+ mechanism in their NDCs (UNFCCC 2021). They are effectively claiming the entire forest area of Indonesia for the fulfilment of these. The initial NDC calculations were solely based on emission reduction and do not cover carbon capture resulting from forest restoration and additional tree plantation. Some experts therefore claim that access to the voluntary market should be allowed for carbon capture. This is



not yet the position of the Ministry of Environment and Forestry though. The mandatory market is currently under development.

Unpublished data showed that Indonesia's NDC commitments could be achieved by reducing emissions on approximately 60% of the forest area, not considering any carbon capture from restoration or tree plantation. This suggests that around 50% of the forest carbon could eventually be traded on the voluntary market once the appropriate mechanisms are in place.

Ongoing developments on the forest carbon market

During report writing (March 2022), a new carbon credit presidential regulation and carbon tax law are being written up, which are expected to be finished in the first half of 2022. The regulations are said to address guidelines and plans for the carbon trade, carbon offsets and the commodity market. Until pending legislation is finalized, it will remain unclear what the future holds for carbon rights and the voluntary carbon market in Indonesia. Different set-ups for the mandatory market are considered, including both a fixed compensation and the creation of a carbon stock exchange. In either case, prices are expected to be considerably lower than those on the international market.

Existing forest carbon projects

In Indonesia only projects that received a permit before the country's latest NDC are currently on the market. This is the case of PT Rimba Raya and PT Rimba Makmur Utama which are both ecosystem restoration concessions on deep peat land.

Potential for an SFM carbon project

Because of Indonesia has claimed nearly its entire forest areas to fulfil its NDC, the claiming of carbon credits for the voluntary market from Indonesia's forests is virtually impossible at the moment, unless a business possesses previously issued permits.

5. Malaysia

Legal basis for carbon rights

There is currently no legal basis for carbon rights in the country.

REDD+ framework and NDCs

Malaysia developed a REDD+ strategy in 2017 in which it focused on reducing emissions by 15 to 25 million tonnes of CO₂ annually between 2016 and 2025. The country also submitted a FREL, has established a monitoring framework and is implementing REDD+ safeguards. Malaysia has also designed a REDD Plus Finance Framework (RFF) to finance initiatives that conserve forest. Through the RFF, funds can be used to finance non-carbon benefits and carbon credits. The RFF works through two mechanisms, the Forest Carbon Offset (FCO) and the Forest Conservation Certificate (FCC). The FCO is developed as a domestic carbon offsetting scheme that allows carbon offsetting from forest areas and is open to national and international investors. The FCC is a non-market-



based mechanism that allows for payments for non-carbon benefits from the protection of ecosystem services. This mechanism is only open to domestic investors (KETSAs 2021).

REDD+ action is implemented by the State Forestry Departments and supported by the National Steering Committee (NCS) which coordinates and monitors implementation, and a National Technical Committee (NTC) that offers methodological guidance and develops action plans.

In its revised NDC of 2021, Malaysia has committed to a reduction of 45% of its emissions in 2030 compared to a 2005 reference level. Forests play a role in achieving this target, and Malaysia has pledged to keep a forest cover of at least 50% to contribute to the NDC.

Ongoing developments on the forest carbon market

In September 2021, Malaysia announced that it will develop a domestic emissions trading scheme (DETS), as well as draft guidelines to set up a voluntary carbon market to catalyse carbon trading in the country. The Ministry of Environment and Water (KASA) will develop the DETS together with the Ministry of Finance. The DETS will allow Malaysian companies to offset their emissions and will prepare them for carbon control mechanisms in the international market, such as the Carbon Border Adjustment Mechanism by the European Union. The guidelines for the voluntary carbon market are developed as a reference for international carbon credit transfers. Private sector action on the voluntary market will have to be reported to KASA to avoid double counting (Kiernan 2021; Hazim 2021).

Existing forest carbon projects

Malaysia has only two AFOLU projects in the Verra database, of which only one is registered. This project, the INFAPRO Rehabilitation of logged-over dipterocarp forest in Sabah (Verra ID: [672](#)), is an IFM project developed on a forestry concession by Face the Future in 2011. The project was supported by a long-standing MoU between the government and Face the Future, dating back to 1992. The other project, Kuamut Rainforest Conservation Project (Verra ID: [2609](#)), was developed in 2021 and is currently under validation. The project document states that the rights of the project, including the rights to generate and sell carbon, belong to the State, but that these rights were conferred from the State to the previous concession holder, and now to the project proponent. This indicates that carbon rights can be conferred to private parties.

Potential for an SFM carbon project

The potential for an SFM carbon project in Malaysia is unclear. In depth desktop research has not resulted into any tangible evidence on who owns the carbon rights in Malaysia. Yet, the project document of the Kuamut Rainforest Conservation project gives some indication that these may belong to the state but can be conferred to private parties. Malaysia has a REDD+ strategy, but much of the REDD+ actions are still in development and not yet implemented. The REDD+ payment framework (RFF) has a strong focus on domestic carbon trading, and there is no direct mention of voluntary market projects and how they fit into the national framework.

The fact that there are only two AFOLU projects in Malaysia, of which only one is registered, does not give much guidance for SFM operators. Yet, the recent Kuamut Rainforest Conservation project which still under development could serve as an example once this project is validated. The project owns the rights to carbon through an agreement with the government, which can be used as a reference by SFM operators looking to develop a project. However, it was also found that the Malaysian government is currently considering if and how the government should be claiming a part of the revenue on (voluntary) carbon projects. Until the government has provided more clarity on this, there is considerable uncertainty for the development of voluntary carbon projects and their potential revenues. The development of guidelines for the voluntary carbon market by KASA should be closely followed as these may bring more clarity for VCM projects and how they can operate within Malaysia.

6. Peru

Legal basis for carbon rights

In Peru, multiple laws and regulations that govern carbon rights co-exist. Following the Constitutional Law for the Use of Natural Resources the fruits and products of the natural resources are held by those who have the use rights over such products (Law 26821). Carbon sequestration is considered an ecosystem service, which can be generated in natural ecosystems and ecosystems recovered or established by human intervention as laid down in the regulation on the law on the Mechanism of Rewards for Ecosystem Services (MRSE) (MINAM Decree 009-2016/Law No. 30215). The regulation distinguishes between so-called contributors (*contribuyentes*) and payees (*retribuyentes*) of ecosystem services (Art. 7).

Contributors are natural or legal persons, public or private, that are conducting actions that contribute to the conservation, recovery, and sustainable use of the sources of ecosystem services. These natural or legal persons can be a variety of actors, including: I) owners or holders of the resources, II) those with qualifying titles over the resources as provided by the state, III) communities, IV) the Peruvian National Service for Protected Areas (SERNANP); V) regional and local governments that administer forests; VI) public entities; and other organisations recognised by the Ministry of Environment (MINAM). The payees of ecosystem services are the ones that pay the contributors for their efforts in conservation, recovery, or sustainable use of the ecosystem services. These contributors and payees can enter into voluntary agreements (MRSE Agreements), which determine, amongst others, the actions to be implemented, the remuneration method, and how the agreement will be monitored and complied with (Art. 10). Following the rules of this regulation, voluntary market SFM carbon projects can be considered an MRSE agreement, where carbon buyers (payees) will pay for the forest protection services provided by the SFM operators (contributors).

MINAM is responsible for Peru's ecosystem services and supervises, promotes, and regulates these services. It is also the national authority on climate change, and the regulating authority on the Framework Law on Climate Change (Law 30754). MINAM oversees the MRSE agreements when they are registered in the 'Single Registry of MRSE' (*Registro Único de MRSE*). Registration means



the agreements are evaluated and approved by MINAM, and that MINAM recognizes of the agreement and its alignment with national policies (MINAM 2022). The Ministry also offers different forms of support for the MRSE agreements. Specific articles in the regulation are taken up on the reward mechanisms for forest carbon sequestration, which can include actions that reduce deforestation and forest degradation (REDD), actions that increase forest carbon stocks (ARR), and sustainable forest management (IFM), among others. REDD+ projects and other similar initiatives are considered if they are registered in the MRSE registry (Art. 31). This registration, which indicates an approval from MINAM, will confer the emission reduction right, which can then also be transferred to others.

REDD+ framework and NDCs

Peru has actively been developing its REDD+ framework and received financial and technical support from various partners, including UN REDD and the World Bank (del Aguila et al. 2014). Peru has advanced significantly and has developed a REDD+ strategy, a monitoring framework, safeguards, and has submitted a second FREL to the UNFCCC in 2021 (UN REDD 2021). Peru's Climate Change Framework regulation was developed with the intention to further develop and consolidate the REDD+ pillars and mechanisms (MINAM Decreto Supremo 013-2019).

From the start of its REDD+ involvement, Peru has promoted a nested approach, where REDD+ projects and carbon accounting are harmonized with the jurisdictional REDD+ framework and in line with Peru's FREL (SERNANP 2021). The government has piloted its nesting program for its national protected areas under VCS and CCBA and has now extended this to all REDD+ carbon projects in the country (REDD+ Business Initiative 2020). Peru is looking to apply Verra's Jurisdictional and Nested REDD+ (JNR) framework in the future and has worked with Verra in the last few years to further develop this framework (Verra 2021).

For the nesting of REDD+ projects Peru is developing guidelines to make sure projects are conducted in accordance with the provision of the Peruvian law. These guidelines include that all state and non state actors that choose to implement REDD+ actions must:

- Contribute a report on compliance with Peru's NDC goals
- Nest their project using the corresponding Forest Reference Emission Level (FREL) in force
- Comply with Peru's REDD+ safeguards
- Comply with all the requirements established by MINAM for the National Registry of Mitigation Measures (RENAMI)
- Comply with other requirements established by MINAM, as the national REDD+ authority

In addition to readiness funds, Peru also signed an Emission Reduction Program Document (ERPD) with the FCPF in 2019 in which Peru would reduce 21.5 million tCO_{2e} within five years, 6.4 of which would be transferred to FCPF carbon fund. The emission reductions would take place in the regions of San Martín and Ucayali. Yet, the planned Emission Reduction Payment Agreement (ERPA) to be implemented between 2020-2024 was not signed in 2019 as planned, and no further updates are available from the FCPF.



In terms of climate change mitigation goals and the NDCs, Peru set itself a target of reducing carbon emissions by 35% in 2030 (MINAM 2020). The forestry sector is one of Peru's priority areas in its NDC, although no sector specific emission reduction targets are set. Emission reductions are monitored through the RENAMI mechanism which collects, registers, and manages this information and monitors compliance with the NDC. The government intends to register all mitigation efforts, including REDD+ and other payments for ecosystem services in RENAMI. The Climate Change Framework regulation frequently refers to the NDCs and methods in which Peru can meet its mitigation objectives (Millar et al. 2020; MINAM 2020).

Ongoing developments on the forest carbon market

After the COP26 in November 2021, Peru joined the San José Principles Coalition for High Ambition and Integrity in International Carbon Markets. This coalition, which next to Peru now consists of Colombia, Costa Rica, Fiji, Finland, the Marshall Islands and Switzerland considers that the outcomes of the COP26 were not ambitious enough to mitigate climate change and established several actions to inspire greater action. Among these the coalition is committed to “apply corresponding adjustments to support voluntary corporate climate commitments in mitigation outcomes used by corporate actors for voluntary climate goals through international voluntary carbon markets, as also requested by participants in the voluntary market” (Cambio Climatico 2021).

At the moment there are no precedents for applying corresponding adjustments,⁸ but Carbon Pulse notes how this development of applying corresponding adjustments to the voluntary market could create uncertainty for REDD+ projects (Carbon Pulse 2022). It remains to be seen how this pledge will be implemented and what the implications for the voluntary market will be. Likely it will still take a long time before such corresponding adjustments can be made, as players active in the (voluntary) carbon market are not yet on board with this development.

Existing forest carbon projects

Peru has multiple active REDD+ and forest carbon projects on the voluntary market. There are 19 registered AFOLU projects in the Verra database, 13 of which use a methodology suitable for SFM carbon projects. Some of the projects were also developed by SFM operators or in cooperation with SFM operators. Green Gold Loreto (Verra ID: [2345](#)) is an example of a recently developed set-aside project by SFM Company Green Gold Forestry with the use of VM0010 method. The project will take 206,000 ha of its production forest concession area out of the planned logging cycle and instead will manage it for ecosystem services. The Jaguar REDD+ project (Verra ID: [2278](#)) is a recent (2020) REDD+ project where a productive logging concession is turned into a conservation area. Another recent project in the same area is the Tahuamanu (Verra ID: [2502](#)), a REDD+ project developed by SFM company MADERACRE, currently under validation.

⁸ A corresponding adjustment as referred to in the rulebook on Art. 6 of the Paris Agreement, means that when a mitigation outcome (such as a carbon credit) is transferred from one country to another, the outcome will be counted towards the mitigation pledge of the country which receives the outcome, and uncounted from the country transferring it.

Potential for an SFM carbon project

There is good potential for a voluntary market SFM carbon project as can be derived from its legislation, policies, and substantial number of existing and recently developed (SFM) carbon projects. Through the regulation on ecosystem services, MINAM can confer carbon rights to specific to land or resources owners, which can include forest owners or concession holders, based on the condition that these are registered and approved with MINAM. Interviewed companies in early 2022 also noted that at the time it was easy to establish a carbon project in Peru.

For the development of REDD+ projects, a close eye should be kept on ongoing REDD+ developments in Peru. If for example the FCPF ERPA is signed, REDD+ projects in the area covered by the agreement may not be able to claim carbon benefits for a period. Also, Peru strongly promotes a nested approach to REDD+, and REDD+ projects should become part of the jurisdictional approach. MINAM is the designated entity for discussing the most up to date requirements for voluntary market REDD+ projects and their integration into the national program.

It was reported in the Green Gold Loreto project document of 2021, that Peru's current baseline at the national and jurisdictional reference level does not include emission reductions from forest degradation or improved forest management which means that certain projects that focus on degradation or IFM will not be able to be part of the jurisdictional framework. In case of the Green Gold Loreto program, MINAM was supportive of the project and provided an exemption from this rule. Again, consulting with MINAM will be key before initiating a similar project. For set aside projects it should further be noted that the part of the concession which is legally required to be set aside as a conservation area is not eligible for carbon credits.

7. Republic of the Congo

Legal basis for carbon rights

The Republic of the Congo adopted a new Forest Code in 2020, which explicitly determines the rights to generate and profit from carbon credits under Title X. Under the Forest Code, the rights to generate carbon credits and to market them is recognized for natural or legal persons (Art. 179). Carbon rights in the country differ per forest type, and there is a clear distinction between forests that are part of the national forest estate, and forests that are privately owned.

Carbon rights in the national forest estate

Congo's national forest estate consists of a permanent forest domain and the non-permanent forest domain. The permanent domain consists of private forests of the State, forests of legal entities under public law, and community forests. The non-permanent forest domain includes protection forests; natural conservation forests; production forests; recreational forests; experimental forests. All these forest types concern publicly (state) owned forest.



In principle, the carbon rights generated from forests that belong to the state, local authorities, or to other legal entities under public law are attributed to these entities (Art. 180). However, an exception to this rule is made in the event that the carbon credits are generated by a project that reduces deforestation and forest degradation including sustainable management of forests, conservation of biodiversity and enhancement of forest carbon stocks, led by a natural or legal person under private law. In that case the latter is also co-owner of the carbon credits. Also, holders of customary rights and rights of use are considered as beneficiaries of carbon credits. For community forests, the carbon credits generated belong solely or jointly to the local community and/or the Indigenous populations concerned, depending on whether the project is implemented by them or by a third party.

The Forest Code further specifies that the concession of a natural forest or a forest plantation belonging to the State does not confer carbon rights on its assignee unless this is otherwise stipulated (Art. 181). This is different in case of private forest plantations in the national forest estate, where carbon credits are the property of the natural or legal person who planted the forest (Art. 182). Yet, if this person does not make use of the carbon credits, their ownership can be defined in a contract.

Carbon rights in privately owned forest outside the national forest estate

For privately owned forest outside of the national forest estate, the carbon credits generated in either natural forest or forest plantations belong to the owner of the forest (Art. 183). In case the forest owner is not the operator of the carbon credits, the sharing of the carbon credits is defined in a contract signed between the parties.

Marketing of carbon credits

Following the requirements on ownership of carbon credits, the Forestry Code lays down that the terms and conditions for the marketing of carbon credits will be further set by a regulation (Art. 184), and that the sales of credits belonging to natural or legal persons is subject to tax (Art. 185). Finally, a national body is to be established by a Ministerial decree to ensure the regulation, monitoring, and control of the carbon market (Art. 186).

REDD+ and NDCs

Congo developed its REDD+ strategy in 2016 and is a beneficiary of the World Bank's Forest Carbon Partnership Facility (FCPF). For the FCPF, the Congolese government developed a jurisdictional Emission Reduction Program for the departments of Sangha and Likoula, an area comprising 12.4 million hectares. In 2021, the government and FCPF signed an Emission Reduction Payment Agreement (ERPA) for this area, under which payments for 8,390,000 emission reductions are secured until December 2024.

In 2019, Congo also signed a Letter of Intent (LoI) with the Central African Forest Initiative, to further its forest protection and climate change mitigation action (CAFI 2019). Focus areas under this LoI are the development of land use policies, the identification of High Carbon Stock (HCS) and High Conservation Value (HCV) areas, halting deforestation of over 20,000 hectares per year, and



refraining from the drying of peatlands. Through this Lol a project pipeline is developed for the implementation of programmes that contribute to these objectives.

In Congo's NDCs, the forestry sector and REDD+ are one of the main contributions to climate change mitigation efforts. The NDC contains targets for reforestation, reduced deforestation, and assisted regeneration areas to be achieved by 2025 and 2030.

Existing forest carbon projects

The North Pikounda REDD+ project is Congo's only registered carbon project in the Verra database. The project is jointly proposed by Ecosystem Restoration Associates Inc. (Canada) and OLAM International (Republic of Congo) and makes use of VCS VM0011 method for set asides. The project takes place in the remote Pikounda region and concerns the protection of 92,530 hectares, including 55,950 hectares that were legally designated to be logged. Annual emission reductions for this project are estimated at 231,110 VCUs and 56,209 credits have been issued till so far, with limited retirements by two different clients.

A VCS project under development is the 'Improved Forest Management through logged-to-protected forests and reduced impact logging in Ufa Ngombé, Republic of the Congo' project proposed by Industrie Forestière de Ouessou (IFO), owned by Interholco (IHC). The main activities to be implemented under the project are Reduced Impact Logging (RIL-C) and set-aside areas of Logged-to-Protected Forests, using VCS VM0035 and VM0010 methodologies. The total project area spans 583,326 hectares and will lead to an expected reduction of 413,560 VCUs. Discussions for the project already started in 2014, but the project is located in the area of Congo's FCPF program, which prevented project proponents from initiating a project with VCS until the ERPA was signed. In 2021 the project was able to register under Verra and is still under development. The project has an agreement with the FCPF that emissions reductions or removals for the period 2020-2024 will be attributed to the World Bank's FCPF program and will not be claimed or sold by IHC to avoid double counting. The project has signed a Memorandum of Understanding with the Congolese government and income from the sale of carbon credits will be shared with the government, local communities, and Indigenous peoples.

Ongoing developments on the forest carbon market

A decree to establish a national body on carbon, as referred to in Article 186 of the Forestry Code, is currently in development by the Congolese government. This national body is expected to consist of two main entities: a Management Committee and a National REDD+ Coordination body. The management committee will be the decision-making body of the REDD+ process deciding on its vision and strategy. The National REDD+ Coordination body is the implementing body, tasked with the implementation of decisions from the Management Committee.

Potential for an SFM carbon project

The potential for an SFM carbon project in Congo depends on several factors. If an SFM operator wants to develop a carbon project within a natural forest concession on state land, an agreement needs to be made with the government first, as the carbon rights of these areas are in principle



with the government. A carbon project on private plantations that are part of state land or that are privately owned is in principle allowed as the carbon rights over these forest areas belong to the natural or legal person who planted these forests.

Even so, the law is not the only factor of consideration in Congo. The ongoing FCPF project in the two departments in the North prevents anyone from benefitting from carbon in these areas until the Emission Reduction Payment Agreement is finished in December 2024. This does not prevent the development of a project in this region though, as is seen in the case of the Interholco project which is currently under development. As projects usually take some years to be fully established, initial steps toward the development of a project could already be taken in these areas. The only registered SFM project in the country, North Pikounda, is a successful example for SFM carbon, but this project was already established before the World Bank partnership.

No other projects are registered in other regions of the country, but legislation and policies in principle do not prevent the development of a project. REDD+ efforts are in development in Congo and the establishment of a national body on carbon could bring changes to the strategy and policies on REDD+ and possible also on the way the private sector can be involved on the carbon market. Monitoring the future direction of the country's REDD+ efforts, keeping an eye on the progress of the Interholco project, and entering discussion with the government are the way forward to develop a carbon project in Congo.



8. Overview table of carbon rights country profiles

Country	Legal basis for carbon rights	Are forests under a REDD+ programme or part of the NDCs	What REDD+ approaches are allowed in the country (if any)	Are there any examples of privately developed forest carbon projects and what kind?	Are there developments that may change the current situation?	What is the current potential for SFM carbon projects
Bolivia	Not defined, its regulatory framework focuses on the non-commercialisation of the environment.	There is no carbon trading under an ongoing REDD+ programme. Forests are an important part of the NDCs.	There is no REDD+ programme, and the government does not promote a carbon trading mechanism.	One example of a AFOLU project.	There are no known developments.	No potential because of the emphasis on non-market mechanisms to protect forest.
Brazil	It is assumed to belong to the control of forest. Concessionaires can in principle not benefit from carbon, but exceptions are there. Additional carbon rights rules may differ per state.	Yes, but the government leaves clear room for projects and promotes the voluntary market through their Forest+ Carbon program. The NDC is very general, not leading to any restrictions for voluntary carbon projects.	Jurisdictional and project level REDD+. Nesting of REDD+ is attempted in for example the state of Acre, but not yet on a national scale.	Many examples of AFOLU projects and projects using methods available for SFM operators. Two examples of SFM operators that developed a project on private land.	REDD+ is in continuous development, but no specific developments that may impact SFM carbon projects are known.	Good potential on private land. Potential for public land concession appears restricted by law, but exceptions can be made.
Gabon	Following ordinance 019/2021 carbon stocks and greenhouse gas emission belong to the state, but the state can grant the rights to these emission reductions to the project proponents while conserving 20% of the emission reductions.	Forests are mentioned in Gabon's NDC, but they do not want to rely on carbon stocks in vegetation as this (REDD) approaches would hamper development of real emission reductions from other sectors.	There are no REDD+ approaches in Gabon.	There are no existing forest carbon projects in Gabon.	Despite the ordinance released in 2021, much remains unclear. Parties willing to initiate projects are waiting to see how the ordinance will be made concrete and are probably also waiting for first movers to see what challenges these have.	Good potential for carbon projects in particular for RIL-C methods or set asides even though there are few projects. There is less potential for REDD projects.

Guiding document – Carbon feasibility checklist

Country	Legal basis for carbon rights	Are forests under a REDD+ programme or part of the NDCs	What REDD+ approaches are allowed in the country (if any)	Are there any examples of privately developed forest carbon projects and what kind?	Are there developments that may change the current situation?	What is the current potential for SFM carbon projects
Indonesia	No legal basis was found.	Yes, the NDC places significant focus on emission reductions from forests which limits the development of projects on the voluntary market.	Jurisdictional REDD+, no nested or project approach is currently available.	Few projects, but these received government approval before the country's latest NDCs.	A new carbon credit presidential regulation and carbon tax law are being written up, expected to be finished in 2022. Until pending legislation is finalized the future of carbon rights and the voluntary market is unclear.	Poor potential, but developments should be closely monitored.
Malaysia	No legal basis was found.	REDD+ is in development, but there are no ongoing international payment mechanisms. There is a strong focus on domestic carbon trading. In the NDC, 50% of the Malaysian forest should be kept standing.	Not applicable.	Only one example of a relatively old (2011) project. One new (2021) project is in development, which could shed some light on the potential of AFOLU projects on the voluntary market.	Guidelines are being developed for the functioning of the VCM. This could shed some light on the potential for voluntary carbon market.	Unclear. There are very few projects and no clear legislation on this topic. Further guidance on the government position towards VCM and the guidelines on VCM projects may bring clarity to this situation.

Country	Legal basis for carbon rights	Are forests under a REDD+ programme or part of the NDCs	What REDD+ approaches are allowed in the country (if any)	Are there any examples of privately developed forest carbon projects and what kind?	Are there developments that may change the current situation?	What is the current potential for SFM carbon projects
Peru	Carbon rights are considered an ecosystem service. Through the regulation on ecosystem services, MINAM can confer carbon rights to specific to land or resources owners, which can include forest owners or concession holders, based on the condition that these are registered and approved with MINAM.	There are various REDD+ developments ongoing in Peru and forests are a priority area in the NDC.	Peru has a nested approach to REDD+ and is promoting the nesting of projects into a jurisdictional framework. Peru has also been working with Verra on the piloting of Verra’s JNR framework.	There are a few SFM carbon projects in Peru, including projects developed by SFM operators.	There are many developments on the REDD+ market and new initiatives and policies are coming out regularly. Peru also made a pledge to make ‘corresponding adjustments’ for voluntary market project, but the implementation of this will likely be slow.	Good potential for an SFM carbon project, with many examples. Nesting of REDD+ projects may be necessary and should be discussed with the government (MINAM). REDD+ developments should be monitored.
Republic of the Congo	Yes, the 2020 forestry code determines who has the rights to carbon under different circumstances. These rights are tied to different forest types.	Yes, in the Northern departments Sangha and Likoula there is an ongoing FCPF REDD+ program until at least December 2024. In the NDCs REDD+ and forestry are recognised as emission reduction methods.	The FCPC is a jurisdictional program, but only active in two departments. Voluntary market REDD+ projects are in principle allowed in other departments.	There are two SFM projects. One project is well-established and uses a set-aside methodology. Another project (Interholco) is in development in the region where the FCPF is active and unable to claim credits until the end of 2024.	Yes, the set-up of a national body on carbon could bring changes to the current policies, strategies, and rules regarding REDD+ development, which may affect voluntary market projects.	No potential in Sangha and Likoula until the agreement with the end of the FCPF agreement. Yet, projects could already be developed (see Interholco project) Good potential for an SFM carbon project in other departments.



Annex IV: Context of the carbon rights for SMF operators

This annex serves as a theoretical background on some of the key aspects of carbon rights, carbon markets, REDD+, the Paris Agreement, and the impact of national and international development on SFM carbon projects.

1. Carbon rights and their legal basis

Carbon rights and carbon trading

In the forestry and land use sector, carbon rights refer to the right to benefit from the forest carbon stock. This carbon stock is seen as an intangible asset, which is commonly measured in tons of carbon dioxide equivalent (tCO₂e) and called a carbon credit or verified emissions reduction unit (VERs). Forest carbon credits can be created by activities that lead to an increase in sequestered forest carbon through afforestation or reforestation (ARR); or by activities that avoid the projected deforestation or degradation of an area and consequential carbon emissions under a business-as-usual scenario, through improved forest management (IFM) or conservation efforts (REDD+). A carbon right in this context can be understood as the right to sell, trade and purchase carbon credits.

These credits can be traded on the carbon market, which consists of the voluntary and compliance carbon market (see definitions list) and consist of different standards and programs. For SFM operators, we have highlighted the potential for project development on the voluntary carbon market using the Voluntary Carbon Standard.⁹

Depending on the country, carbon rights can be determined by legislation, by policies, by a contract, or they can be undetermined (RRI, 2018). In most countries, carbon rights are still to be defined or crystallized out. Some countries have developed explicit legislation on carbon rights, while others more implicitly use or modify existing natural resources or forestry legislation. Most information on carbon rights focuses on the development of REDD+ projects and less information is available on the carbon rights of projects that do not fall within this category (Streck, 2020).

Allocation of carbon rights

Carbon rights can be allocated in two main ways: as part of the control of an asset, or through the control of an activity.

Carbon rights that are part of the control of an asset: as part of an asset, these rights can be tied to for example land ownership, land management rights, or in some countries the ownership or

⁹ An elaborate explanation and analysis of the methods for SFM carbon accounting can also be found in our previous paper on SFM carbon, available here: <https://forminternational.nl/carbon-finance-opportunities/>.

management of the trees in which carbon is stored. These can full or partial ownership or management rights, and owned by various parties, such as individuals, communities, or the state. Rights can be sometimes transferable to other parties, or they can be inalienable (Streck, 2020).

Carbon rights that are part of the control of an activity: alternatively, carbon rights can be allocated as part of the activity that reduces carbon emissions. In that case the carbon rights are independent of the land or resource management rights, and are instead flowing from the actual tree planting or tree protection activities. Such rights can for example be obtained by creating projects that lead to an increase in carbon capture, despite the project developer not having direct ownership of either the land or the trees. Activities and can also be controlled by individuals like project developers, communities, or government agencies (Loft et al. 2015; Streck, 2020).

The legal basis and right to benefit from carbon credits are country specific and can take various forms. SFM operators looking to develop forest carbon projects are thus faced with the challenge of identifying whether they can benefit from the carbon sequestered by their actions. There are three main country scenarios in terms of carbon rights, which influence the ability of SFM operators to develop a carbon project:

1. Carbon rights belong to the state and are managed at the national level and private projects are not allowed.

2. Carbon rights are with the state, but the right to benefit from a reduction in carbon emissions can be transferred to private actors.

3. Carbon rights are undefined, or are in private ownership, e.g., tied to the resource, and private actors are allowed to develop

Unclear carbon rights and benefit sharing

Although many countries and private project developers engage in carbon trade, there is often still considerable unclarity on the ownership of such rights and the legal basis for trading carbon credits (IRR, 2018). Because of this unclarity, the two types of carbon rights can sometimes be conflicting. This can happen where one party like the government has the rights to the land and resources, but another party such as a private entity or community is implementing activities that lead to a reduction in carbon emissions. In such cases, benefit sharing arrangements can be developed to clarify the situation (Streck, 2020).

In many tropical forest concessions, communities are living in, or near the forest and have rights to certain areas or resources. There is increasing attention for the role of communities in carbon projects, the carbon rights of communities, and the need for equitable benefits sharing mechanisms. An SFM operator implementing a carbon project should carefully investigate the rights of the local communities and involve communities when developing carbon projects in areas where they live.



Also, the rights of the (local) government should be considered and discussed. Benefit sharing agreements with the government, local communities and other stakeholders that may be present in the area will result in transparent projects with benefits for multiple parties. This will also lead to greater acceptance of carbon projects in the area.

2. The impact of national climate change action on SFM carbon projects

In addition to the question who owns and is allowed to trade the carbon credits, national action, and programs to mitigate climate change should also be considered before starting an SFM carbon program. Carbon credits from forests are developed in a complex market with various actors that operate at the national, subnational, or individual project level. The Paris Agreement and the REDD+ framework are two main factors that influence whether an SFM operator is able to develop a forest carbon project.

Paris Agreement and the NDCs

In 2015, nearly all countries signed the Paris Agreement, (Box 4), after which they pledged their contributions to climate change mitigation in their Nationally Determined Contributions (NDCs). Countries have increasingly included emission reductions from the Land Use, Land-Use Change and Forestry (LULUCF) sector into these NDCs. Forests in NDCs can include REDD+ efforts but may also include reducing emissions from forests separate from the REDD+ framework. Because of the NDCs and their focus on the land use and forestry sector, land that was previously not under any carbon regulation is increasingly becoming part of national strategies and carbon accounting. This means that, depending on the country, there may be less room for voluntary projects outside the scope of a national programme (Pham et al. 2018). While voluntary market projects are separate from national initiatives, they do generate emission reductions that can contribute to a country's NDCs, making governments more hesitant to permit these kinds of projects because of double counting risks.

Box 4. The Paris Agreement and Nationally Determined Contributions (NDCs). In 2015, parties to the UNFCCC developed the Paris Agreement, an international climate change mitigation agreement aimed at limiting global warming to below 2 degrees Celsius. As part of this agreement, countries have outlined the actions they will take to reduce emissions post-2020, which are known as Nationally Determined Contributions (NDCs).

The REDD+ framework

The Reducing Emissions from Deforestation and forest Degradation (REDD+) framework, also known as the [Warsaw Framework for REDD+](#), is a climate change mitigation mechanism which offers developing countries result-based payments for actions that reduce emissions deforestation and forest degradation, as well as actions that promote sustainable forest management and the conservation and enhancement of forest carbon stocks in their country. The framework was developed by the parties to the United Nations Framework Convention on Climate Change (UNFCCC) and adopted during the COP 19 in Warsaw. The framework is implemented in three phases that lead a country from (I) readiness activities, to (II) implementation, and finally (III)



results-based payments. REDD+ implementation is voluntary and participating countries are at various levels of implementation, depending on the national circumstances and the support received (UNFCCC, 2022).

Next to government REDD+ programmes, there are also REDD+ projects developed by non-state actors, which can be part of the national REDD+ framework or separate on the voluntary carbon market. In fact, there are three main levels at which REDD+ is taking place (Box 5). For the various levels of REDD+ there are several market and non-market REDD+ initiatives and a variety of REDD+ standards, which specify the rules for the creation and issuance of carbon credits for REDD+ projects or programmes. As explained in the guiding document, SFM operators can develop diverse kinds of REDD+ projects using Verra’s VCS methodologies.

Box 5: The different levels of REDD+ (Granziera et al. 2021).

Jurisdictional REDD+: refers to a REDD+ programme established at the national, subnational or at another jurisdictional level. These programs operationalise rules and requirements for the accounting and crediting of REDD+ policies and measures within large areas (Verra, 2022). Performance payments for emission reductions may become part of an international market mechanism or can occur without a market system. Some of the main initiatives include the World Bank’s Forest Carbon Partnership Facility (FCPF) and the Green Climate Fund (GCF).

Nested REDD+: refers to a national REDD+ programme in which REDD+ projects can be ‘nested’ or integrated through the harmonisation of carbon accounting rules. Verra for example developed its Jurisdictional and Nested REDD+ framework (JNR) to accommodate this option.

REDD+ Project: refers to project-based REDD+ activities, outside the scope of a jurisdictional programme. Credits from these projects are developed by private parties and fall under a voluntary carbon market standard, like Verra’s VCS.

In some countries, benefitting from forest emission reductions is only allowed under a jurisdictional REDD+ programme and REDD+ projects are not permitted. In other countries, however, REDD+ projects are allowed, and project developers can benefit from the trade in credits from these projects. These projects may be either ‘nested’ into the jurisdictional programme or can be freely developed outside the scope of such a national programme. For SFM operators, REDD+ projects can therefore either be developed under a nested or a project level approach. In most countries a project level approach for SFM carbon will be the only feasible, since progress of REDD+ programmes and nested REDD+ is often slow, and a project level approach allows for REDD+ certification on for example a concession for forest management or private land.

Impact of NDCs and REDD+ programmes on SFM carbon projects

Although there is currently good market potential for SFM carbon projects in many countries, SFM operators should always consider national developments like the NDCs and REDD+ programmes when trying to certify a project. In many countries REDD+ strategies are underway and NDC pledges are increasingly including forest landscapes. This may also lead to legislation or policies that determine or change who has the right to trade carbon. As these initiatives progress, there is a

chance that voluntary market projects will no longer be allowed in certain countries or areas. Instead, a nested approach may be possible, but many countries are not yet at the stage of rolling out a complete jurisdictional and nested REDD+ scheme. Next to nesting of projects in the national strategy, carbon emissions of projects can also be excluded, or ‘carved out’ of a country’s NDCs, or projects can obtain the rights to sell the carbon from the government.

In any case, government consultation is key in the development of SFM carbon projects. Even though REDD+ projects on the voluntary market are often developed outside the knowledge and approval of the government (Granziera, 2021), this is not a recommended course of action, because this puts projects at risks of not being able to sell their credits when there is a change in government policies and regulations. Buyers of carbon credits on the market are also increasingly looking for projects that are recognised and accepted by the government.¹⁰

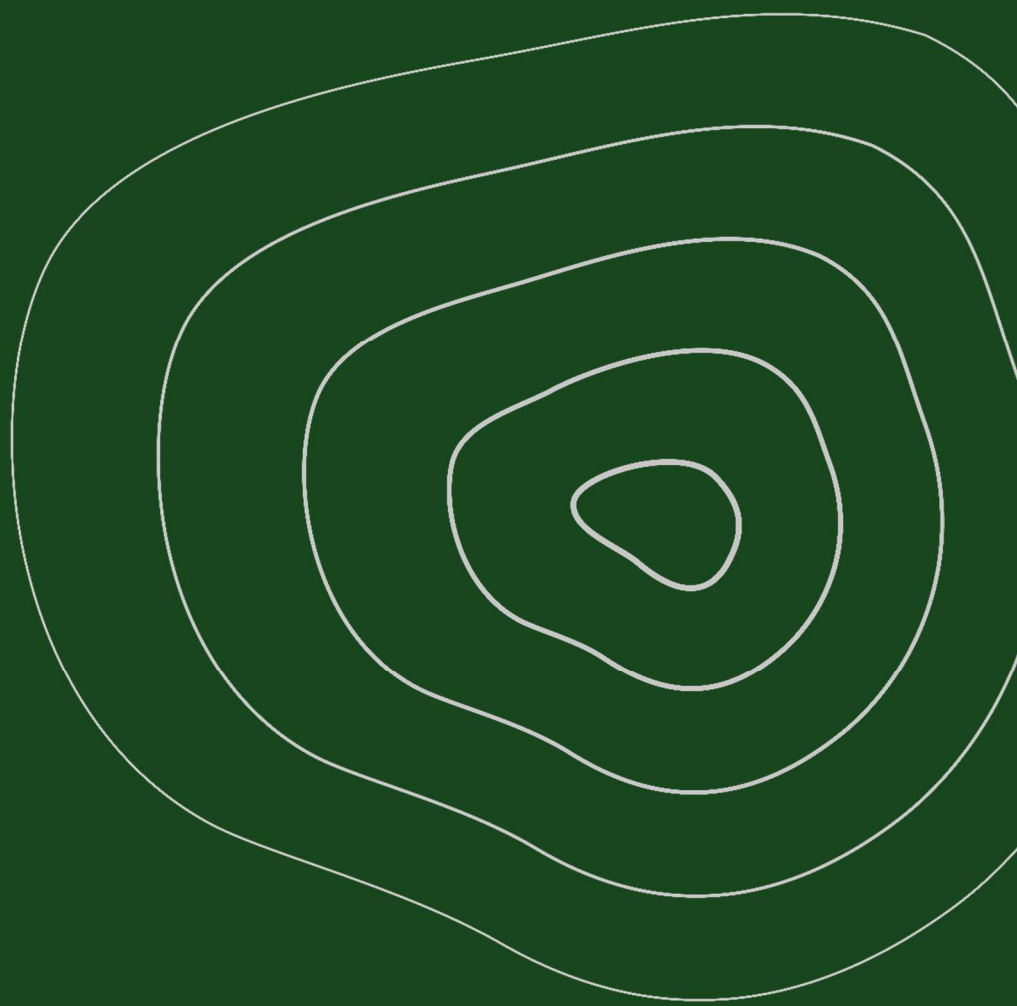
¹⁰ See also our previous paper on SFM carbon for more insights and recommendations, available here: <https://forminternational.nl/carbon-finance-opportunities/>.



Annex V: Monitoring requirements

Project category	Monitoring frequency	Monitoring activities
RIL-C	Annual and within 2 years of harvesting activities	<ul style="list-style-type: none"> • Counting all felled trees along a skid trail (10% sample) to see if they are extracted • Measure % of felled tree extracted along a skid trail (10% sample) • Total length of skid trail (mapping) • # Dead trees > 20 cm DBH along skid trail • Calculate skidding surface (ha) based on trail length • # Of felled trees / ha • Total area of extraction routes / log landings per annual block (measure or high-resolution GIS)
REDD+	Annual / reporting per prior to each verification	<ul style="list-style-type: none"> • Annual area of initial forest classes icl in the project area affected by catastrophic events (GIS) • Annual area of initial forest classes icl in the project area affected by forest fires (GIS) • Annual area of deforestation of initial forest classes icl in the leakage belt (GIS) • Annual area of deforestation of initial forest classes icl in the project area (GIS) • Annual area of deforestation of initial forest classes icl in the reference region (GIS) • Annual area of deforestation of initial forest classes icl in the reference region (GIS) • Areas of planned deforestation in forest class (plans and GIS) • Areas of planned logging activities in forest class (plans and GIS) • Areas of planned fuel-wood collection and charcoal production activities in forest class (plans and GIS) • Total decrease in carbon stock due to all planned activities at year t in the project area (plans and GIS) • Total increase in carbon stock due to all planned activities (plans and GIS) • Total decrease in carbon stocks due to displaced deforestation (GIS) • Annual carbon stock change in leakage management areas (plans, GIS, measurements) • Total actual carbon stock change due to unavoided unplanned deforestation (reports and GIS) • Sum of (or total) actual non-CO2 emissions from forest fire (reports and GIS) • Emissions from grazing animals in leakage management areas (reports, assessments, GIS) • Total ex post increase in GHG emissions due to displaced forest fires (GIS) • Logging damage factor based on M3 of timber harvested (plans and harvest assessment report) • Fraction of wood products that are considered permanent (i.e., carbon is stored for one hundred years or more) (harvest reports) • Mean annual increment at each forest class due to natural regeneration of managed forests following planned sustainable logging activities (field measurements – default data) • Fraction of wood products that are retired between 3 and 100 years (harvesting reports)

Project category	Monitoring frequency	Monitoring activities
		<ul style="list-style-type: none"> • Risk factor used to calculate VCS buffer credits (Verra methodology) • Fraction of wood products and waste that will be emitted to the atmosphere within 3 years (harvesting reports) • Volume of timber for product class w, of species j, extracted from within forest class (harvesting report)
Set-aside	At least every 5 years	<ul style="list-style-type: none"> • Diameter at breast height for individual tree n, of species i, in sample plot s, of stratum j, (measured) • Diameter at breast height for individual tree n, of species i, in sample plot in the naturally disturbed area snd, of stratum j, (measured) • Flight distance travelled per trip y, for a total of Y trips (flight log) • Vehicle distance travelled per trip y, for a total of Y trips (vehicle log) • Area of natural disturbance nd, in stratum j, in (GIS and measurement in plots) • Volume (m3) of wood sold as determined from field surveys • Area of illegal harvest in stratum j (GIS) • Annual actual volume of harvest for land/ that is owned and/or operated by the Project Proponent or the forest with comparable situations and condition in local or regional or nation level (records)



**Precious
Forests
Foundation**

Lagerstrasse 33, CH-8004
Zürich, Switzerland
<https://precious-forests.foundation/en/>



Eijerdijk 87, 8051 MS
Hattem, Netherlands
www.forminternational.nl