Field perspective comparison of forest carbon and forest management standards

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Front cover photo: Carbon (REDD) project in Madagascar

Back cover photo: FSC certified forest in Cameroon.

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The Rainforest Alliance (RA) works to conserve biodiversity and ensure sustainable livelihoods by transforming land-use practices, business practices and consumer behavior. Based in New York City, with offices throughout the United States and worldwide, the Rainforest Alliance works with people whose livelihoods depend on the land, helping them transform the way they grow food, harvest wood and host travelers. From large multinational corporations to small, community-based cooperatives, the organization involves businesses and consumers worldwide in its efforts to bring responsibly produced goods and services to a global marketplace where the demand for sustainability is growing steadily.

The Rainforest Alliance's Climate Program works to conserve biodiversity and enhance livelihoods by supporting sustainable land management practices to mitigate and adapt to climate change. The Climate Program is cross-cutting, involving the sustainable forestry, agriculture and tourism programs of the Rainforest Alliance. The principal strategies of the Climate Program are to: build capacity for REDD+ implementation through project facilitation and developing/deploying training and guidance materials; contribute to REDD-readiness initiatives at a national level in target tropical countries; innovate and implement projects leveraging carbon finance as tools for landscape-level conservation; shape forest

carbon standards and REDD+ policy at the national and international level and amongst key climate investment funds; develop and scale adaptation-oriented tools and initiatives; and build demand and capacity for forest carbon validation, verification and methodology services in priority tropical regions. Learn more at www.rainforest-alliance.org.

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0. Executive summary

This study includes a review of the Forest Stewardship Council (FSC) Principles and Criteria for Forest Stewardship and the following three voluntary carbon market standards: the Verified Carbon Standard (VCS); the Climate, Community and Biodiversity Standards (CCBS); and the CarbonFix Standard (CFS).

It applies methodologies used in previous standard comparison studies, particularly from Brotto *et al.* (2010) and Merger *et al.* (2011), but is expanded to include new criteria and reflect updates in the standards. Most importantly, it introduces field studies to highlight areas where FSC and carbon standards overlap, where they diverge, and how they can be reconciled. The ultimate aim is to facilitate a more efficient process for dual certification.

From a field perspective, the FSC standard is revealed to be the only standard that is closely enough adapted to the forest management context to be able to demonstrate best practices not only for sustainable forestry but also from an environmental and social perspective.

This analysis shows that many bridges exist between the FSC and the carbon standards, offering good opportunities for each to be strengthened while staying true to the objectives of each standard. It is also evident that the new FSC Principles & Criteria address many of the gaps identified by project proponents, namely: ensuring that timing is appropriate in order to find synergies, taking into account that generic indicators are going to be created to complement the recently created new FSC P&C.

1. List of acronyms

A/R	Afforestation and Reforestation
A/R/R	Afforestation, Reforestation, and Revegetation
APD	Avoided Planned Deforestation
CB	Certification Body
CCB(S)	Climate, Community, and Biodiversity (Standards)
CFS	CarbonFix Standard
COC	Chain of Custody
CO_2	Carbon Dioxide
FM	Forest Management
FMP	Forest Management Plan
FMU	Forest Management Unit
FSC	Forest Stewardship Council
GHG	Greenhouse Gas
HCV(F)	High Conservation Value (Forests)
IFM	Improved Forest Management
NTFP	Non Timber Forest Product
PDD	Project Development Document
PES	Payments for Environmental Services
PICA	Producción, Industrialización, Comercialización y Asesoría de Hule Natural
PP	Project Proponent
PRC	Peatland Rewetting and Conservation
REDD	Reduced Emissions from Deforestation and Degradation
REDD+	Reduced Emissions from Deforestation and Forest Degradation in developing countries and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
S&E	Social and Environmental

SFM	Sustainable Forest Management
V/V B	Validation/Verification Body
VCS	Verified Carbon Standard
VCU	Verified Carbon Units
WRC	Wetlands Restoration and Conservation

2. Introduction

An estimated 15 per cent of global greenhouse (GHG) emissions are a result of deforestation and degradation of the world's forests. Worldwide deforestation rates from 2000 to 2005 were an estimated 12.9 million hectares annually, while degradation rates in the tropics during the 1990's were 2.4 million hectares per year (IPCC, 2007).

Climate change poses a challenge for forest management. Management of ecological systems will require adaptation to new market conditions while ensuring ecological integrity and social benefits (FAO, 2012). A sustainable forest management approach that retains or increases forest carbon stocks while producing timber will generate the largest sustained carbon mitigation advantage (IPCC, 2007).

A number of initiatives have been developed in the effort to mitigate climate change and adapt to its anticipated impacts. Reduced Emissions from Deforestation, Forest Degradation, forest conservation and sustainable forest management and the voluntary carbon market may provide a mechanism and the funding necessary for reducing GHG emissions. A number of standards have been developed to improve the integrity of carbon offsets as a method for reducing GHG emissions. These provide guidelines for carbon accounting, reducing environmental and social impacts, and enforcing verification by accredited independent organizations. The standards vary in their individual criteria and can include co-benefit requirements leading to biodiversity and social benefits. The different criteria, foci and approaches to accounting for carbon, social and/or environmental benefits among the different standards allows for various goals and project types, but can create inefficiency and ambiguity within the voluntary carbon market process (Merger *et al.,* 2011).

Bearing these factors in mind, the aim of this study is to assess how important the differences are and where synergies lie between carbon standards and the sustainable forest management standard.

The study includes a review of the Forest Stewardship Council (FSC) Principles and Criteria for Forest Stewardship and the following three voluntary carbon market standards: the Verified Carbon Standard (VCS); the Climate, Community and Biodiversity Standards (CCBS); and the CarbonFix Standard (CFS). It applies methodologies used in previous standard comparison studies, particularly from Brotto *et al.* (2010) and Merger *et al.* (2011), but is expanded to include new criteria and reflects updates in the standards. Most importantly, it introduces field studies to highlight areas where FSC and carbon standards overlap, where they diverge, and how they can be reconciled. The ultimate aim is to facilitate a more efficient process for dual certification.

Many certification schemes are engaging in on-going initiatives to explore if and how they can adapt their systems to allow for better alignment with other certification schemes as appropriate. For example, many of the VCS AFOLU methodologies rely on the robust forest inventory requirements under FSC. In part, this is because the FSC sets a reliable environmental and social standard which

can ensure forest management practices are being carried out. It is the intention of the VCS Standard and VCS methodologies to look to the requirements met under FSC and similar forest management standards, in an effort to not duplicate work. For example, the REDD Methodology Modules (REDD-MF, VM0007) uses FSC certification. The VCS recognizes also that some projects are interested in demonstrating their benefits in addition to carbon sequestration, and those may elect to have VCUs tagged to note that certification under other standards for those co-benefits VCUs has also achieved. At the moment, the other standards that may be linked to the VCS are CCBS, Social Carbon and the Crown Standard. As the combination of the VCS and CCB standards is the most widely used, VCS is also currently working with CCB to provide guidance and standardized templates for projects that want to apply these standards jointly and have their projects validated and verified jointly.

FSC is exploring how its certification system can be most effectively used to address social and environmental concerns in the context of forest carbon projects and whether an association with carbon markets brings about any reputational risks. CFS accepts both FSC and CCB projects as fulfilling some of their own requirements.

While these initiatives are progressing – some slower, some faster – this study does not delve deeply into these issues. It rather focusses on bringing in the perspectives from project proponents into the discussion based on practical experience as the standards' world evolves, and will identify further research needs.

The document is divided into the following sections:

3: Method	Explains the procedure used to carry out the standard comparison.
4: Standards analyzed	Describes the four standards analyzed: CCBS, CFS, FSC, VCS.
5: Standards comparison	Assesses each standard against the assessment criteria, and identifies the most relevant issues to assess in the field.
6: Case studies	Incorporates a field perspective for each assessment criteria.
7: Discussion	Looks more closely at the results, identifying key themes.
8: Recommendations	Identifies areas for further research.
9: Conclusion	Summarizes the findings of the research.

3. Method

The four standards analyzed in this report have been chosen because they are either used extensively (Diaz *et al.,* 2011), or because of their applicability in all world regions: CCBS; CFS; FSC; and VCS. *See Section 4 for a description of these standards.*

This study aims to build on Brotto *et al*. (2010) and Merger *et al. (*2011). "Integrating FSC Certification in REDD+ Projects: Guidelines for Project Developers" by Brotto *et al.* (2010) includes a set of concepts, guidelines, and procedures for integrating FSC certification into REDD+ project development. It does not include project types such as Afforestation and Reforestation (A/R) or Improved Forest Management (IFM), nor does it use specific criteria for sustainable forest management. It also does not include CFS, which is the only system that recognizes criteria from FSC and CCB standards, bringing a new trend. Since the release of the report in 2010, the carbon field has progressed rapidly, with new versions of the standards, such as the version 3 of VCS Standard.

"Options for REDD+ Voluntary Certification to Ensure Net GHG Benefits, Poverty Alleviation, Sustainable Management of Forests and Biodiversity Conservation" by Merger *et al.* (2011) evaluates ten standards according to the following six criteria based on the World Wildlife Fund Forest Carbon Assessment Guide (Walter and Kahlert, 2010): 1) poverty alleviation; 2) sustainable management of forests; 3) biodiversity protection; 4) quantification and assessment of net greenhouse gas; 5) monitoring and reporting; and 6) certification procedures. This study addresses key parameters addressed in Brotto *et al.* (2010), including the legal framework, credible carbon accounting (baseline, additionality, leakage, permanence, and monitoring), environmental and social impacts, financial stability, sustainable forest management, accreditation/verification practices and double counting. Similar to Brotto *et al*. (2010), the study focuses on REDD+ and the tropics only. The authors sent a questionnaire to a number of REDD+ projects, however responses were received from only two and these are the experiences presented in the study.

Building upon Brotto *et al.* (2010) and adding the comparisons by Merger and Williams (2008), WWF (2008), and Merger *et al*. (2011), the following parameters have been chosen for comparing the four standards (*see Section 5*):

- Legal framework
- Financial stability
- E&S impacts
- Sustainable Forest Management
- Carbon accounting
- Accreditation/verification practices

The results of the evaluations by Brotto *et al*. (2010), WWF (2008), and Merger *et al*. (2011) were merged, and a statement about whether each aspect is covered, partially covered, or not covered is summarized in a comparison table. The term 'Covered' is used when the studies consider the respective aspects to be included in the standard. Guidance in each of the studies describes how they deem an aspect to be 'Covered', as follows:

- Brotto *et al*. (2010) uses scores 1, 0.5, and 0 respectively for covered (standard specifically (or in part) requires the issue to be addressed), partially covered (data collected to obtain the FSC certification can be used, with prior elaboration, to fully address (or in part) the issue), not covered at all. This has been directly associated with covered, partially covered, or not covered.

- Merger *et al*. (2011) uses ✓for "Criteria is well covered by the respective standard" and *o* for "Criteria partially covered by the respective standard" or doesn't include anything. These are interpreted as covered (✓), partially covered (✓) or not covered (*o*).

- Merger and Williams (2008) uses stars. The more stars, the higher the standard requirement is. The maximum number of stars is interpreted as covered. No star is interpreted as not covered, and anything in between is interpreted as partially covered.

- WWF (2008) uses ✓when the issue is well covered by the standard in question and (✓) when the issue is partially covered by the standard in question. This has also been directly associated with covered (✓), partially covered (✓), or not covered.

When the information from the literature response was found to not be fully correct due to updates in the standards (e.g. VCS, CFS), a clarification has been added. When no response was found in any of the documents a response have been given by the authors of this study based on the content of the standards. Resolution tactics for issues partially covered or not covered by FSC are taken directly from Brotto *et al*. (2010) and are included in italics. *See Section 5 for a detailed analysis of each standard.*

Based on this information, a series of consultations – including interviews, general correspondence and completion of structured questionnaires – were undertaken with 15 project proponents, identified through the spread net of Rainforest Alliance and NEPCon field auditors as the ones holding multiple certificates. These discussions were instrumental to validating and enriching the preliminary conclusions drawn from the desk-study, and providing practical, field perspectives to compare against the literature. A number of other project proponents were contacted and some provided input that was taken into account during more general discussions, but have not been presented in the case studies. The number of existing projects that have successfully engaged in two different certification processes is still low and some of these could not provide information about the full process.

Each case study focuses on one of the eight criteria (namely Legal Framework, Financial Stability, Environmental and Social Impacts, Sustainable Forest Management, Carbon Accounting, and Double Counting) to provide examples of instances where FSC and one or more carbon standards are used within a current project. This informed the results of the literature review in order to identify current trends from a field perspective. The attribution is based on the responses given in a questionnaire, aiming to provide the most illustrative example. *See Section 6 for the results of the case studies.*

An analysis of the most relevant and common themes was then made in order to draw conclusions and outline future initiatives that could be carried out to look more deeply into critical issues. Also, while the document the Forest Stewardship Council (FSC) Principles and Criteria for Forest Stewardship V4-0 has been used, it has been detected that many of the gaps identified can be

covered by the new version of the FSC P&C (V5-0), and thus some examples have been provided. *See Section 7*.

An invitation to provide comments was then sent to the standards organizations, the project proponents interviewed, the authors of the main previous studies used, and the Rainforest Alliance carbon auditors. See *Section 8 and 9*.

4. Standards analyzed

4.1. CCBS

In 2005, the Climate, Community and Biodiversity Alliance (CCBA) was formed between environmental organizations, corporations and research institutions. Their current membership is consists of Non-Governmental Organizations (CARE, Center for Environmental Leadership in Business at Conservation International, The Nature conservancy, Rainforest Alliance, and Wildlife Conservation Society) , with CATIE, IGRAF, and CIFOR serving as advising institutions.

The CCBA oversees the Climate, Community and Biodiversity Standards (CCBS), which provides flexible rules and guidance for land-based projects that address climate change, and promote biodiversity benefits and local community support. The CCBS does not, however, include a carbon accounting standard (Merger *et al.* 2011). CCB standards are applicable to all land-based carbon offsets including Afforestation, Reforestation, REDD, agroforestry, and agriculture (WWF 2008).

The CCBS is available at: http://www.climate-standards.org/

4.2. CFS

CarbonFix, a non-profit organization developed the CarbonFix Standard (CFS) in 2007 with the support of over sixty organizations (Merger *et al.* 2011). CFS provides ex-ante carbon credits for Afforestation/Reforestation carbon projects (CarbonFix Standard 2011). CFS can be used as a stand-alone standard or in tandem with other certification standards. CFS recognizes the certification standards of the FSC and CCBA (CarbonFix Standard v3.2), thus that meeting indicators of these standards automatically qualifies respective indicators in CFS's own standard.

The CFS is available at: http://www.carbonfix.info/CarbonFix-Standard.html

4.3. FSC

In 1993, environmental organizations, members of the timber industry, indigenous people's groups, and forest worker organizations founded the Forest Stewardship Council (FSC) which is now represented in over fifty countries (Merger *et al.* 2011). Based in Bonn, Germany, it was established to support the economically viable, environmentally appropriate and socially beneficial management of forests (FSC 2012). It creates a system for assessing forest management and tracking timber through a 'chain of custody' and can be applied to Afforestation/Reforestation and Improved Forest Management/Reduced Impact Logging projects (WWF 2008).

The FSC Standard is available at: http://www.fsc.org/principles-and-criteria.34.htm

4.4. VCS

The Climate Group, the International Emissions Trading Association, and the World Business Council for Sustainable Development founded the VCS Program in 2005 for the validation and verification of voluntary GHG emission reduction projects (VCS Program Guide v3.2 2012). Amongst various project types are Sectoral Scope 14 - AFOLU (Agriculture, Forestry and Other Land Use). Such projects include agriculture land management and forestry activities including afforestation, reforestation, REDD, re-vegetation and improved forest management for the creation of ex-post carbon credits (Kollmuss *et al.* 2008).

The VCS relies on expert committees to ensure existing and new requirements reflect state-of-the art knowledge and global good practice, which makes it a rigorous, credible and conservative carbon accounting standard.

The VCS is available at: http://v-c-s.org/program-documents

5. Standards comparison

The results of the analysis of each standard against the assessment criteria are listed in *Section 5.2-5.6*, and summarized in a comparison table in *Section 5.1*.

5.1. Comparison table

The primary conclusion from the literature review is that each standard assessed – VCS, CFS, CCBS and FSC - has its own set of objectives and priorities, and no single standard will suffice for attaining carbon credits through sustainable forest management while protecting biodiversity and the social integrity of local communities (Walter and Kahlert 2010; Merger *et al.* 2011a).

REDD programs necessitate evaluation of greenhouse gas benefits, monitoring and reporting, and verification. The Verified Carbon Standard (VCS) is the only carbon standard that addresses each of these criteria (Merger *et al.* 2011a). However, none of the three carbon standards provide full coverage of environmental and social impacts, although CCBS and CFS do include regulations that consider the rights and livelihoods of local stakeholders affected by the project.

The CCBS is the most robust regarding the assessment of social and environmental impacts for forest carbon projects, and the only standard to assess impacts outside the project area (WWF 2008; Merger *et al.*, 2011). VCS in contrast does not require evidence of environmental and socio-economic benefits, but it does necessitate that project developers demonstrate that the project will not have negative impacts on local communities and the environment.

All standards necessitate that land tenure and property rights of forest resources are clarified (Merger *et al.*, 2011). The VCS, CCBS, and CFS all cover 'Regulation on GHG accounting', but only VCS and CFS certify Voluntary /Verified Emission Reduction (VERs) (Merger *et al.* 2011).

VCS provides the most advanced and comprehensive guidance on carbon accounting (WWF 2008). Brotto *et al.* (2010) considers the VCS and CCBS to be the most robust standards for the voluntary carbon market, potentially allowing Forest Stewardship Council (FSC) interaction.

The tables below present these conclusions in a more visual and detailed manner:

✓	= covered by standard
Partial	= partially covered by standard
x	= not covered by standard

	FSC	VCS	CCBS	CFS
Legal framework				
Project area definition	✓	✓	✓	✓
Land tenure/ownership	✓	✓	✓	✓
Land tenure disputes	✓	partial	✓	partial
Norm mapping at local, national, and international level	✓	✓	✓	partial
Law compliance at local, national, and international level	✓	✓	✓	✓
Carbon credits property rights	✗	✓	✓	✓
Authorities approval	✗	✓	✓	✓

	FSC	VCS	CCBS	CFS
Financial stability				
Fair income distribution	partial	✗	✓	partial
Financial health of organization	✓	✓	✓	✓
Transaction cost lowering capacity	✓	✓	✓	✓
Financial viability	✓	✓	✓	partial
Enhancement of project region economy	✓	✓	✓	✗
Management transparency	partial	✓	✓	✓

	FSC	VCS	CCBS	CFS
Environmental & social impacts				
Environmental and biodiversity baseline description	✓	partial	✓	partial
Environmental and biodiversity impacts	✓	partial	✓	partial
Environmental and biodiversity impacts monitoring	✓	✗	✓	✓
Social baseline description	✓	partial	✓	✗
Social impacts	✓	✗	✓	partial
Social impacts monitoring	✓	✗	✓	✗
Stakeholder consultation, grievance mechanism and transparency	✓	*partial*	✓	✓
Identification and monitoring of High Conservation Value (HCV) Areas	✓	✗	✓	partial
Climate change adaptation capacity	partial	✗	✓	partial
Long-term viability of benefits	partial	✗	✓	✓

	FSC	VCS	CCBS	CFS
Sustainable forest management				
Elaborative guidance on design of forest management plans	✓	✗	✗	✓
Avoidance of converting natural forest to other land uses	✓	✓	✓	✓
Maintenance and protection of ecosystem services	✓	✗	✓	✓

	FSC	VCS	CCBS	CFS
Carbon Accounting				
Baseline scenario				
Carbon pools selection	✗	✓	✓	✓
Sources of GHGs emissions identification	✗	✓	✓	✓
Project region definition	✗	✓	✓	✗
Analysis of historical land-use and land-cover change in the project region	partial	✓	✓	✓
Analysis of agents, drivers, and underlying causes of deforestation and degradation	✗	✓	✓	✓
Projection of future deforestation and degradation	✗	✓	✓	✓
Definition of the land-use and land-cover change inside project area without project	partial	✓	✓	✓
Estimation of baseline carbon stock changes	partial	✓	✓	✓
Additionality				
Additionality	✗	✓	✓	✓
Leakage				
Project area leakage calculation	✗	✓	✓	✓
Project region leakage calculation	✗	✓	✓	✓
Ex ante net anthrop. emissions				
Ex ante net anthropogenic emissions	partial	✓	✗	✓
Permanence				
Permanence	partial	✓	partial	✓
Monitoring				
Of baseline scenario	✗	✓	✓	✓
Of project activities carbon benefits	✗	✓	✓	✓
Of project area leakage	partial	✓	✓	✓
Of project region leakage	✗	✓	✓	✓

	FSC	VCS	CCBS	CFS
Accreditation/ verification practices				
Inclusion of basic ISO requirement for certification bodies	✓	✓	✓	✓
Commitment to ISEAL requirements for Social and Environmental Labeling systems	✓	✗	partial	✗
Existence of scheme specific requirements for C/V/VBs proportionate to the complexity of the system	✓	✗	✗	✗
Direct insight in the performance of the scheme through the accreditation process	✓	✗	✗	✗
Transparency in the performance of the system through access to certification/ accreditation reports and their public summaries	✓	partial	partial	partial
Impact monitoring program to monitor the performance of the scheme	✓	✗	✗	✗

5.2. Legal framework

i. Project area definition

FSC — *covered*

VCS — *covered*
Covered in 3.4.1 (AFOLU Requirements: VCS Version 3 2012)

CCBS — *covered*
(Brotto *et al*., 2010)

CFS — *covered*

ii. Land tenure/ownership

FSC — *covered*

VCS — *covered*
Demonstrate control over entire project area found in 3.42 (AFOLU Requirements: VCS Version 3 2012) and Right of Use 3.12.1 VCS Standard V3.2

CCBS — *covered*
Land tenure must be clarified before project begins (Merger & Williams, 2008)

CFS — *covered*
Strict criteria requiring evidence of secured land tenure (Merger & Williams, 2008)

iii. Land tenure disputes

FSC — *covered*

VCS — *partially covered*
No explicit guidelines included but Right of Use addressed in 3.12.1 and in the Non-permanence risk analysis. VCS Standard V3.2.

CCBS — *covered*
(Brotto *et al.,* 2010)

CFS — *partially covered*

iv. Norm mapping at local, national, and international level

FSC — *covered*

VCS — *covered*

(Brotto *et al.,* 2010)

CCBS — ***covered***
Requires evidence that laws are respected (Merger & Williams, 2008)

CFS — ***partially covered***

The planting area is only eligible if the area has not been forest for ten years prior to the project start date and must be proven by satellite images, aerial photographs, official maps or land-use records (CarbonFix Standard v3.2).

v. Law compliance at local, national, and international level

FSC — ***covered***
(WWF, 2008; Brotto *et al*., 2010)

VCS — ***covered***
(WWF, 2008) and covered in 3.1.2 AFOLU Requirements: VCS Version 3. 2012).

CCBS — ***covered***
(WWF, 2008)

CFS — ***covered***

In the General Terms & Conditions (GTC) that supplement the CarbonFix Standard (CFS) and set further criteria for its usage.

vi. Carbon credits property rights

FSC — ***not covered***

FSC is not asking to provide information, hence in any case:

- *review norm mapping looking at laws and decrees specifying carbon credit ownership;*
- *hire a consultant for a REDD+ Legal Analysis;*
- *consult stakeholders to understand actual level of property rights enforcement and discover informal users and free riders;*
- *apply Free Prior and Informed Consent approach;*
- *obtain formal letters of intent or signed commitment;*
- *establish private legal contracts.*

VCS — ***covered***
(Brotto *et al.,* 2010)

CCBS — ***covered***
(Brotto *et al.,* 2010)

CFS — ***covered***

vii. Authorities approval

FSC — ***not covered***

FSC is not asking to provide it, hence in any case:

- *check requirements, framework and timeline of Governmental REDD initiatives/plans;*
- *include Public Administration in stakeholders consultation;*
- *obtain a Governmental letter of project approval.*

VCS — ***covered***

CCBS — ***covered***

CFS — ***covered***

5.3. Financial stability

i. Fair income distribution

FSC — *partially covered*

Already FSC Certified: FSC asks forest managers to fairly redistribute the income generated from the management of forests (P&C: 4.1, 4.5 and 3.3). The FSC approach should be extended to the revenues coming from carbon credits. Particular attention should be given to the involvement of local communities in the monitoring phase. Extensive studies on this have been carried on under the "Kyoto Think Global ActLocal" project".

Not FSC Certified: A strategy to ensure fair income distribution should be established (e.g. establishment of trust funds, benefits sharing mechanisms agreed with local communities, etc.). Equitable benefit sharing in regard to poverty alleviation partially covered (Merger et al., 2011). FSC provides the weakest guidance in regard to benefit sharing in comparison to the three carbon standards.

VCS — *not covered*
(Brotto *et al.,* 2010)

CCBS — *covered*
Equitable benefit sharing in regard to poverty alleviation (Merger *et al.,* 2011)

CFS — *partially covered*
Equitable benefit sharing in regard to poverty alleviation partially covered (Merger *et al.,* 2011)

ii. Financial health of organization

FSC — *covered*

VCS — *covered*
(Brotto *et al.,* 2010)

CCBS — *covered*
Requires project proponent to provide sufficient information on the financial health of a project (Merger & Williams, 2008)

CFS — *covered*
Strict requirements for providing evidence of financial health (Merger & Williams, 2008)

iii. Transaction cost lowering capacity

FSC — *covered*
Fully covered

VCS — *covered*
(Brotto *et al.,* 2010)

CCBS — *covered*
(Brotto *et al.,* 2010)

CFS — *covered*

iv. Financial viability

FSC — *covered*
Fully covered

VCS — *covered*
(Brotto *et al.,* 2010)

CCBS — *covered*
(Brotto *et al.,* 2010)

CFS — *partially covered*
Evidence must be given that suitable knowledge transfer within the project management is ensured over time and description of welfare activities is required (CarbonFix Standard, 2012).

v. Enhancement of project region economy

FSC — *covered*
Fully covered

VCS — *covered*
(Brotto *et al.,* 2010)

CCBS — *covered*
(Brotto *et al.,* 2010)

CFS — *not covered*

vi. Management transparency

FSC — *partially covered*

Already FSC Certified: Through the international certificate database, the public availability of forest management plan summary and audit reports FSC is already providing a basic set of tools to ensure transparency (P&C: 7.4, 8.5 and 9.3). In addition, transparency is pursued through the use of carbon registries and communication between actors.

Not FSC Certified: Build efficient communication systems and apply for a carbon registry.

VCS — ***covered***

A project database provides a description, validation, and verification reports; VCS assigns a unique serial number to each Verified Carbon Unit through a registry to avoid double selling/counting; public involvement not required (Merger & Williams, 2008)

CCBS — ***covered***

Information regarding project name and location, PDDs, public comments, name of CCB certifier, final verification reports, and CCB status are available on the CCBS website (Merger & Williams, 2008); public involvement is possible for a 30 day period (Rules for the Use of the CCB Standards, 2010)

CFS — ***covered***

Each project is assigned its own webpage [on the ClimateProjects platform] with related information including photos, comments of project visitors, news from the project developer, documents, validation and verification reports and maps (including a Google Map function). Public involvement is possible and comments can be submitted at any time; and CFS allows CO_2 buyers to utilize a track-and-trace system with unique codes that can be printed on their products; CFS uses a registry (and will join a supra-voluntary registry) to avoid double selling/counting (Merger & Williams, 2008).

5.4. Environmental and social impacts

5.4.1. Environmental and biodiversity baseline description

The 'conservation of rare and endangered species' and 'consideration of social and cultural values of biodiversity' are covered by FSC, CCBS, and CFS (Merger *et al.,* 2011).

FSC — *covered*
(WWF 2008; Brotto *et al.,* 2010)

VCS — *partially covered*
Does not cover biodiversity (Merger *et al.,* 2011) or the assessment of social and environmental impacts (WWF, 2008). Partially covered in the PD template.

CCBS — *covered*
For biodiversity (Merger *et al.,* 2011) and a 1 for the assessment of social and environmental impacts (WWF 2008)

CFS — *partially covered*
For biodiversity (Merger *et al.,* 2011)

5.4.2. Environmental and biodiversity impacts

FSC — *covered*

VCS — *partially covered*
for biodiversity (Merger et al., 2011); VCS does not primarily focus on co-benefits but does require identification and mitigation of negative environmental and socio-economic impacts (Merger & Williams, 2008)

CCBS — *covered*
for biodiversity (Merger *et al.,* 2011); Risks concerning climate, surrounding communities, and biodiversity have to be described, measured and mitigated, and the CCBS provides additional measures for projects to reach a silver or gold level (Merger & Williams, 2008).

CFS — *partially covered*
for biodiversity (Merger *et al.,* 2011). Net positive environmental impacts concerning soil, water, biodiversity must be enhanced (Merger & Williams, 2008).

5.4.3. Environmental and biodiversity impacts monitoring

FSC — *covered*

VCS* — *not covered to partially covered*
This is not the primary focus of VCS and not required (Merger & Williams, 2008).

CCBS — *covered*

Rigorous monitoring systems for biodiversity and socio-economic impacts must be implemented; In addition this is verified every five years (Merger & Williams, 2008).

CFS — *covered*

Monitoring of co-benefits completed every two to five years (Merger & Williams, 2008)

5.4.4. Social baseline description

FSC — *covered*

VCS — *partially covered*

Partially covered in the PD template.

CCBS — *covered*

(Brotto *et al*., 2010)

CFS — *not covered*

5.4.5. Social impacts

CCBS and CFS do include regulations that consider the rights and livelihoods of local stakeholders affected by the project, while VCS does not. Only CCBS requires project impacts inside and outside the project area regarding poverty alleviation, while FCS, VCS, and CFS only require project impacts inside project area boundaries.

FSC — *covered*

Fully covered, but Merger *et al.*, 2011 would consider 'poverty alleviation' only partly covered.

VCS — *not covered*

Not covered as part of the poverty alleviation (Merger *et al.,* 2011)

CCBS — *covered*

For poverty alleviation (Merger *et al*., 2010); requires evidence that people are not displaced or mistreated (Merger & Williams, 2008).

CFS — *partially covered*

For poverty alleviation, and socio-economic impacts (employment, neighborhood, and capacity building) must be enhanced (Merger & Williams, 2008). Stakeholders must be subject to free, prior, and informed consent and evidence must be provided that no children under the age of 16 are working for the project (CarbonFix Standard v3.2).

5.4.6. Social impacts monitoring

FSC — *covered*

VCS — *not covered*

Not the primary focus of VCS and not required

CCBS — *covered*

(Brotto *et al*., 2010)

CFS — *not covered*

5.4.7. Stakeholder consultation, grievance mechanism and transparency

FSC — *covered*

Covered well (WWF, 2008; Brotto *et al.*, 2010)

VCS — *partially covered*

Not included as per WWF (2008). Stakeholder consultation and transparency (PDD and audit reports available) are required in the current version of the standard (VCS v3 2012)

CCBS — *covered*

'Legal compliance to laws and rights', 'Stakeholder participation and consultation', 'Conflict resolution mechanisms' and 'Requirement to evidence capacity building' via Merger *et al*. (2011).

CFS — *covered*

'Legal compliance to laws and rights', 'Stakeholder participation and consultation', 'Conflict resolution mechanisms' and 'Requirement to evidence capacity building' via Merger *et al.* (2011) are covered well.

5.4.8. Identification and monitoring of High Conservation Value (HCV) Areas

FSC and CCBS require project developers to apply the HCV concept, and CCBS standards include the most comprehensive coverage of biodiversity values (Merger et al., 2011).

FSC — *covered*

Covered well (WWF, 2008; Brotto *et al*., 2010)

VCS — *not covered*

(WWF, 2008)

CCBS — *covered*

(Brotto *et al.,* 2010)

CFS — ***partially covered***

Requires project developers to establish and manage a nature conservation area or meet a national or subnational HCV area definition of at least 10% of the entire project area (CarbonFix Standard 2009).

5.4.9. Climate change adaptation capacity

FSC — ***partially covered***

Already FSC Certified: FSC certification requires the establishment of permanent sample plots that are viable instruments to monitor the adaptation of the forests to climate change. In addition it requires the monitoring of:

- *composition and observed changes in the flora and fauna (P&C: 8);*
- *yield of forest products, growth rate and forest conditions (P&C: 8);*
- *water resources (P&C: 5.5, 6.5 and10.8).*

Furthermore FSC certification asks forest managers to take into account changes of the economic, environmental and social conditions (P&C: 7.2)

Not FSC Certified: A climate change adaptation strategy should be implemented.

VCS – — ***not covered***

(Brotto *et al.,* 2010)

CCBS — ***covered***

(Brotto *et al.,* 2010)

CFS — ***partially covered***

CFS, v3.2, Page 14, Chapter "Environmental Aspects", Criterion 9

5.4.10. Long-term viability of benefits

FSC — ***partially covered***

Already FSC Certified: Biodiversity, social and environmental issues are addressed by FSC with a long-term view (P&C: 1.6, 2.1, 4, 7, 10.7 and 1.5).

Not FSC Certified: A strategy aiming at ensuring long-term benefits independently of project success should be established.

VCS — ***not covered***

(WWF, 2008)

CCBS — ***covered***

(WWF, 2008)

CFS — ***covered***

5.5. Sustainable Forest Management

i. Elaborative guidance on design of forest management plans

FSC — ***covered***
(Merger *et al.,* 2011)

VCS — ***not covered***

This is not the primary focus of VCS and not required

CCB — ***not covered***
(Merger *et al.,* 2011)

CFS — ***covered***
(Merger *et al.,* 2011)

ii. Avoidance of converting natural forest to other land uses

FSC — ***covered***
(Merger *et al.,* 2011)

VCS — ***covered***

CCB — ***covered***
(Merger *et al.,* 2011)

CFS — ***covered***
(Merger *et al.,* 2011)

iii. Maintenance and protection of ecosystem services

FSC — ***covered***
(Merger *et al.,* 2011)

VCS — ***not covered***

CCB — ***covered***
(Merger et al. 2011)

CFS — ***covered***
(Merger *et al.,* 2011)

5.6. Carbon accounting

5.6.1. Baseline scenario

i. Carbon pools selection

FSC — ***not covered***

FSC already asked indirectly to account for above ground biomass and harvested wood products. Always include at least above and belowground biomass as carbon pools. Check specific voluntary carbon standards guidelines. Scientific background is provided in GOFC-GOLD REDD Sourcebook39, Paragraph 2.2.5.1 "Decisions on which carbon pools to include".

VCS — ***covered***

For living biomass, aboveground woody and below ground carbon are compulsory (Merger & Williams, 2008).

CCBS — ***covered***

Depending on the methodology, all carbon pools can be selected.

CFS — ***covered***

Considers different carbon pools for calculating future CO_2 fixation, baseline and leakage (Merger & Williams, 2008)

ii. Sources of GHGs emissions identification

FSC — ***not covered***

FSC is not asking to identify them, hence in any case:

- *account only for significant sources (> 5% of total GHG benefits);*
- *check carbon standard's specific requirements (e.g. VCS)*

VCS — ***covered***

Covered in 2.3.2 VCS Standard V3.2

CCBS — ***covered***

(Brotto *et al.,* 2010)

CFS — ***covered***

iii. Project region definition

FSC — ***not covered***

FSC does not ask for this information. Project areas with larger sizes required lower multiples. Methodologies usually report the minimum dimension. E.g.: for projects above 100,000 ha, the reference region should be about 5-7 times larger than the project area. For projects

below 100,000 ha, the reference region should be 20-40 times the size of the project area. The project region should have similar ecological, economic and social conditions to the project area. Tables exist to determine the level of similarity. In the case of Controlled Wood FSC certification, the project region could correspond to the district where the risk analysis is carried out.

VCS — ***covered***
(Brotto *et al*., 2010)

CCBS — ***covered***
(Brotto *et al*., 2010)

CFS — ***not covered***

iv. Analysis of historical land-use and land-cover change in the project region

FSC — ***partially covered***
FSC requires only partial land-use and land-cover change analysis (P&C: 7.1 b1), hence:

- *look for secondary data (e.g. existing projections approved by Government bodies for the project region; similar projects in the project region with a more advanced state of development);*
- *If secondary data are not available, then:*
  - *follow carbon standard's specific requirements;*
  - *analyze historical data following GOFC-GOLD REDD Sourcebook.*

VCS — ***covered***
(Brotto *et al*., 2010)

CCBS — ***covered***
(Brotto *et al*., 2010)

CFS — ***covered***

CFS, v3.2, Page 11, Chapter "Eligibility", Criterion 1

v. Analysis of agents, drivers, and underlying causes of deforestation and degradation

FSC — ***not covered***
FSC does not require this analysis, hence in both cases:

- *look for secondary data (e.g. existing projections approved by Government bodies for the project region; similar projects in the project region with a more advanced state of development);*
- *If secondary data are not available then define agents and drivers following Terra Global Capital LLC (2009) paragraph II.1.3 Step 3 "Analyze the agents and drivers of deforestation".*

VCS — ***covered***
(Brotto *et al*., 2010)

CCBS — ***covered***

(Brotto *et al*., 2010)

CFS — ***covered***

AR CDM Additionality test

vi. Projection of future deforestation and degradation

FSC — ***not covered***

Use data obtained from above calculation, economic forecast and historical data to create a Carbon Model (e.g. with MS Excel) which predicts the deforestation and forest degradation rates in the project region. Keep the emissions from deforestation and those from forest degradation separate. The final result is the definition of the Baseline Deforestation and Degradation Rates (expressed as a %/yr).

VCS — ***covered***

(Brotto *et al*., 2010)

CCBS — ***covered***

(Brotto *et al*., 2010)

CFS — ***covered***

Specific risks (i.e. fire and disease) are addressed in detail (Merger & Williams, 2008)

vii. Definition of the land-use and land-cover change inside project area without project

FSC — ***partially covered***

Already FSC Certified: The current land use inside the project are is already identified through the FSC certification (P&C: 7.1 b). The future land use and land cover change without project need to be identified.

Not FSC Certified: Define the likely scenario in project area without the project, using the land-use and land-cover change matrix adopted for the project region.

VCS — ***covered***

(Brotto *et al*., 2010)

CCBS — ***covered***

(Brotto *et al*., 2010)

CFS — ***covered***

A description of the historical and current situation within a project area must be given for the last fifty years and include the changes in land-uses and property rights (CarbonFix Standard v3.2).

viii. Estimation of baseline carbon stock changes

FSC — ***partially covered***

Already FSC Certified: Forest inventories conducted in an FSC certified forest can provide an estimation of the variation in carbon densities of the forest (P&C: 7.1, 5.6 and 6.1). Better carbon density estimations are acquired by measuring standing tree diameters starting from 10 cm DBH with a sampling error of less than 10%. In addition the estimation of standing dead-wood and lying deadwood can be included in the FSC inventory protocol. Once the carbon densities are gathered based on the expected land-use and land-cover change variation it is possible to estimate the baseline carbon stock change.

Not FSC Certified: Carbon stock densities for each land use cover can:

- *come from secondary data like forest inventories or scientific studies;*
- *be taken from default IPCC values;*
- *obtained through inventories.*

Once the carbon densities are gathered based on the expected land-use and land-cover change variation it is possible to estimate the baseline carbon stock change.

VCS — ***covered***

Uses own methodology or those approved by A/R CDM. Included in 3.16.1 in VCS Standard V3.2

CCBS — ***covered***

Baselines defined by CDM Land Use, Land-Use Change, and Forestry (LULUCF) methodologies or IPCC's Good Practice Guidance (WW,F 2008b; Brotto *et al.*, 2010).

CFS — ***covered***

Requires calculations of future CO_2 fixation based on formulas of the IPCC

5.6.2. Additionality

VCS, CCBS, and CFS all accept the A/R CDM additionality tool, adopted by the UNFCCC's Clean Development Mechanism for afforestation and reforestation projects and permits other methodologies developed by the standard body (Merger *et al.*, 2011).

FSC — ***not covered***

(WWF, 2008; Brotto *et al.,* 2010) *Already FSC Certified: Most of the data necessary to prove additionality have already been registered for the FSC certification (e.g. cash flow):*

- *mandatory surplus: FSC is a voluntary certification;*
- *additional climate benefits: the annual harvesting rate can be decreased. In this case there could be the possibility of shifting towards an FSC SLIMFs (Small and Low Intensity Managed Forests) certification to lower certification costs;*
- *financial test: pressures from deforestation and degradation drivers are expected to increase the costs of maintaining the FSC certificate till the point that extra incomes are required;*

- *investment barrier: FSC certification is economically viable only due to existing vertical market integration (e.g. revenues coming from sawmilling and other primary or secondary processing certified under FSC CoC are covering the costs of the Forest Management certification);*
- *social condition barrier: the forestry business created by FSC certification can allocate the immigrants only till a certain level.*

Not FSC Certified: Additionality tests:

- *mandatory surplus: FSC is a voluntary certification;*
- *additional climate benefits: reduced forest management emissions due to adoption of reduced impact logging (RIL) should be demonstrated. Secondary data demonstrating the climate benefits of RIL can be used if deriving from locally applicable scientific studies;*
- *barrier test: use any of the barrier tests (e.g. the area is the first certified forest area in the region).*

VCS — ***covered***

Includes regulations for verification through a VCS Project Test, Performance Test or Technology Test, and are project specific or performance based (Merger & Williams, 2008; WWF, 2008). This is required to be considered under the VCS Standard, and processes and procedures are deferred to the methodology. The VCS has an AFOLU additionality tool which applies to all AFOLU categories and is derived from the CDM A/R additionality tool. It should be noted that the additionality test between VCS and CDM can be slightly different.

CCBS — ***covered***

Project specific. Accepts the methodologies of the IPCC Good Practice Guidance (GPG) and approved methodologies of the CDM Executive Board (Merger & Williams, 2008; WWF 2008).

CFS — ***covered***

Project developers may gain approval via an internationally recognized bank or utilizes the CDM method (Merger & Williams, 2008).

5.6.3. Leakage

i. Project area leakage calculation

FSC — ***not covered***

(WWF, 2008; Brotto *et al*., 2010) *Already FSC Certified: If the forest area is already FSC certified and the harvesting rate is not going to be decreased there is no leakage due to the fact that no activities are displaced. If for any reason (e.g. expected illegal logging) there will be a displacement of harvesting operations, data about harvesting rate are registered under the FSC certification.*

Not FSC Certified: The displacement of harvesting activities has to be calculated.

VCS — *covered*
(WWF, 2008; Brotto *et al.,* 2010) Included in 3.6.1 (AFOLU Requirements: VCS Version 3. 2012)

CCBS — *covered*
(WWF 2008; Brotto *et al.,* 2010) CFS – 1 Includes guidelines for determining leakage (CarbonFix Standard V3.2).

CCBS — *covered*

ii. Project region leakage calculation

FSC — *not covered*
Relevant sources of leakage (e.g. immigration) need to be estimated.

VCS — *covered*

CCBS — *covered*

CFS — *covered*
Includes guidelines for determining leakage outside the project area (CarbonFix Standard v3.2).

5.6.4. Ex ante net anthropogenic GHG emission reductions or stock enhancement

FSC — *partially covered*
Based on the anticipated REDD+ project activities it is possible to define the future carbon emission and stock increase, to be subtracted from the emissions anticipated in the baseline scenario.

VCS — *covered*
Ex-post credits (Merger & Williams, 2008)

CCBS — *not covered*
Not applicable (Merger & Williams, 2008)

CFS — *covered*
Ex-ante credits (Merger & Williams, 2008)

5.6.5. Permanence

FSC — *partially covered*

Already FSC Certified: FSC certificate holders commit to maintain permanent forest cover (P&C: 1.6, 2.1, 4, 7, 10.7 and 1.5) but there is no formal insurance about permanence beyond the expiry date of the FSC certificate. Hence there is still the need to establish a non-permanence credits buffer. The VCS considers FSC certification a risk minimizing factor.

Not FSC Certified: There is the need to establish a non-permanence credits buffer.

VCS — ***covered***

'Permanence assurance based on buffer accounts'; 5-60% Buffer (Merger & Williams, 2008). Permanence assurance is based on the use of the AFOLU Pooled Buffer account, where buffer credits are pooled into an account where credits are held and cannot be traded. In the event of a reversal, credits from the AFOLU pooled buffer account are cancelled to assure permanence of credits that have been issued.

The lowest possible risk rating, and subsequently the lowest amount of credits buffered for each issuance of credits, is 10 percent. Also, it might be noted that the risk rating is determined by applying the Non-Permanence Risk Tool. (VCSA 2012)

CCBS — ***partially covered***

Buffer not applicable, but if a project becomes certified, the carbon calculations must be based on an accepted A/R CDM methodology. It does recommend that projects withhold 10% of their CO_2 credits from selling in the compliance market (Merger & Williams, 2008).

CFS — ***covered***

Permanence assurance is based upon a 30% buffer account (Merger & Williams, 2008)

5.6.6. Monitoring

i. Of baseline scenario

FSC — ***not covered***

Agents and drivers of deforestation and baseline rate of deforestation and degradation need to be monitored.

Monitoring is based at various scales and intensities as per each plan, allowing for adaptive management and third party audits, with verification and monitoring periodicity occurring every five years and surveillance audits every year (FSC 1996).

VCS — ***covered***

Monitoring is required for VCS projects. At the level of the VCS Standard, there is no specific requirement for how frequently monitoring must occur. As with all other aspects of the VCS program, like additionality, the criteria and procedures for monitoring are deferred to the methodology (VCSA 2012)

CCBS — *covered*

Monitoring must be completed within twelve months of the initial validation and completed every five years (CCBSA 2008).

CFS — *covered*

Every five years for at least 30 years, project developers must follow an inventory guideline for A/R projects for monitoring GHG benefits, while socioeconomic and environmental aspects are monitored by meeting the standard criteria and adaptation of the project design (CarbonFix Standard 2009; Merger *et al.,* 2011).

ii. Of project activities carbon benefits

FSC — *not covered*

Already FSC certified: Data necessary to monitor those project activities related to forest management are already monitored for the FSC certification monitoring plan (P&C: 8.2). Project activities other than forest management need to be monitored.

Not FSC Certified: All project activities need to be monitored.

The Merger and Williams 2008 comparison 'revealed that CCBS provides the highest co-benefit standard of all four carbon standards'.

VCS — *covered*

Based on ISO 14064.

CCBS — *covered*

CFS — *covered*

iii. Of project area leakage

FSC — *partially covered*

Already FSC Certified: The FSC certification monitoring system (P&C: 8.2) can detect the displacement of harvesting activities.

Not FSC Certified: Displacement of harvesting activities needs to be monitored.

VCS — *covered*

(Brotto *et al*., 2010)

CCBS — *covered*

(Brotto *et al*., 2010)

CFS — *covered*

Includes guidelines for determining leakage (CarbonFix Standard V3.2).

iv. Of project region leakage

FSC — ***not covered***

Sources of leakage identified as relevant (Module 2 c i) need to be monitored.

VCS — ***covered***

(Brotto *et al*., 2010)

CCBS — ***covered***

(Brotto *et al*., 2010)

CFS — ***covered***

Includes guidelines for determining leakage (CarbonFix Standard V3.2).

5.7. Accreditation / verification practices

i. Inclusion of basic ISO requirement for certification bodies

FSC — *covered*
(NEPCon, 2012)

VCS — *covered*
Through ISO 14064 and ISO 14065 basic principles.

CCB — *covered*
Through FSC or CDM requirements.

CFS — *covered*
Through FSC or CDM requirements.

ii. Commitment to ISEAL requirements for Social and Environmental Labelling systems

FSC — *covered*
(NEPCon, 2012)

VCS — *not covered*

CCB — *partially covered*

The CCBA has been following the ISEAL code of good practice since the CCBS revision in 2008 but can't make any public claim to follow ISEAL because it is not a member, since it is not an independent entity.

CFS — *not covered*

iii. Existence of scheme specific requirements for C/V/VBs proportionate to the complexity of the system

FSC — *covered*
(NEPCon, 2012)

VCS — *not covered*
Can use third-party auditors accredited by other schemes.

CCB — *not covered*
Can use third-party auditors accredited by other schemes.

CFS — *not covered*
Can use third-party auditors accredited by other schemes.

iv. Direct insight in the performance of the scheme through the accreditation process

FSC — *covered*
(NEPCon, 2012)

VCS — ***not covered***
Can use third-party auditors accredited by other schemes.

CCB — ***not covered***
Can use third-party auditors accredited by other schemes.

CFS — ***not covered***
Can use third-party auditors accredited by other schemes.

v. Transparency in the performance of the system through access to certification/ accreditation reports and their public summaries

FSC — ***covered***
(NEPCon, 2012)

VCS — ***partially covered***
V/V reports are available in their own website, but accreditation audit reports are not publicly available.

CCB — ***partially covered***
V/V reports are available in their own website, but can use third-party auditors accredited by other schemes than FSC and they might not have available the accreditation audit reports.

CFS — ***partially covered***
V/V reports are available in their own website, but can use third-party auditors accredited by other schemes than FSC and they might not have available the accreditation audit reports.

vi. Impact monitoring program to monitor the performance of the scheme

FSC — ***covered***
(NEPCon, 2012)

VCS — ***not covered***

CCB — ***not covered***

CFS — ***not covered***

6. Case studies

As explained in Section 3 (Method), this section aims to compliment the results of the standards comparison presented in *Section 5,* bringing in field experience from project proponents and forest managers. By assessing real case examples, the study aims to ascertain what the most common impacts of using FSC standards with carbon standards are, and determine where there are gaps and benefits in dual certification.

A description of the project is provided in an information table and a summary of the project goals and activities is included. This is followed by a section on the synergies of using the two standards (FSC and carbon), and finally a section describing the barriers.

Each project focuses on one of the criteria defined in *Section 5*, and gives specific illustrative examples. Any discussions related to other of criteria may be briefly mentioned, signifying that these were common issues.

Finally, an additional case study regarding double-counting has been included, indicating that this is a relevant and evolving aspect that should be monitored, especially in regions such as Europe where there is an existing compliance market.

6.1. Legal framework

Brazil

6.1.1. Project description

General information

Project name	Cikel Brazilian Amazon REDD APD Project
FSC certificate	RA-FM/COC-005147
Carbon standard(s)	VCS
Project type	REDD+
Forest area (ha)	FSC: 199.168,83 /VCS: 27.434,9
Project proponent	CKBV Florestal Ltda.
Project proponent type of organization	Private
Financer	Dutch private company
Project location	Paragominas, Pará (Brazil)
Credits/timber buyer	Various buyers
Registry	In process
Emissions avoided/captured (t CO_2)	9.432.299
Project lifetime (years)	20
Tenure ownership	Private
Forest type	Secondary Amazon forest

Workers at the forest management unit

Since 1999, CKVB Florestal Ltda. adapted their practices and techniques according to the principles set out in FSC certification. This includes:

- compliance with all applicable laws and international treaties
- demonstrated and uncontested, clearly defined, long–term land tenure and use rights
- recognition and respect of indigenous peoples' rights
- maintenance or enhancement of long-term social and economic well-being of forest workers and local communities and respect of worker's rights in compliance with International Labour Organisation (ILO) conventions
- equitable use and sharing of benefits derived from the forest
- reduction of environmental impact of logging activities and maintenance of the ecological functions and integrity of the forest
- appropriate and continuously updated management plan
- appropriate monitoring and assessment activities to assess the condition of the forest, management activities and their social and environmental impacts
- maintenance of High Conservation Value Forests (HCVFs) defined as environmental and social values that are considered to be of outstanding significance or critical importance

Due to difficulties in its commercial wood business in 2005 and 2006, the project proponent, a Brazilian private and family company, decided to legally convert 20% of its forest property in the Rio Capim Complex to pasture to diversify its business beyond wood products.

The main activity of the project is the cancelation of the planned deforestation activities and decision to instead conserve the forest area and continue limited forest management activities in the area under FSC with Low Impact Logging practices. Also, the company is intensifying and improving its practices to support the sustainable social development, maintaining and improving the biodiversity monitoring in the framework of FSC certification and REDD activities.

The financial incentives from the sale of Verified Carbon Units (VCUs) permit the project activity to be competitive with alternative business scenarios like livestock and allow CKBV Florestal Ltda. to cancel its legal forest conversion plans and maintain its forest management activities.

As a result of implementing this REDD Project, it is estimated that 9,432,299 tons of CO_2 emissions will be avoided which would have been emitted into the atmosphere over a 10 year period in the absence of the project, not including the project's non-permanence risk buffer contribution.

6.1.2. Main overlaps/synergies for the carbon/FSC certification

FSC was a requirement within the VCS chosen methodology, REDD Methodology Modules (REDD-MF, VM 0007), and as the company was already FSC certified, they only needed to change the scope to include the whole project area.

Most aspects linked to social and environmental practices, financial stability and sustainable forest management were deemed as covered when aiming to achieve VCS validation. Carbon accounting was also greatly facilitated by work carried out in forest inventories and in the establishment of the plots within the FSC framework, as all of the information taken was used. However the scope of information needed to be expanded to include other carbon pools, such as litter, that the methodology required was not taken in a regular inventory

Looking more closely at the legal framework, the project area definition, land tenure/ownership, land tenure disputes, norm mapping and law compliance were found to be overlapping for the two standards without much extra work.

6.1.3. Main differences/barriers for the carbon/FSC certification

The CIKEL Brazilian Amazon REDD APD Project representative interviewed for this report feels that while there should be a mutual recognition for some specific parts of the standard, the systems should be kept separate as they represent different attributes, complementing one another and bringing added value to the market as separate, individual standards. In general, carbon buyers are not familiar with FSC, but when the system was carefully explained on a case-by-case basis, buyers stated that they believed it fulfilled their expectations in terms of social and environmental safeguards.

To achieve VCS validation, the project proponent had to carry out additional work for carbon accounting. The main aspect developed was a leakage determination, as per the methodology requirements, but others, such as deforestation projections, also had to be taken into account.

As part of the legal framework, they also needed to establish carbon credits property rights and gain approval from the authorities. The effort needed for this varies depending on the national context. This is especially true given the fact that carbon, as an environmental service, is still new in many countries. In these cases, issues such as determining which ministry is responsible (such as the Environment Ministry) and what the relationship is like between that and other related ministries (e.g. Forests), can dramatically effects the ease of access to these permits.

6.2. Financial stability

Guatemala

6.2.1. Project description

General information

Project name	Promoting Sustainable Development through Natural Rubber Tree Plantations in Guatemala
FSC certificate	SW-FM/COC-005461
Carbon standard(s)	VCS
Project type	A/R/R
Forest area (ha)	2366
Project proponent	Producción, Industrialización, Comercialización y Asesoria de Hule Natural, S.A-Grupo Occidente
Project proponent type of organization	Company
Financer	Own financing
Project location	Suchitepéquez, Río Dulce, Izabal, Cubilgüitz (Alta Verapaz), Guatemala
Credits/timber buyer	First Climate (intermediary for European banks)
Registry	APX
Emissions avoided/captured (t CO_2)	1,739,855
Project lifetime (years)	36
Tenure ownership	Private
Forest type	Forest rubber plantation

The project established rubber tree plantations in degraded and degrading lands where the traditional land-use was cattle grazing. The species planted was *Hevea brasiliensis*. Direct planting of *Hevea brasiliensis* in the project area began in 2007 and is expected to continue through 2013. The methodology AR-ACM0001 V 03 'Afforestation and reforestation of degraded land' was followed.

The *Hevea brasiliensis* plantations owned by the project participants are changing the socio-economic conditions of the region by improving employment rates and incomes. Currently the project proponent is seeking a financial solution that will allow not only the expansion of its own plantations as well as the plantations of the small and medium enterprises (SMEs), but also to encourage practices of responsible management within rubber plantations that provide rubber to PICA's industrial plant, thereby increasing the amount of raw material available for processing.

The project aims to create a model of sustainable competitiveness in the natural rubber sector in Guatemala by introducing several innovative practices. The first will be to create a sustainable mechanism for project finance, introducing carbon finance as a new and key financial tool to reach the required rate of return for investors in rubber plantations. The second innovation will be to create a comprehensive toolkit of methods and knowledge related to carbon project development, monitoring and management for new rubber tree plantations. The third innovation represents a milestone in sustainable management of rubber tree plantations in Latin America, as the plantations established by the project will be certified under the FSC Principles and Criteria.

In addition to generating emission reduction credits, the plantations will serve as a buffer area for 675 hectares of the Cerro San Gil natural rainforest reserve in the Izabal Department.

Not only will the project create new employment opportunities for stakeholders, it will strive to protect worker safety and rights, while maintaining a good relationship with neighboring communities.

PICA currently works with 350 rubber suppliers (plantation owners). In accordance with PICA's strategic plan, the knowledge and experience gained through the project will be replicated with additional suppliers to expand the areas of their plantations.

6.2.2. Main overlaps/synergies for the carbon/FSC certification

As explained above, FSC certification has been used together with VCS with two main objectives:

- The first objective is to obtain an additional source of income by selling the timber and NTFP (rubber) as FSC certified with added value. An effort was thus made in this direction by developing a specific NTFP standard as per the FSC requirements. Within the project, carbon credits are considered to be an additional source of income to be able to cover the cost of the FSC certification. A sustainable model was created in order to balance responsible activities and incomes.

- The second objective is to manage the risk of the forest carbon project. When the project proponent studied which standards to use, FSC was seen as the only scheme that could ensure that strong social and environmental requirements would be met in a forest management context.

Examples of this risk mitigation in the social arena are:

> *FSC 2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.*
>
> *FSC 4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.*
>
> *FSC 4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.*
>
> *FSC 4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.*

For this reason, a prior condition for any landowners seeking to join the project is that they must meet the FSC standard requirements.

In general, all the work carried out in terms of legal issues (including labor laws), stakeholder consultation, Environmental Impact (including avoiding deforestation in natural forests and improving relationships with neighboring communities), forest plot monitoring, and carrying-out external audits for the two standards were seen as synergies.

More specifically, regarding the "financial stability" criteria used in this study, all of the criteria related to financial health of the organization, financial viability, enhancement of project region economy, and management transparency were considered in both certification systems.

6.2.3. Main differences/barriers for the carbon/FSC certification

The FSC covers the fair income distribution in the following three criteria:

> *FSC 3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.*
>
> *FSC 4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.*
>
> *FSC 4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.*

VCS, on the other hand, does not present any such requirement. However, incomes from carbon credits in PICA's project are re-invested in maintaining the FSC certificate, which is considered to be important from the project proponent's point of view.

Transaction costs were also perceived to be an issue that is considered within VCS only, but it was deemed to be very minor as the VCS is clear for the project proponent on the cost and process to issue VCUs.

The biggest barrier noted is that when seeking certification for two different standards, the criteria, even if it is the same within both standards, can become confusing and there then appears to be too many indicators to comply with. This presents different problems:

- In some cases the same requirement is found in different part of the standard, which leads to confusion and is seen as a waste of time by fulfilling the evidence twice for the same indicator.
- The same requirement may be worded differently by the different standards, and this leaves the door open to different interpretations
- The cost of creating the structure with very professional and high technical level staff to respond to all the requirements needs to be considered
- All this gets worse when different CBs or V/VB's are assessing the project due to different accreditations

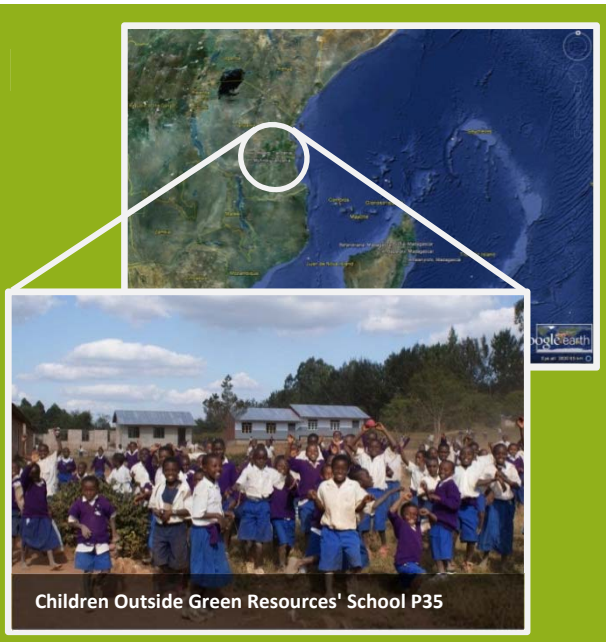
6.3. Environmental and Social impacts

Tanzania

6.3.1. Project description

General information

Project name	Uchindile and Mapanda Forest Project
FSC certificate	SGS-FM/COC-005066
Carbon standard(s)	CCB, VCS
Project type	A/R
Forest area (ha)	FSC: 30042/VCS: 12121
Project proponent	Green Resources Limited
Project proponent type of organization	Private company
Financer	Green Resources AS
Project location	Mufundi and Kilombero (Tanzania)
Credits/timber buyer	The Carbon Neutral Company
Registry	APX
Emissions avoided/captured (t CO_2)	1.500.000
Project lifetime (years)	60
Tenure ownership	Government
Forest type	Plantation



Children Outside Green Resources' School P35

The Government of Tanzania, through the Forestry Division in the Ministry of Natural Resources and Tourism (MNRT) encourages the establishment of private forests plantations and admits that limited government financing has been a major setback in developing new forest plantations in the country. The project is intended therefore to benefit the forestry sector through an increase in support for resource supply, management and overall sustainability to demonstrate that carbon sequestration from forest plantations is a viable instrument to encourage private investment in the forestry sector especially on grasslands and/or degraded lands.

This reforestation project is divided in two separate areas, namely, Uchindile Forest Project (UFP) and Mapanda Forest Project (MFP), with multiple "discrete areas of land" where planting take place. The project was originally a CDM A/R project, but 2 non-compliances were found (early start date and lack of forest threshold definition in Tanzania) and the project was redirected to VCS. FSC certification was obtained first, in 2008 (prior to seeking any other certification), thereby fulfilling a requirement from the financer, and one year later, as the system was developing, CCB validation was obtained, which constituted the third CCB validation granted in the world.

The objectives of the proposed A/R project activity are:

- To establish and manage forest plantations so as to contribute to the demand of high quality wood products from a sustainable managed forest.

- To sequester CO_2 through forest planting in grassland areas.
- To promote environmental conservation, such as soil conservation, protection of water sources and enhancement of biodiversity through the protection and management of existing indigenous flora and fauna and where possible enrichment planting with indigenous species and fruits.
- To facilitate socio-economic development of the local communities through:
    - promotion of tree planting/reforestation activities in the local communities;
    - providing employment opportunities;
    - generation of income for the communities through the sale of carbon credits (10% of the benefits of all carbon credits will be used for community development projects)
- Infrastructure development of roads, buildings and other aspects, such as water supply and communication systems.
- To create employment for other Tanzanians apart from those in the village local communities.

6.3.2. Main overlaps/synergies for the carbon/FSC certification

The company has other projects in Tanzania and Uganda, all with the requirement to achieve FSC certification. This is considered to represent in general the highest, most reliable and most comprehensive standard, with the most specific indicators capable of promoting a sound project which can respond to the social and environmental requirements that need to be implemented within a managed forest.

Thus, the approach used by the project proponent has been in general to organize the work to fulfill the FSC and then check if the other standards were also met, often with a positive result. For example, the assessment of the High Conservation Values (HCV) is much more detailed in the FSC system, with a whole Principle (P9) dedicated to it, than in any other system, including the CCB, although both rely on the HCVF network toolkit (see www.proforest.net/our-expertise/hcv-and-conservation) as source of information. The same happens when looking at the compliance with national and local laws. Even with regards to carbon sequestration, which is usually not explicitly considered to be a benefit from the FSC system, the implementation of best practices as required by the FSC led to an increase in carbon stocks as considered by the project proponent, although further research would have to be made to quantify it.

Regarding the assessed indicators in this review, all the and Social and Environmental Impacts, the S&E baseline description, S&E impacts, S&E monitoring, stakeholder consultation, grievance mechanism, transparency, identification and monitoring of HCV, and long term viability of benefits were covered both by FSC and CCB, so the approach to use the FSC to cover these matters was found to be appropriate.

From the above, VCS would cover only the E & S impacts, stakeholder consultation, and transparency. The same approach has been taken, using the more specific FSC requirement in the following criteria for E & S impacts:

FSC 4.4 Management planning and operations shall incorporate the results of evaluations of

social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.

FSC 6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

It's to be noted that the VCS requirement reads as follows:

VCS AFOLU Requirements Section 3.1.4: Negative environmental and socio-economic impacts: project proponents shall identify potential negative environmental and socio-economic impacts and shall take steps to mitigate them. Additional standards such as the Climate, Community & Biodiversity Standards (CCBS) or Forest Stewardship Council (FSC) certification may be applied to demonstrate social and environmental benefits beyond GHG emissions reductions or removals. VCUs may be tagged with additional standards and certifications on the VCS project database where both the VCS and another standard are applied.

Also, FSC has more detailed procedures for stakeholder notifications and consultations, public disclosure of the Forest Management summary and audit report were used as evidences to fulfill VCS (and as said CCB) requirements, since the request for VCS is only to disclose the findings from stakeholders.

Regarding the climate adaptation capacity, which again is not an explicit part of the FSC requirements, most of the information can be taken from the data and used to fulfill the following criteria:

FSC 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:

a. Forest regeneration and succession.
b. Genetic, species, and ecosystem diversity.
c. Natural cycles that affect the productivity of the forest ecosystem.

FSC 6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

FSC 8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

FSC 8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators:

a. Yield of all forest products harvested.
b. Growth rates, regeneration and condition of the forest.
c. Composition and observed changes in the flora and fauna.
d. Environmental and social impacts of harvesting and other operations.

e. Costs, productivity, and efficiency of forest management.

9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.

9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

6.3.3. Main differences/barriers for the carbon/FSC certification

Besides the carbon calculations, which are not directly included in the FSC requirements, a number of differences have been identified. The CCB is at first glance considered to be more beneficial as it requires providing evidence of net positive Social and Environmental impacts (CM1 and B1), where the underlined words are meant to make a difference.

CCB CM1 The project must generate net positive impacts on the social and economic well-being of communities and ensure that costs and benefits are equitably shared among community members and constituent groups during the project lifetime.

*Projects must maintain or enhance the High Conservation Values (identified in **G1**) in the project zone that are of particular importance to the communities' well-being**.***

*CCB B1 The project must generate net positive impacts on biodiversity within the project zone and within the project lifetime, measured against the baseline conditions. The project should maintain or enhance any High Conservation Values (identified in **G1**) present in the project zone that are of importance in conserving globally, regionally or nationally significant biodiversity**.** Invasive species populations45 must not increase as a result of the project, either through direct use or indirectly as a result of project activities. Projects may not use genetically modified organisms (GMOs) to generate GHG emissions reductions or removals. GMOs raise unresolved ethical, scientific and socio-economic issues. For example, some GMO attributes may result in invasive genes or species.*

However, the wording of the indicators are vague, (e.g. the first indicator of the B1 criteria mentions "use appropriate methodologies"), and the differences as compared to FSC are not so drastic when put into practice. As examples of more specific criteria encompassing biodiversity net positive impacts we can find:

FSC 6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.

FSC 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:
a) Forest regeneration and succession.

b) Genetic, species, and ecosystem diversity.
c) Natural cycles that affect the productivity of the forest ecosystem.

FSC 6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

FSC has been proven to be more adapted to the Forest Management context, dealing more specifically with this activity's control and impacts in the environment and workers. Some examples in the same biodiversity area are:

FSC 6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources – and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

FSC 6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

FSC 6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

FSC 6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.

FSC 6.8 Use of biological control agents shall be documented, minimized, monitored an strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.

FSC 6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.

As the system with the longest trajectory, the FSC presents more guidance with a considerable number of supporting documents to refer to, which is very helpful when it comes to working on the less straightforward field of social and environmental issues, as compared to pure, mathematical carbon calculations.

Some examples of these guidance documents include: the "FSC Pesticides Policy", the "Guidance on implementation of Principles 2 and 3", the "Guidance on the Interpretation of FSC P&C to Take Account of Small Scale and Low Intensity", the "FSC certification and ILO Conventions", and the "FSC Interpretation on GMOs".

Also, there is a committee that meets regularly to discuss technical interpretation questions as they arise, and the guidelines are made publicly available on their website. Regarding CCB, the project developers found the release of the 2011 “Social and Biodiversity Impact Assessment Manual” to be very useful as guidance.

6.4. Sustainable forest management

Peru

6.4.1. Project description

General information

Project name	Madre de Dios Amazon REDD project
FSC certificate	SW-FM/COC-002176, SW-FM/COC-002175
Carbon standard(s)	CCB, VCS on-going
Project type	REDD+
Forest area (ha)	98939
Project proponent	Maderacre, Maderyja, Greennox
Project proponent type of organization	Private
Financer	Maderacre, Maderyja, Greennox
Project location	Iñapari, Peru
Credits/timber buyer	Various types, e.g. ECODES
Registry	None
Emissions avoided/captured (t CO_2)	27304727
Project lifetime (years)	20
Tenure ownership	Public (concessions)
Forest type	Natural amazon low altitude rainforest

Forest worker at the Maderacre

The project area is completely covered by different rainforest types, mainly low hill highly dissected forests. The aim of this project is to reduce the environmental and social impacts of the construction of the inter-oceanic road from Brazil to the Peruvian ports in the Pacific Ocean. Obtaining revenue for the environmental services that the rainforest offers was considered the only way to preserve these areas by generating sources of additional income for local populations with low income, thereby contributing to improving their way of life.

The information obtained (satellite images, maps, interviews, forestry inventories, etc.) was processed with the objective of identifying potential projects and evaluating their viability. Afterwards, the different elements were combined in a matrix: legal situation, location of the conservation corridors, average size and availability of biomass and costs information.

According to the results, the project was selected taking into account several different factors – the most important being the economic criteria (volume of existent carbon), legal criteria (quantity of credit owners, type of ownership) and social criteria (risk of deforestation, accessibility to the area)

As part of the project's development, it was considered crucial to consolidate the sustainable management of the area, which consists of forestry concessions with timber and non-timber forest products, private areas and protected natural areas.

The two concessions (Maderacre and Maderyja) active in the area had voluntarily achieved FSC Certification for 100% of their forests. Some parts of the forests have had selective logging, mainly of high value timber species like mahogany or cedar, but also around 2-11 other timber species are being harvested annually under a management plan that has determined a 20-year logging cycle and is using reduced impact extraction techniques. The timber potential of these forests is enormous. Besides the wood production, they would also offer a variety of other products of high economic value, such as medicines, oils, aromatic substances, textile fibers, gums, resins, inks, and tannins, among others.

FSC certification was obtained for both concessions in 2007, quite some time before CCB validation in 2009. Now, the project is seeking VCS validation.

6.4.2. Main overlaps/synergies for the carbon/FSC certification

Using the experience from Maderacre, they consider that synergies in all the criteria used in this study were found when looking into carbon due to their prior FSC experience. For example, FSC certification was instrumental in improving their efficiency and control over the entire project, and in being able to increase their marketing capacity. That was very helpful when entering into the carbon matters, as things were very well organized. Thus, with the good accountability they were able to control the small margins of their business in increasing fuel prices for this remote region and having consistent arguments not only for the financial status of the organization but also in terms of additionality of the project.

Much of the existing information from the pure forestry side was also used when entering into the carbon accounting criteria as defined in this study. For example, with regards to risks of permanence and land tenure, having an active FSC certificate in Peru actions an almost automatic renewal of the concession for 40 years. This assurance is generally shared with all other stakeholders, including the carbon auditors (the CCB V/V B is not the same that the FSC CB in this case)

The system developed for the monitoring requirement for FSC can also be utilized to meet the requirements of VCS. For example, it is possible to use the forest degradation data from FSC, with adjustments and calculations to determine losses in carbon sequestration. Having to fill out different templates for different standards (CCB and VCS) is considered an obstacle.

All three standards require the avoidance of converting natural forests to other land uses, and both the FSC and CCB require the maintenance of ecosystem services.

6.4.3. Main differences/barriers for the carbon/FSC certification

Besides the cost for the carbon calculations and PD development, which result in a considerable amount of resources due to the need of specific experts, at least during this developing phase of the standards and methodologies, the main difference is considered to be the whole Forest Management activity is considered a difference, as the carbon standards used do not have specific criteria for this. This valid both for the extraction of timber and other forest products, as the “castaña” (*Bertholletia excelsa*), a very common traded NTFP for which the Rainforest Alliance has developed specific standards within the FSC framework.

No elaborative guidance on designing the forest management plans is provided by other systems than the FSC (which has a full Principle, P7, dedicated exclusively to this).

Besides this, as mentioned in the 6.3 case, there is lack of adaptation to the situations that appear regarding the Social and Environmental matters.

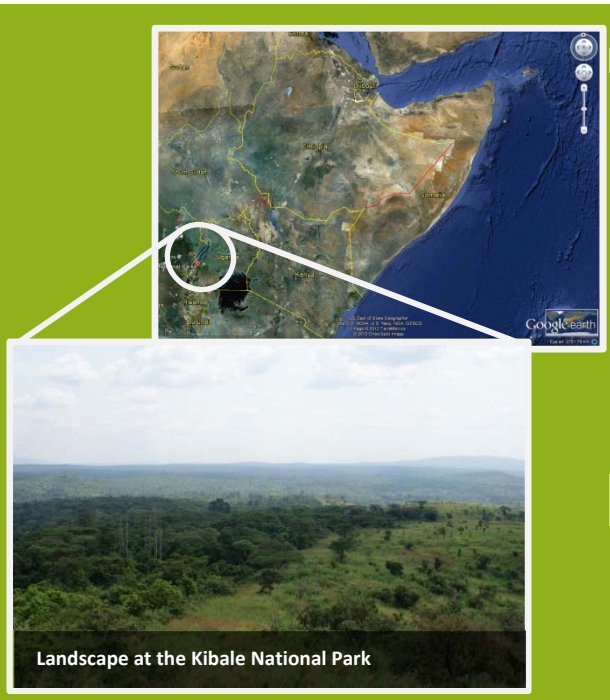
6.5. Carbon accounting

Uganda

6.5.1. Project description

General information

Project name	Natural High rainforest restoration project in Kibale National park
FSC certificate	SGS-FM/COC-000979
Carbon standard(s)	VCS
Project type	A/R
Forest area (ha)	VCS: 12121, FSC: 79.500
Project proponent	Face the Future
Project proponent type of organization	Private company
Financer	Face the Future and others
Project location	Kibale, western Uganda
Credits/timber buyer	Various Carbon Intermidiaries and End-Use buyers for the purposes of Voluntary efforts to offset carbon emissions
Registry	Markit
Emissions avoided/captured (t CO_2)	500.000
Project lifetime (years)	60
Tenure ownership	Government
Forest type	Natural



Landscape at the Kibale National Park

The Kibale National Park is considered to contain some of the highest biological diversity in Uganda. There are at least 372 species of birds, 4 species of wild cats and contains at least 351 species of trees. This National Park also supports an exceptionally diverse and abundant primate fauna: 13 species of primates are found within the park, accounting for 67 % of the country's total species (IUCN, 1988). Due to the high precipitation, complex landform and undulating valleys, as well as continual human disturbance (fire, grazing, charcoal production and cultivation) and poor land management, the area has been subjected to severe degradation of the surrounding vegetation as well as soil erosion.

This Project, located in the western part of Uganda, is implemented by Uganda Wildlife Authority (UWA) in cooperation with Face the Future (FtF). The purpose of the project is to realize multiple socioeconomic and environmental benefits (local community development, climate change mitigation, biodiversity conservation and soil erosion control) through restoring forest vegetation on degraded lands. FSC certification aims to provide evidence of the quality of the project operations. Specific project objectives are to:

- Restore the integrity of the degraded forest ecosystems in the National Park and thereby enhance biodiversity conservation and control of soil erosion. This is achieved by replanting the degraded areas with locally occurring indigenous trees species.

- Transfer forestry knowledge and skills to the local communities with an aim to make them environmental ambassadors of the project.
- Provide employment opportunities to the communities adjacent to the park.
- Provide income generating opportunities by encouraging the establishment of locally owned and operated nurseries where seedlings are raised and later sold to the ARR VCS project.
- Promote regeneration of natural vegetation in the forest interior areas by creating a forested zone around the edge of the park which will act as a buffer to relieve the interior areas of pressure from agents of deforestation and degradation (i.e. anthropogenic caused fires).

While the FSC certification was obtained prior the VCS validation (2002 vs. 2011) this project has been looking into carbon since 1999, using the SGS Carbon Offset Verification Service (COV) standard, and the initial FSC audit and SGS-COV audit, which were simultaneously carried out in December 1999. Afterwards, as the VCS was trending as the most reliable and broadly used standard for carbon accounting they decided to switch to that system.

6.5.2. Main overlaps/synergies for the carbon/FSC certification

As a general comment, many synergies are found from the project proponent perspective in the field of legality, social and environmental issues, sustainable forest management, certification, and even carbon accounting between the FSC and the carbon standards.

It is worth mentioning that in this specific project, FSC as a whole was seen as having a synergy with the carbon project. Since no timber is produced, the main interest in obtaining FSC certification is to achieve a good and demonstrable performance in the project activities.

The project proponent thinks that in general, the carbon buyers do not seem to recognize the FSC label, while they do for other social and environmental standards such as CCB. It is only to respond to their specific concerns on some environmental or social issues of a project that taking the relevant information from the FSC reports, and demonstrating that it is part of a third partly audited system where the response to the criteria and stakeholder comments is public, that the system was taken in account and accepted as a safeguard. The project proponent has different examples of this kind of request that have been fulfilled for instance with the criteria:

> *FSC 2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.*
>
> *FSC 3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.*
>
> *FSC 4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.*

The project proponent considers that it would be useful if CCB could lower the requirements to achieve CCB validation for FSC certified forests.

Regarding carbon information in particular, much of the data is applicable for both standards, for example regarding some of the secondary data used to respond to the following:

- Historical land-use and land-cover change in the project region
- Analysis of agents, drivers, and underlying causes of deforestation and degradation
- Definition of the land-use and land-cover change inside project area without project
- Estimation of baseline carbon stock changes
- Additionality
- Stock enhancement
- Permanence
- Monitoring

As carbon is not the main focus of FSC certification and all of these aspects are broadly covered by the carbon standards, depending on the methodology used, the FSC information would help in a more or lesser extent.

In general however, the carbon projects world is very broad and new, with many on-going processes at technical and political levels, and everything needs to be well justified. In this context, the project proponent considers that having the FSC certification represents reliable evidence to prove conformance.

6.5.3. Main differences/barriers for the carbon/FSC certification

The biggest barrier to maintain both systems is linked to costs of the project development, especially the cost of fulfilling the two sets of requirements although sometimes using the same source of data is possible. Again, this could be reduced with mutual standard recognition for specific aspects.

The VCS standard is now recognizing other standards such as the CCB or the FSC. For example:

- *VCS AFOLU Requirements Section 3.1.4: Negative environmental and socio-economic impacts: project proponents shall identify potential negative environmental and socio-economic impacts and shall take steps to mitigate them. Additional standards such as the Climate, Community & Biodiversity Standards (CCBS) or Forest Stewardship Council (FSC) certification may be applied to demonstrate social and environmental benefits beyond GHG emissions reductions or removals. VCUs may be tagged with additional standards and certifications on the VCS project database where both the VCS and another standard are applied.*

- *VCS AFOLU Non-Permanence Risk Tool Section 2.2.4.4: Projects with tree harvesting: For ARR and IFM projects with harvesting, project longevity may include the length of time the activities that maintain carbon stocks will continue, either through the continuation of the project activity or by replanting or re-growth of the trees after the last harvest in the project crediting period. Such commitment to continue the management practice, or to replant or allow re-growth shall be demonstrated through evidence such as certification of sustainable*

forest management under Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) or other internationally recognized schemes, or contractual agreements for timber supply beyond the last harvest in the project crediting period. Re-growth may be considered only where project areas, after harvesting, will be managed for regeneration (naturally or with assistance), maintaining the current species mix and allowing trees to re-grow to an age equivalent to at least the age at which trees were harvested, as demonstrated in management plans.

Nonetheless, the project proponent is missing broader guidance on other aspects that, more specifically, would link one standard to another. It would be helpful, as an example, if mutual recognition of the criteria below was reached:

FSC 6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:

a) entails a very limited portion of the forest management unit; and
b) does not occur on high conservation value forest areas; and
c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.

VCS AFOLU Requirements Section 3.1.5: Conversion of native ecosystems: Project activities that convert native ecosystems to generate GHG credits are not eligible under the VCS Program. Evidence shall be provided in the project description that any ARR, ALM or PRC project areas were not cleared of native ecosystems to create GHG credits (e.g., evidence indicating that clearing occurred due to natural disasters such as hurricanes or floods). Such proof is not required where such clearing or conversion took place at least 10 years prior to the proposed project start date. The onus is upon the project proponent to demonstrate this, failing which the project shall not be eligible.

The following carbon components were not described in FSC and are typically specific to the VCS carbon standard:

- Carbon pools selection
- Project region definition
- Projection of future deforestation and degradation
- Leakage
- Ex ante net anthropogenic GHG emission reductions

6.6. Accreditation / verification practices

Panamá

6.6.1. Project description

General information

Project name	CO2OL Tropical Mix
FSC certificate	SW-FM/COC-005337
Carbon standard(s)	CFS, CCBA
Project type	A/R
Forest area (ha)	860
Project proponent	Forest Finance
Project proponent type of organization	Private
Financer	Forest Finance
Project location	Darién, Panamá
Credits/timber buyer	Different small buyers
Registry	Markit (future)
Emissions avoided/captured (t CO_2)	25000
Project lifetime (years)	50
Tenure ownership	Private
Forest type	Plantation (60% native species)

Worker at the plantation

The main objective of CO2OL Tropical Mix is the creation of close to nature forests with the main goals of i) storing a high amount of atmospheric carbon; and ii) producing fine tropical hardwood, while stabilizing and restoring fragile and degraded areas in an economically, socially, and ecologically viable way.

ForestFinance enhances the role of tropical forest plantations as components of multifunctional landscapes by contributing to native biodiversity conservation and restoration at different spatial scales. Its forest management practices protect watersheds, foster conservation of biodiversity, improve ecological processes through the preservation of locally adapted biodiversity, create ecological corridors and retain native biodiversity, while sequestering high amounts of greenhouse gases.

Overall, ForestFinance's specific objective is to establish profitable and sustainable forestry systems that create year-round work opportunities within the project activity areas. This allows for the development of a stable work environment for men and women, supporting the progress of these regions. Through acceptable salaries and decent working conditions that allow a fair living, they want to contribute to improved livelihoods in the lesser developed areas of Panama.

The CO2OL Tropical Mix project describe itself as the only and first project worldwide that follows the WWF approach of an Meta Standard, which says that a high quality carbon reforestation project should use three standards, one accounting standard like CFS and VCS, one Standard focusing the

ecological part, like CCBS and for sustainable forest management, it should use FSC. FSC certification was the first obtained, back in 1994, and then CCB in 2009 and CFS in 2012.

6.6.2. Main overlaps/synergies for the carbon/FSC certification

The synergies concerning the data obtained for FSC appeared again when developing the carbon project, especially since the CFS recognizes the environmental and social part of the FSC and CCB. Further synergies were found on other aspects. Regarding carbon quantification, for example, they used the data from the inventory they had and for simplicity didn't expand it to other carbon pools beside the aboveground biomass. Monitoring was another area where the existing system from FSC certification was maintained and proved useful for meeting the criteria of the other standards.

Having FSC certification also imparted confidence regarding the process of developing the carbon project to all the external parties, including the auditors from the CFS standard organization (that themselves perform the first assessment of the project, a "pre-certification") and the FSC auditors.

6.6.3. Main differences/barriers for the carbon/FSC certification

The lack of concretion of CCB and the big quantity of FSC requirements are underlined by the project proponent as obstacles, and they acknowledge preferring the conciseness of CFS on that. Again, FSC is found to be unknown in the carbon market, which is the reason for them to use the CCB. Another reason for using the latter is that the fact that it includes the term "Biodiversity" in its name seems to attract more investors. Also, FSC is tied to the FMU concept as the basis of the assessment, while CCBS gives a role to impacts at the project region level.

6.7. Double counting

Switzerland

6.7.1. Project description

General information

Project name	Oberallmig Climate Protection Project
FSC certificate	SGS-FM/CoC-001215
Carbon standard(s)	CCB
Project type	IFM
Forest area (ha)	7379
Project proponent	Oberallmeindkorporation (OAK) Schwyz
Project proponent type of organization	Community organization
Financer	Oberallmeindkorporation Schwyz
Project location	Switzerland
Credits/timber buyer	Various regional small and medium enterprises
Registry	None (self administered)
Emissions avoided/captured (t CO_2)	360000
Project lifetime (years)	30
Tenure ownership	Community
Forest type	Natural (Mountain Forest)

Mountain forest at the Oberallmeindkorporation Schwyz

The OAK Schwyz is an old family law corporation with more than 17,000 members living in the canton of Schwyz. The OAK Schwyz was mentioned in writing for the first time in the 12 century and its origin dates back to settlement of this mountainous region in the early middle ages. The forest management of the OAK Schwyz has been certified according to FSC since 2002.

From 2003 to 2005, the OAK Schwyz took part in a project of the Swiss Federal Office for Environment to account for carbon sinks. A detailed study was carried out in 2005 on OAK Schwyz, focusing on the compliance market during the first commitment period 2008-2012 of the Kyoto Protocol. The project started in 2005.

The project can be characterized as Improved Forest Management (IFM) in that it increases the carbon stock of a forest by extending the rotation period in plantation forests and harvesting below the yield for some time. The forests of the OAK Schwyz mainly are not plantations but rather originate from natural regeneration and are mostly unevenly aged. Harvesting is carried out on a single tree basis or on small areas. To calculate ex ante the net anthropogenic GHG removals by sinks the formulae of the CDM small scale method AR-AMS0001 are used. That method is designed for afforestation projects, but there are variables included for already existing carbon stocks, so it was decided to take those formulae also for the IFM project type.

6.7.2. Main overlaps/synergies for the carbon/FSC certification

The data and sources of information were deemed, in general, to be the same, and thus the information that was used for FSC, in general, was applied to comply with the CCB requirements.

The costs/effort needed to comply with the additional standard is thus deemed to be low in the legal framework aspects (with which they were already complying as per the general management plan), the financial stability, the environmental and social aspects (fully covered to fulfill FSC requirements) and the sustainable forest management (also met for FSC).

6.7.3. Main differences/barriers for the carbon/FSC certification

As in other cases, the project proponent considers that CCB has not developed indicators adapted to the forest management context. They also would like to see more recognition in CCB, as CFS does, of the potential to utilize FSC criteria to fulfill their own standard requirements.

Carbon accounting was the only aspect they had to develop in addition to FSC requirements. The interest of including this case study was to analyze the situation of double counting in contexts such as Europe, which in parallel to the voluntary systems is committed to the Kyoto Protocol. Switzerland is applying Art. 3.4 of the Kyoto Protocol, so the carbon stock changes of the forests are counted in the national carbon balance. No legal basis has been introduced to let the forest owners benefit of the carbon asset, so the OAK Schwyz decided to conduct a climate protection project for the voluntary market. Double counting in the national balance “is avoided” by following specific procedures confirmed by the Swiss Federal Office for the Environment but this did not comply with the CCBA policy at the time.

The project proponent then looked into CFS, as the buyers had understood and accepted the risk of double counting, but CFS did not at the time (it does now, see *Section 7.4*). Double-counting was then the major barrier for this project, and CCB validation was declined for this reason. The project has decided to sell the credits with their own scheme until further clarification is provided.

7. Discussion

7.1. FSC and carbon: more synergies than barriers

As illustrated in the case studies in *Section 6*, most of the criteria analyzed was perceived by project proponents as having synergies, with only a few considered to be barriers.

Across all case studies and looking at this from different perspectives – project types, geographical context, project proponent feedback – the synergies are a result of the information generated to fulfill FSC certification which is subsequently used in the carbon validation/verification process – most projects achieved FSC certification before carbon validation. Even for carbon accounting, which is not explicitly covered in the FSC standard, the requirements are comprehensive enough to generate enough information during the FSC certification process that it can be used for carbon validation. This did not become clear from the literature review but was revealed through the assessment of the process at an implementation level.

Obstacles were mainly related to the cost of implementing two (or more) systems. While indicators across different standards can be similar in intent and impact, slightly different wording can result in the different interpretations. This and the use of different templates for different standards make the collective process more time intensive. The cost barrier is especially challenging for small-scale projects, as is always the case.

As a result, the project proponents identified the need to identify and streamline similar requirements across the standards. The CarbonFix Standard demonstrates this can be done - projects that are FSC certified or CCB validated don't need to address some of CarbonFix requirements. However, this system only covers afforestation and reforestation projects, and is therefore not applicable to the REDD and IFM cases seen here.

The new FSC Principles & Criteria can cover many of the gaps identified in the project proponents' interviews. Below are examples of these gaps and the means by which the new FSC P&C could address them, if completed by the adequate indicators (please note, indicators for the new FSC P&C have not been developed yet).

- Carbon credits property rights and authorities approval can be addressed in:
    - *New FSC criteria 1.1: The Organization shall be a legally defined entity with clear, documented and unchallenged legal registration, with written authorization from the legally competent* authority for specific activities.*
    - *New FSC criteria 1.2: The Organization shall demonstrate that the legal status of the Management Unit, including tenure and use rights, and its boundaries, are clearly defined.*
    - *New FSC criteria 1.3: The Organization shall have legal rights to operate in the Management Unit, which fit the legal status of The Organization and of the*

Management Unit, and shall comply with the associated legal obligations in applicable national and local laws and regulations and administrative requirements. The legal rights shall provide for harvest of products and/or supply of ecosystem services from within the Management Unit. The Organization shall pay the legally prescribed charges associated with such rights and obligations

- Fair income distribution can be addressed in:
    - *New FSC criteria 3.1: The Organization shall identify the indigenous peoples that exist within the Management Unit or are affected by management activities. The Organization shall then, through engagement with these indigenous peoples, identify their rights of tenure, their rights of access to and use of forest resources and ecosystem services, their customary rights and legal rights and obligations, that apply within the Management Unit. The Organization shall also identify areas where these rights are contested.*
    - *New FSC criteria 3.5: The Organization, through engagement with indigenous peoples, shall identify sites which are of special cultural, ecological, economic, religious or spiritual significance and for which these indigenous peoples hold legal or customary rights. These sites shall be recognized by The Organization and their management, and/or protection shall be agreed through engagement with these indigenous peoples.*
    - *New FSC criteria 4.1: The Organization shall identify the local communities that exist within the Management Unit and those that are affected by management activities. The Organization shall then, through engagement with these local communities, identify their rights of tenure, their rights of access to and use of forest resources and ecosystem services, their customary rights and legal rights and obligations, that apply within the Management Unit.*
    - *New FSC criteria 4.7: The Organization, through engagement with local communities, shall identify sites which are of special cultural, ecological, economic, religious or spiritual significance, and for which these local communities hold legal or customary rights. These sites shall be recognized by The Organization, and their management and/or protection shall be agreed through engagement with these local communities.*
- Climate adaptation capacity can be addressed in:
    - *New FSC criteria 6.4: The Organization shall protect rare species and threatened species and their habitats in the Management Unit through conservation zones, protection areas, connectivity and/or (where necessary) other direct measures for their survival and viability. These measures shall be proportionate to the scale, intensity and risk of management activities and to the conservation status and ecological requirements of the rare and threatened species. The Organization shall take into account the geographic range and ecological requirements of rare and threatened species beyond the boundary of the Management Unit, when determining the measures to be taken inside the Management Unit.*

- *New FSC criteria 6.5: The Organization shall identify and protect representative sample areas of native ecosystems and/or restore them to more natural conditions. Where representative sample areas do not exist, The Organization shall restore a proportion of the Management Unit to more natural conditions. The size of the areas and the measures taken for their protection or restoration shall be proportionate to the conservation status and value of the ecosystems at the landscape level, and the scale, intensity and risk of management activities.*

- *New FSC criteria 6.6: The Organization shall effectively maintain the continued existence of naturally occurring native species and genotypes, and prevent losses of biological diversity, especially through habitat management in the Management Unit. The Organization shall demonstrate that effective measures are in place to manage and control hunting, fishing, trapping and collecting.*

- *New FSC criteria 6.7: The Organization shall protect or restore natural water courses, water bodies, riparian zones and their connectivity. The Organization shall avoid negative impacts on water quality and quantity and mitigate and remedy those that occur.*

- *New FSC criteria 6.8: The Organization shall manage the landscape in the Management Unit to maintain and/or restore a varying mosaic of species, sizes, ages, spatial scales and regeneration cycles appropriate for the landscape values in that region, and for enhancing environmental and economic resilience.*

- Positive Social and Environmental aspects can be addressed in:

  - *New FSC criteria 2.2: The Organization shall promote gender equality in employment practices, training opportunities, awarding of contracts, processes of engagement and management activities.*

  - *New FSC criteria 2.3: The Organization shall implement health and safety practices to protect workers from occupational safety and health hazards. These practices shall, proportionate to scale, intensity and risk of management activities, meet or exceed the recommendations of the ILO Code of Practice on Safety and Health in Forestry Work.*

  - *New FSC criteria 2.4: The Organization shall pay wages that meet or exceed minimum forest industry standards or other recognized forest industry wage agreements or living wages, where these are higher than the legal minimum wages. When none of these exist, The Organization shall through engagement with workers develop mechanisms for determining living wages.*

  - *New FSC criteria 2.6: The Organization through engagement with workers shall have mechanisms for resolving grievances and for providing fair compensation to workers for loss or damage to property, occupational diseases, or occupational injuries sustained while working for The Organization.*

- *New FSC criteria 4.3: The Organization shall provide reasonable opportunities for employment, training and other services to local communities, contractors and suppliers proportionate to scale and intensity of its management activities.*
- *New FSC criteria 5.1: The Organization shall identify, produce, or enable the production of, diversified benefits and/or products, based on the range of resources and ecosystem services existing in the Management Unit in order to strengthen and diversify the local economy proportionate to the scale* and intensity of management activities.*
- *New FSC criteria 5.3: The Organization shall demonstrate that the positive and negative externalities of operation are included in the management plan.*
- *New FSC criteria 5.4: The Organization shall use local processing, local services, and local value adding to meet the requirements of The Organization where these are available, proportionate to scale, intensity and risk. If these are not locally available, The Organization shall make reasonable attempts to help establish these services.*

7.2. Estimated cost of double-certification

As mentioned, cost was a matter raised as a problem compared to the benefits obtained and that balance had to be calibrated frequently as the project evolved, while efficiencies could be implemented as per the standard mutual recognition.

The questionnaire (see annex A) and interviews included an estimation of costs to develop the carbon project from an FSC certification starting point, so using the data already developed to meet that standard requirements. A ranking with categories was given for facility categories:

No or negligible cost	US$ 0
Low cost	<US$ 1,000
Medium cost	US$ 1,000 – 10,000
High cost	US$ 10,000 – 100,000
Very High cost	>US$ 100,000

The amount estimated was divided into various aspects (*See Annex A: Questionnaire*)

The responses obtained reveal several cost implications for projects that are t in the process of doing a forest carbon project after having obtained an FSC certificate:

- The Project Development Document (PDD) development was generally considered to have a medium cost (US$ 1,000 to 10,000) for plantations or regular forestry operations but a high cost for the REDD projects. Depending on the situation of the country regarding the clarity of the carbon property rights and the institutional responsibilities, clarifying the carbon

property rights and gaining approval from authorities can take a significant share of the total costs of the PDD development.

- The GHG quantification in general was estimated to have a medium cost for the plantations or regular forestry operations and a high to very high cost for the REDD projects. This was mainly due to the costs involved in analyzing agents, drivers, and underlying causes of deforestation and degradation, the projection of future deforestation and degradation, and the leakage quantification, as the data obtained to fulfill the FSC requirements were not deemed to be relevant for these categories.

- Monitoring was ranked in the low to medium cost categories, so there seems to be good overlap between FSC and carbon standard processes. Monitoring of project leakage was the aspect that differed more than the usual for forest management, but having all the procedures in place as required for FSC certification significantly reduced the effort invested in monitoring.

- Other additional costs, representing the marketing of the carbon credits, were estimated to be low when compared with the other categories.

As the carbon projects remain a new way to approach Payment for Environmental Services (PES) – thus requiring expertise within an evolving context – there have been few organizations well positioned in terms of capacity to run a project, or more specifically, to develop the technical documentation needed to validate it under a sound carbon standard. This is why the costs provided were expensive and do not fluctuate between different regions.

FSC certification positively impacted all categories, especially for monitoring. Good guidance and harmonization between the respective requirements across the different standards could further reduce costs.

Furthermore, there were delays in the schedule resulting from the carbon validation schemes being relatively new. In many cases, this meant that the carbon and the FSC audits were not carried out jointly, leading to additional costs that could be reduced with learning. That said, although this was not mentioned by the Project Proponents, which mostly added the carbon part to their prior FSC practices, it's worth mentioning that FSC annual audits, besides building confidence, also add a cost to the less frequent carbon audits, since verifications are required only every five years.

7.3. Forest Management as a specific type of project

Forest Management is a category that can be combined with any of the existing project categories, namely Improved Forest Management (IFM), Afforestation, Reforestation, and Revegetation (A/R/R), an others not studied within this report, such as Peatlands Rewetting and Conservation (PRC).

Basically, all projects expounded that the only standard specific enough to demonstrate that best social and environmental practices are followed in an operational forest management context is the FSC.

This is due to the specific indicators that deal with forest management, but also to the large amount of additional guidance that the system, more experienced that the still in earlier development stages carbon systems, has established along the years.

7.4. Market recognition

Despite recognition at a technical level for the need for FSC certification to demonstrate best practices in responsible forestry, the carbon market currently doesn't recognize schemes other than pure carbon standards – with CCB as the preferred option. This point was strongly stated by project proponents.

To tap into this market, a concerted effort is needed – both in terms of more open and more detailed communication – around the benefits of engaging in the FSC system in safeguarding social and environmental values. Project proponents noted that carbon buyers do tend to value FSC more once the system's specificities have been carefully explained to them.

It should be noted that while all project interviewees acknowledge there are common issues across the certification schemes, the standards should maintain a clear and differentiated "personality", so that the public clearly understand the strengths and weaknesses of each system, and the markets recognize the added value of including one or more standards.

7.5. Double counting

This has been an unclear issue for countries with commitments from the start of the voluntary market. The Kyoto Protocol states in the Article 3 the following:

> *3. The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8.*
>
> *4. Prior to the first session of the Conference of the Parties serving as the meeting of the Parties to this Protocol, each Party included in Annex I shall provide, for consideration by the Subsidiary Body for Scientific and Technological Advice, data to establish its level of carbon stocks in 1990 and to enable an estimate to be made of its changes in carbon stocks in subsequent years. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural*

soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the Intergovernmental Panel on Climate Change, the advice provided by the Subsidiary Body for Scientific and Technological Advice in accordance with Article 5 and the decisions of the Conference of the Parties. Such a decision shall apply in the second and subsequent commitment periods. A Party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990.

The different carbon standards have thus been developing guidance on this:

i. CCB

The project proponents should provide evidence that the reductions or removals generated by the project have not or will not be used in the emissions trading program or for the purpose of demonstrating compliance with the binding limits that are in place in that jurisdiction or sector. Such evidence could include:

- *a letter from the program operator or designated national authority that emissions allowances (or other GHG credits used in the program) equivalent to the reductions or removals generated by the project have been cancelled from the program; or national cap as applicable or;*
- *purchase and cancellation of GHG allowances equivalent to the GHG emissions reductions or removals generated by the project related to the program or national cap.*

There may be specific situations where projects reduce GHG emissions from activities that are included in an emissions trading program or take place in a jurisdiction or sector in which binding limits are established on GHG emissions, but there exists a reduced risk for double counting. Such examples include:

a) *The absence of enforceable regulation to meet a binding limit on GHG emissions, such as the implementation of a national or relevant sectoral cap and emissions trading program;*

b) *The extent to which the host country is adrift of any binding limit on GHG emissions;*

c) *The absence of sufficient political will in the host country to comply with any binding limit on GHG emissions, including policies and regulation such as national or relevant sectoral cap and emissions trading program.*

For example, if an Annex 1 country were to fail to comply with its Kyoto Protocol reduction commitment, it is possible that double counting of the environmental benefit associated with any GHG emission reduction or removal projects hosted in that country might not occur. Likewise, there may be post-2012 scenarios where similar uncertainties may exist, such as if non-Annex 1 countries were to adopt non-binding or no-lose reduction commitments. However, given the uncertainties associated with these scenarios and the possibility that a country could miss its target, but still have in place functioning elements of domestic policy that would make projects non-additional, such situations must be evaluated by the CCB Standards auditor on a case-by-case basis.

ii. CFS (vs 3.2)

In case a project is located in a district or country that is part of a national or pan-national scheme that must report its forest area, the project developer can only assign its CO2-certificates to a CO2-buyerusing minimum one of the following options:

> *1a. The CO_2-buyer explicitly agrees in purchase agreements to the following statement or a statement with a similar meaning: "I am aware that this project is part of a national or pan-national scheme which is accounting the same CO_2-fixation that I am purchasing with this contract in order to achieve its national reduction target. I am aware that this may have the effect that other companies within the projects host country have to reduce less CO_2, as the project contributes to the reduction target of this scheme."*
>
> *1b. The respective agency of the projects host-country gives the following statement or a statement with a similar meaning: "Afforestation / reforestation projects that generate CO_2-certificates within our country for the voluntary market do not lower the pressure on companies of the country(ies) the host-country is part of the compliance market in."*
>
> *1c. The project developer retires one additional CO2-certificate from another project certified according to the CarbonFix Standard, Or one additional Gold Standard certificate for every CO_2-certificate assigned to a CO_2-buyer.*

Hereby, the additional retired certificate must carry the ID of the assigned CFS CO_2-certificate.

iii. VCS (v 3.2)

Where projects reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading, evidence shall be provided that the GHG emission reductions or removals generated by the project have not and will not be otherwise counted or used under the program or mechanism. Such evidence may include:

1) *A letter from the program operator, designated national authority or other relevant regulatory authority that emissions allowances (or other GHG credits used in the program) equivalent to the reductions or removals generated by the project have been cancelled from the program or national cap, as applicable.*
2) *Evidence of the purchase and cancellation of GHG allowances equivalent to the GHG emissions reductions or removals generated by the project related to the program or national cap.*
3) *Evidence from the program operator, designated national authority or other relevant regulatory authority stating that the specific GHG emission reductions or removals generated by the project or type of project are not within the scope of the program or national cap.*

Double counting is an issue that has been reducing access for forest carbon projects due to the lack of clarity from some governments, as is the case in some European countries. As the current Kyoto protocol commitment phase reaches its end in 2012, this situation is evolving and some countries are looking more closely into this and being more open to other possibilities. More forest owner are inquiring into why the carbon in their forest stocks is being used to compensate emissions from the whole country activity, even if in the diffuse sources sector, without them having any support to

keep the forest standing. The experience from the voluntary market projects and standards should be brought to this arena (*see Section 9*).

8. Recommendations

An analysis of the literature and consultations undertaken with project proponents has revealed a number of knowledge gaps. To continue exploring the synergies and barriers between FSC and voluntary carbon standards, further research is needed to in the following areas:

- A full comparison of the new FSC Principles & Criteria against the carbon standards requirements is needed. This could be carried out against each standard, with guidance on what the carbon standards should seek to fulfill FSC's requirements, and should include the full range or level of detail required to allow an assessment of the actual on-the-ground coverage of issues relevant for many forest projects.

- The FSC Generic Indicators – to be developed for the first time in FSC's history – should adequately reflect in corresponding criteria compliance to carbon standard requirements. As illustrated in the case studies, by complying with FSC requirements, enterprises go far in many of the addressed carbon standard requirements.

- There are difficulties that small scale projects experience as a result of their size, and existing proposed solutions within the carbon arena have to take their needs better into account. These could include, for example, project grouping/aggregation, or reducing the requirements beyond a threshold (see FSC's concept for "Small and Low Intensity Managed Forests").

- Particular field tests should be carried out based on the information provided by FSC certificate holders during the certification process. The field tests should be selected according to the specificities of each project category, including REDD, IFM, A/R/R, and to inform a forthcoming set of FSC Generic Indicators and field testing of these indicators.

- Specifically, it seems that carbon stock enhancement is occurring when forestry practices are managed in accordance to FSC standards, but this should be quantified through further research and the above mentioned field tests.

- Other more recent project types, such as Peatland Rewetting and Conservation (PRC), Wetlands Restoration and Conservation (WRC), or agroforestry projects should be included in future research.

- Future research has to represent all the potential geographic regions. Some project proponents were interviewed in North America and Asia, but very few projects exist that have both FSC and a carbon certification in those regions, and those contacted (in the US and Nepal) were not able to provide enough information for various reasons, including that they had not yet fully completed the certification process.

- Many countries are ascertaining how to gain the maximum benefits from the forest carbon market while maintaining the commitments to compliance market systems. Different governmental initiatives have been developed in European countries like France (with the VCS), UK (through the Woodland CO2 Code) or Italy (through CARBOMARK). Others are on-

going in countries such as Switzerland or Spain, where legislation is being used to address the issue and create new markets for the private sector. This needs to be monitored and the experience of the voluntary sustainable forestry and carbon projects, which address specific technical aspects, should be widely used in that context.

9. Conclusion

Forest management is becoming increasingly present in forest carbon projects and in Afforestation, Reforestation and Improved Forest Management. It has now also been accepted as part of REDD+, and can potentially be included in other project categories such as Peatlands Rewetting and Conservation or Wetlands Restoration and Conservation.

Over the last 20 years, the sustainable forest management movement – and specifically the FSC system – has gained a great depth and breadth of experience in standard-setting as well as governance and accreditation. The forest carbon arena can benefit from this learning and needs to be fully integrated into any forest management project.

The results of this study reveal that based on field experience, FSC is the only standard used in forest carbon projects that can demonstrate responsible forest management while protecting biodiversity and the social integrity of local communities.

CCB would offer the benefit of expanding the control of impacts to the most comprehensive area expected to be affected by the project (beyond the Forest Management Unit), and would include the leakage concept which is currently not used by FSC. As expected from the literature review, VCS would provide the most advanced and comprehensive guidance on carbon accounting, and is increasingly using linkages to other standards such as CCB and FSC. The approach taken by CFS in recognizing other standards' criteria seems to respond best to the project proponents' desire to engage in sustainable forest management with a carbon component projects.

Through this study, many synergies have been found between FSC and carbon standards (see *Section 6*) in the following five areas:

- Legal framework
- Financial stability
- E&S impacts
- Sustainable Forest Management
- Carbon accounting

Having a FSC certificate has proven to positively impact all of these categories when designing and implementing a forest management carbon project.

Finally, recommendations on future steps have been provided in *Section 8*. These represent input from field experience on potential areas for improvement in terms of quality and efficiency in the management of the forest carbon projects, and as such, should be taken into account.

Annex A: Questionnaire

		Please fill in	Comments
General information	Project name		
	FSC certificate		
	Carbon standard(s)		
	Project type (A/R, IFM, REDD etc.) - Group certificate?		
	Forest Area (ha)		
	Project proponent		
	Project proponent type of organization		
	Financer		
	Project implementer		
	Project objective		
	Project location		
	Credits/timber buyer		
	Registry		
	Time before generating revenue		
	Prepayments and associated conditions		
	Avoided net emissions (t CO_2)		
	Project lifetime		
	Crediting period		
	Species		
	Tenure ownership		
	Forest type		
	Starting date		

1	What is your main interest in obtaining/conserving FSC certification?	Mark with X	Comments
	Ensure social and environmental performance of the project		
	Maintain or restore Ecosystems		
	Added value		
	Other (please explain)		
2	**For which management objectives do you consider FSC certification is relevant / useful?**	**Mark with X**	**Comments**
	Biodiversity conservation		
	Improved Forest Management/Reduced Impact Logging		
	Timber production		
	Non timber Forest Products		
	Watershed Protection		
	Carbon sequestration		
	Risk management		
	Other (please explain)		
3	**What kind of claim do you use associated to the use of FSC certification in the context of your forest carbon project? Do you think the FSC should use any claim regarding carbon benefits?**	**Mark with X**	**Comments**
	I don't use any claim		
	I use a claim (please explain)		
4	**What were the similarities/ overlaps/ synergies in the process of obtaining FSC and the carbon standard(s) certification?**	**Mark with X**	**Comments**
	Legality		
	Carbon accounting		
	Social and environmental issues		
	Financial		
	Sustainable Forest Management		
	Certification aspects		
	Other, e.g. data overlap, methodology used, interaction with stakeholders, etc. (please explain)		
5	**What were the major obstacles to obtain dual certification?**	**Mark with X**	**Comments**
	Legality		

	Carbon accounting		
	Social and environmental issues		
	Financial		
	Sustainable Forest Management		
	Certification aspects		
	Other, e.g. data obtention, adapting to a new methodology, interaction with stakeholders, etc. (please explain)		

6	Do you think the new FSC P&C would help to reduce the obstacles regarding these items? Please comment	Mark with X	Comments
	Legality		
	Carbon accounting		
	Social and environmental issues		
	Financial		
	Sustainable Forest Management		
	Certification aspects		
	Other, e.g. data overlap, methodology used, interaction with stakeholders, etc. (please explain)		

7	What were the additional cost/efforts for a dual certification process?	None	Low (estimated <$1000)	Medium (estimated $1,000-$10,000)	High (estimated $10,000-$100,000)	Very High (estimated >$100,000)	Comments (incl. NA)
	A - PDD development (please give a general estimation here and if possible/applicable detail as much as possible the sections below)						
	Carbon credits property rights						
	Authorities' approval						
	Carbon pools selection						
	Sources of GHGs emissions identification						
	Project region (zone) definition						
	Additionality						
	Ex ante net anthropogenic GHG emission reductions or stock enhancement						
	Permanence						
	Long-term viability of benefits						
	Fair Income distribution						
	Management transparency						
	B - GHG quantification and remote sensing (please give a general estimation here and if possible/applicable detail as much as possible the sections below)						
	Analysis of historical land-use and land-cover change in the project region						

	Analysis of agents, drivers, and underlying causes of deforestation and degradation						
	Projection of future deforestation and degradation						
	Definition of the land-use and land-cover change inside project area without project						
	Estimation of baseline carbon stock changes						
	Leakage						
	C - Monitoring (please give a general estimation here and if possible/applicable detail as much as possible the sections below)						
	Of baseline scenario						
	Of project activities						
	Of project leakage						
	D - Additional costs (please give a general estimation here and if possible/applicable detail as much as possible the sections below)						
	Climate change adaptation capacity						
	Marketing of carbon credits						

8	**Can you share a picture of the project to be included in the final document produced?**	**Mark with X**
	Yes (please attach)	
	No	

Annex B: Literature used

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Note: all the Project Documents reviewed in this study for the CCB, CFS, and VCS can be accessed respectively at http://www.climate-standards.org/projects/index.html, http://www.carbonfix.info/Project.html, and http://www.vcsprojectdatabase.org/. All the FSC public summaries reviewed can be accessed at http://info.fsc.org/.

Field perspective comparison of forest carbon and forest management standards

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