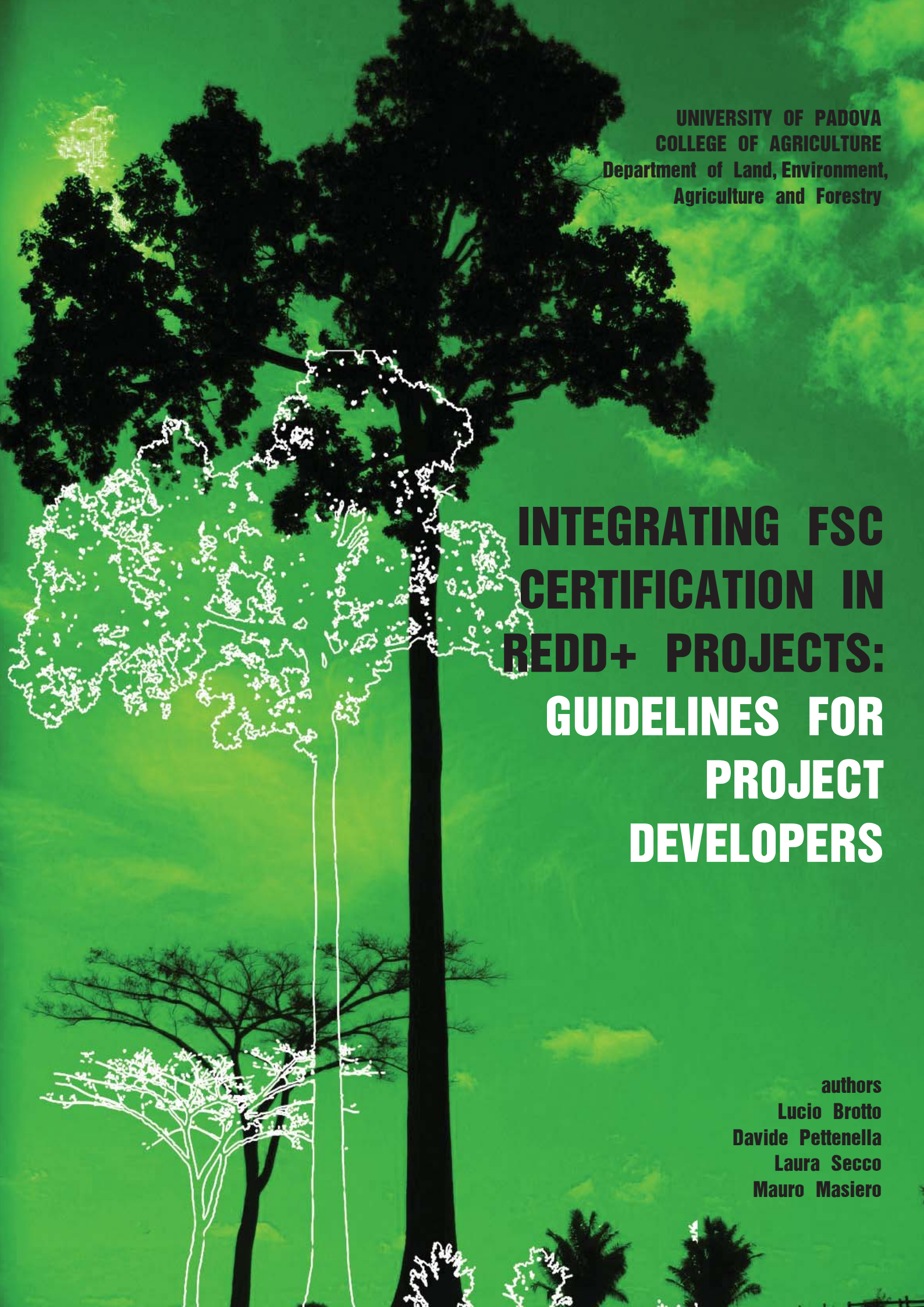

UNIVERSITY OF PADOVA
COLLEGE OF AGRICULTURE
Department of Land, Environment,
Agriculture and Forestry

INTEGRATING FSC CERTIFICATION IN REDD+ PROJECTS: GUIDELINES FOR PROJECT DEVELOPERS

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Abbreviations and acronyms

ACR	American Carbon Registry
CAR	Climate Action Reserve
CCB	Climate, Community and Biodiversity Standards
CCX	Chicago Climate Exchange
CDM	Clean Development Mechanism
CIFOR	Center for International Forestry Research
COP	Conference of the Parties
FCPF	Forest Carbon Partnership Facility of the World Bank
FCWG	Forest Carbon Working Group of FSC
FSC	Forest Stewardship Council
FSC FM/CoC	Forest Stewardship Council Joint Forest Management / Chain of Custody Certification
GFTN	Global Forest Trade Network
GHGs	Greenhouse Gases
GOLD-GOFC	Global Observation of Forest and Land Cover Dynamics
IFM	Improved Forest Management
NGOs	Non Governmental Organizations
OTC	Over-the-Counter
PDD	Project Design Document
KP	Kyoto Protocol
P&C	Principles and Criteria
PIN	Project Idea Note/ Project Concept Note
REALU	Reducing Emissions from Any Land Use
RED	Reducing Emissions from Deforestation
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	Reducing Emissions from Deforestation and forest Degradation
REDD+	REDD+ Social & Environmental Standards (*when mentioned in the standards section)*
REDD++	Reducing Emissions from Any Land Use (REALU)
RIL	Reduced Impact Logging

SLIMFs	Small and Low Intensity Managed Forests
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VCS	Voluntary Carbon Standard
WB	World Bank
Y	Years

What is the guideline about?

This guideline consists of a set of concepts, guidelines and procedures useful for integrating the Forest Stewardship Council (FSC) Forest Management certification into the organization of REDD+ projects. This guideline is particularly targeted at the voluntary carbon market, but also provides useful advice for the regulated one. Because in the voluntary carbon market projects are seeking certification under one or more of the voluntary carbon standards, this guideline will focus on the interaction between FSC and these standards.

The guideline is divided into three main sections:

- Section 1: provides background information on REDD+ projects and illustrates the scope and target readership of this guidelinel and gives an overview of the FSC historical role in the forest-based carbon market;
- Section 2: outlines the timeline of a REDD+ project comparing it with that of an FSC FM/CoC (Forest Management/Chain of Custody) certification. Categories of actors involved in a REDD+ project and the FSC counterpart are also analyzed;
- Section 3: provides understanding, identification and management tools to overcome the constraints encountered in the organization of REDD+ projects.

In addition, an MS Excel spreadsheet “Guideline FSC-REDD+” is provided, reporting tools that facilitate the organization of a REDD+ project.

What is the guideline for?

This guideline has an operational approach and is designed to facilitate the organization of projects aimed at Reducing the Emissions from Deforestation and Forest Degradation (REDD+) where the forest management area is already certified under the FSC standards or obtaining an FSC certification is planned. In addition this guideline helps the project developer to deliver carbon credits that are real, measurable and conservatively estimated, verified, permanent, intentional and additional, unique, equitable and characterized by rigorous, transparent monetary transactions.

Who is the guideline for?

The main target readership are developers of REDD+ projects that take place in FSC certified forest areas or areas where the FSC forest management certification is underway or planned. In addition this guideline will contribute to the international debate concerning the role of FSC forest management certification in REDD+ projects, hence it is also targeting the recently established FSC Forest Carbon Working Group and more in general the International Scientific Community

Where is the guideline applicable?

This guideline is designed for forest areas located in tropical or sub-tropical countries. REDD+ project developers have to be aware of the credibility and respect gained by FSC forest certification over the years, so they must avoid circumstances where the rights of indigenous, local and native populations are threatened by a REDD+ project.

What is the Forest Stewardship Council?

The Forest Stewardship Council (FSC) is a not-for-profit, independent, non-governmental organization based in Bonn, Germany[1]. FSC was established in 1993 to support the economically viable, environmentally appropriate and socially beneficial management of forests. As of today FSC is present in more than 50 countries worldwide and its main scope is to develop and deliver standards for responsible management at international, national and provincial level. In addition FSC promotes forest products bearing the FSC label through promotion campaigns, training and information.

[1] www.fsc.org

SECTION 1

INTRODUCTION: REDD+ and FSC

1.1 Understanding REDD+

Forest degradation and deforestation mainly occur in the tropics and account for at least 15% of the global anthropogenic emissions of greenhouse gases[2]. REDD+ projects (Box 1), as defined at the 14th Conference of the Parties (COP-14) of the United Nations Framework Convention on Climate Change (UNFCCC), are considered a priority intervention to reduce forestry-based carbon emissions.

Two major carbon market segments provide funding and developing rules for REDD+ project implementation: the regulated (compliance) market and the voluntary market. The first one, although not yet formally approved, is supervised and coordinated by the United Nations (UN-REDD Programme) and the World Bank (Forest Carbon Partnership Facility – FCPF) and acts at national level (Fig. 1.1). The UN-REDD and WB-FCPF are financing readiness actions and pilot projects with the scope of simplifying and understanding good practices for a future legally binding REDD+ agreement under the UNFCCC. At the same time bilateral and multilateral initiatives are developing parallel to UN and World Bank work. The major initiative is the REDD+ Partnership that counts 58 Partners, 12 of whom pledged a total of 4 billion USD[3] at the Oslo Climate and Forest Conference on 27 May 2010.

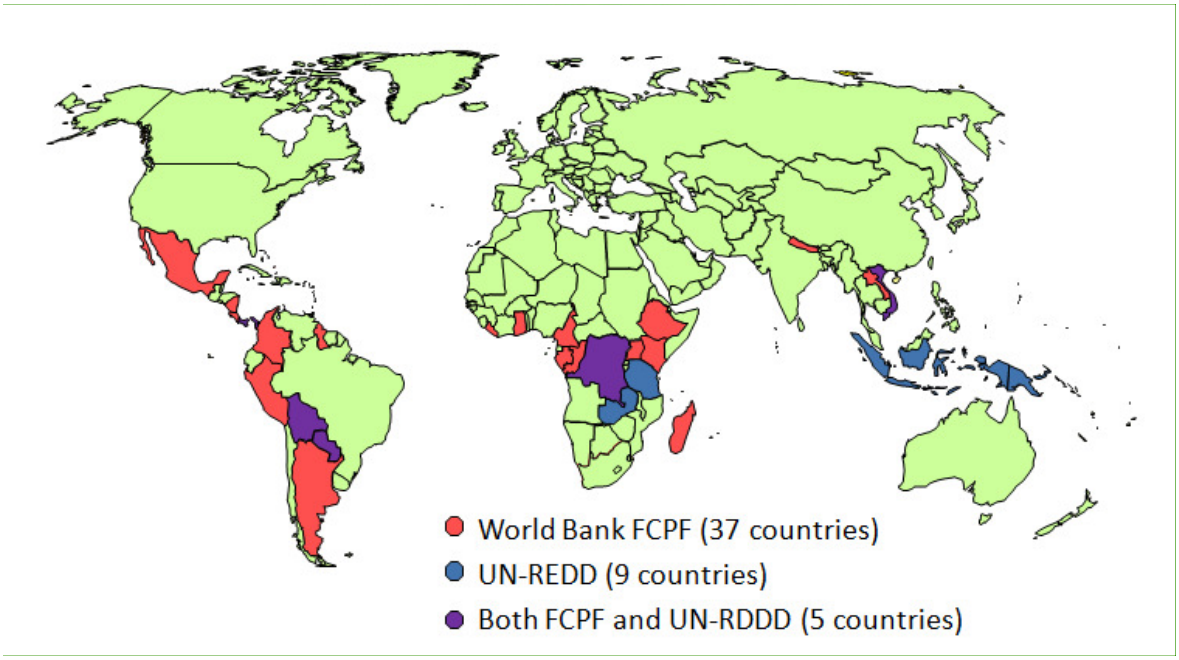
The second one, the voluntary carbon market, as suggested by the name, is driven by voluntary offsets where rules and good practices are taken from the regulated market but defined through the application of carbon standards at a single project level. The voluntary market is itself divided into two branches: the wider, non-binding "Over-the-Counter" (OTC) offset market and the Chicago Climate Exchange (CCX), a voluntary but legally binding cap-and-trade system[4]. The use of standards in the voluntary carbon market is not a compulsory requirement but rather a good practice and a way to gain project credibility. Implementing a reliable carbon standard reduces a project's risks of negative economic, social and environmental impacts and thus delivers credits with higher market price. In addition, the use of carbon standards reduces the possibilities of being criticized or boycotted by Environmental NGOs.

While in the voluntary market many REDD+ projects are already seeing the end of the pipeline, in the regulated one during the UNFCCC COP-15 held in Copenhagen in December 2009, besides the postponement of a binding decision, the REDD+ mechanism was confirmed as an essential element of a

[2] Van der Werf, G. R., Morton, D. C., DeFries, R. S., Olivier, J. G. J., Kasibhatla, P. S., Jackson, R. B.(2009). CO2 emissions from forest loss. Nature Geoscience 2, 737 - 738.
[3] http://www.oslocfc2010.no/hjem.cfm
[4] The Chicago Climate Exchange is drawing gradually to a close. At the end of 2010 the Cap and Trade is supposed to close down. Uncertainties about CCX future are connected to the unsecure approval of a Federal USA Cap and Trade.

future global binding climate change mitigation agreement[5]. In particular, despite recognizing the role of National REDD strategies, the COP-15 has left open the possibility of having National REDD strategies based also on project level interventions. The latter is called the "hybrid/nested approach"[6] and is also likely to generate funding for single project level intervention under the regulated market.

Figure 1.1 – Countries involved in the UN-REDD Programme and in the World Bank FCPF



Source: adapted from USAID-CIFOR-ICRAF (2009)[7]
Note: FCPF donors are: Australia, Finland, France, Germany, Japan, The Netherlands, Norway, Spain, Switzerland, UK and USA.

In the voluntary carbon market, responsible forest management activities are already one of the financeable set of actions under REDD+, and in the regulated market, responsible forest management is likely to be a part of the future REDD+ strategy to be agreed under the UNFCCC[8] (Box 1). In both cases, carbon credits generated by REDD+ projects have been claimed in the past as a way to finance measures of responsible forest management[9]. Hence, holding a Forest Stewardship Council (FSC) forest management certificate

[5] UNFCCC (2009). Copenhagen Accord, December 18, 2009. Available at http://unfccc.int.
[6] Pedroni, L., Dutschke, M., Streck, C., Estrada Porrua, M., (2008). Creating incentives for avoiding further deforestation: the nested approach. Climate Policy, 8.
[7] USAID-CIFOR-ICRAF (2009). Reducing Emissions from Deforestation and Forest Degradation (REDD & REDD Plus): Topic 5, Section G. Assessing the Implication of Climate Change for USAID Forestry Program. Available at: www.cifor.cgiar.org/fctoolbox/.
8 UNFCCC (2009). Draft decision -/CP.15 Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.
[9] Smith, J., & Applegate, G. (2004). Could payments for forest carbon contribute to improved tropical forest management? Forest Policy and Economics, 6(2), 153-167.

could allow forest managers to claim their responsible forest management, thus facilitating them to be rewarded under a REDD+ schemes. The question is: to what extent?

Box 1 - RED, REDD, REDD+ or REDD++? A widening definitions process

In 2003, at a side event of the 9th Conference of the Parties (COP-9) in Milan, a researchers' group supported by the Brazilian Government presented a proposal for the inclusion of *deforestation avoidance* projects in tropical countries as a mechanism of the Kyoto Protocol (KP) (Santilli *et al.*, 2003[10]). The proposal, known as "*compensated reduction*", later modified by Schlamadinger *et al.* (2005)[11] and by Santilli *et al*. (2005)[12], referred to the voluntary commitment of Developing Countries (non-Annex I of the PK) to stabilize the deforestation rate. In 2005 the proposal took the floor at the COP-11 in Montreal.

Thus far the debate had only focussed on Reducing Emissions form Deforestation (RED), but with the increasing scientific acknowledgment of the role of forest degradation, after two years a second "D" took the floor at COP-13 in Bali. In the main outcome of the conference, the Bali Action Plan, the conclusions referred to a REDD mechanism defined as *"policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries;…"*. In reality the Bali REDD definition was going far beyond continuing *"…and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries"*. In so doing, it was introducing the idea that in a REDD mechanism not only negative carbon stock variations could be limited (avoiding deforestation and degradation) but also that positive ones could be stimulated. The latter concept was endorsed at COP-14 in Poznań with the addition of a "+" evolving the official UN definition to REDD+.
This process of widening the REDD mechanism definition and the range of

[10] Santilli, M., Moutinho, P., Schwartzman S., Nepstad D., Curran L., Nobre C., (2003). Deforestation and the Kyoto Protocol: a new proposal. Paper presented at COP-9, December 2003, Milan, Italy.
[11] Schlamadinger, B., Ciccarese, L., Dutschke, M., Fearnside, P., Brown, S., Murdiyarso, D. (2005). Should we include avoidance of deforestation in the international response to climate change? in P. Mountinho & S.Schwartzman (eds.). Tropical Deforestation and Climate Change. IPAM, Istituto de Pesquisa Ambiental de Amazônia; Belém, Pará (Brazil), Environmental Defense, Washington DC (USA), 53-62.
[12] Santilli, M., Moutinho, P., Schwartzman, S., Nepstad, D., Curran, L., Nobre, C. (2005). Tropical deforestation and the Kyoto Protocol: an editorial essay. In: P. Mountinho & S. Schwartzman (eds.). Tropical Deforestation and Climate Change. IPAM, Istituto de Pesquisa Ambiental de Amazônia; Belém, Pará (Brazil), Environmental Defense, Washington DC (USA), 47-52.

financeable activities was not always appreciated by forest stakeholders. In particular environmental NGOs opposed the possible inclusion of sustainable forest management (SFM) and afforestation/reforestation within a REDD+ mechanism[13]. NGOs claim that SFM could be a degradation driver and fear that the "enhancement of forest carbon" could result in a monoculture plantation, where afforestation and reforestation replace native vegetation.

Table 1.1– Creditable activities under a REDD+ scheme

Change in:	Reduce negative change	Enhanced positive change
Forest area (number of hectares)	Avoided deforestation	Afforestation and reforestation (A/R)
Carbon density (carbon per hectare)	Avoided degradation	Forest regeneration and rehabilitation (carbon stock enhancement)

Source: Angelsen and Wertz-Kanounnikoff (2008)[14]

In addition, the propensity to embrace an ever larger share of total land-use change within a REDD definition has sometimes resulted in the use of the REDD++ terminology (or REALU – Reducing Emissions from Any Land Use), based on the idea that agro-forestry and other land uses change should also be accounted for in a REDD scheme[15]. In other cases REDD++ also refers to a REDD project where extra positive environmental goals are expected, such as the improvement of governance, land tenure and property rights[16]. Clarification is still needed on this concept.

1.2 FSC and carbon

FSC initial approach to carbon issues go back in 1999, when a Carbon Certification Workshop was organized at the FSC General Assembly in Oaxaca, Mexico. The formalization of the FSC view on climate change and the carbon market started in 2007 with the publication of the FSC Global Strategy, followed by the FSC Statement on Forests and Climate Change in mid-2008. Then, at the end of 2008, during the FSC General Assembly, Motion 43 "FSC Participation in Forest-based Carbon Offset Standards and Markets" was

[13] Greenpeace. (2009). The economics of 2°C and REDD in carbon markets. Greenpeace summary of KEA3 report: "REDD and the effort to limit global warming to 2°C: Implications for including REDD credits in the international carbon market".
[14] Angelsen, A. and Wertz-Kanounnikoff, S. (2008). What are the key design issues for REDD and the criteria for assessing options? In: Angelsen, A. (ed.) Moving ahead with REDD: issues, options and implications. CIFOR, Bogor, Indonesia.
[15] Van Bodegom, A. J., Savenije, H., & Wit, M. (2009). Forests and climate change: Adaptation and mitigation. Tropenbos International, Wageningen, The Netherlands. XVI + 160 pp.
[16] Angelsen, A. with Brockhaus, M., Kanninen, M., Sills, E., Sunderlin, W. D. and Wertz-Kanounnikoff, S. (eds.) (2009). Realising REDD+: National strategy and policy options. CIFOR, Bogor, Indonesia.

approved[17], confirming the interest of FSC in the growing forest carbon market sector. Subsequently, 2009 saw the establishment of the FSC Forest Carbon Working Group (FCWG) with the scope of researching and advising further policy developments. During its first meeting in September 2009, the FCWG identified two objectives: i) compatibility of the FSC system with forest climate projects while maintaining system integrity and ii) recognition and use of FSC certification by the voluntary and regulated forest carbon market. To pursue these objectives the FSC FCWG is preparing a strategic work plan that will result in:

- a review of the FSC standards towards an inclusion of carbon aspects;
- the promotion of FSC as a multiple-benefits certification programme for forest carbon projects; and
- the establishment of strong partnerships and collaborations in the forest carbon arena (e.g. with existing forestry carbon standards).

1.3 Why is FSC essential but not enough?

When the FSC scheme was established in 1993 the intention was to create an instrument to ensure responsible management of the world's forests and thus to allow the supply of forest (timber/non timber) products from them. Thinking about the multiple positive environmental and social effects generated by responsibly managed forests, is not surprising that the FSC certification started to be recognized also as a climate change mitigation tool. The fact that certified temperate forests were found to store more carbon than uncertified ones is merely a confirmation[18]. Moreover, these results could be easily validated for tropical forests as well since there are few doubts about the carbon emission saving capacities derived from the implementation of better forestry practices[19]. In addition, FSC certified forests have shown lower deforestation and forest degradation rate with respect to adjacent protected areas[20].

Furthermore FSC certification can be a valid investment in a REDD+ project to:

- ensure social and environmental safeguards;
- pursue forest multi-functionality and prevent forest managers focusing focussing exclusively on carbon subsidies;
- facilitate an inclusive and participative approach, to ensure all relevant stakeholders are involved;
- ensure credible, independent and accredited certification process; and

[17] http://www.fsc.org/430.html

[18] Foster, B. C., Wang, D., & Keeton, W. S. (2008). An exploratory, post-harvest comparison of ecological and economic characteristics of Forest Stewardship Council certified and uncertified northern hardwood stands. Journal of Sustainable Forestry, 26(3), 171-191.

[19] Putz, F. E., Sist, P., Fredericksen, T., & Dykstra, D. (2008). Reduced-impact logging: Challenges and opportunities. Forest ecology and management, 256 (7) : 1427-1433.

[20] Griscom, B., D. Ganz, N. Virgilio, F. Price, J. Hayward, R. Cortez, G. Dodge, J. Hurd, F. L. Lowenstein, B. Stanley (2009) The Hidden Frontier of Forest Degradation: A Review of the Science, Policy and Practice of Reducing Degradation Emissions. The Nature Conservancy, Arlington, VA. 76 pages.

- rapidly organize the project, using the natural synergy between the well-established FSC certification system and the emerging carbon certification schemes. Indeed, within a more general and prospective view, FSC experience in standard setting could be helpful in improving and revising the "normative" part of the REDD+ strategy;
- facilitate the commercialization of carbon credits through an extensive and consolidated network of more than 17 000 certified companies committed to the implementation of Corporate Social Responsibility practices and about 900 international members supporting and improving the system. In addition FSC is supported, among others, by the major environmental NGOs, such as WWF and Greenpeace, which ensures the credibility of the whole system. Lastly, the commercialization could also take advantage of the brokerage service provided by the Global Forest Trade Network (GFTN).

Nevertheless there is still the need to adjust the system to make FSC certification totally suitable for forest climate projects. In the last two years most of the actors in the carbon market have been asking for good practices and standardized methodologies to calculate the climate benefits of forest carbon projects. As of today the words "carbon" and "climate change" don't appear in any of the indicators of FSC standards and the FSC certification system is not formally accepting any carbon accounting methodology nor carbon standards. In the near future the most likely scenario is that FSC will form a partnership and collaboration with one or more of the existing forestry carbon standards, in particular in relation to the need for ensuring a credible accounting of carbon credits. Explicit and auditable requirements for logging practices aimed at reducing emissions are needed for this[21].

Finally REDD+ revenues might be important for financing FSC certification and thus for pursuing better forest management. Indeed, it is important to remember that direct and indirect forest management certification costs are surely one of the main reasons for the implementation delay of responsible forest management. In this sense becoming involved in a REDD+ project could allow a forest manager to lower the break-even point of investments in FSC certification.

[21] Griscom *et al*. (2009) *Op. cit.*

SECTION 2

PROJECT TIMELINE AND ACTORS: REDD+ and FSC COMPARISON

The organization of a REDD+ project corresponds only in part to that needed to obtain an FSC certification. In addition the design, organization and implementation of a REDD+ project involves a wider set of actors and stakeholders than the implementation of an FSC certification process. It is thus important to understand a generic REDD+ project timeline and "who does what" in the different stages. In order to do so, the next two sections include:

- Project timeline: a description of the principal REDD+ project phases, and for each phase the major steps and outputs in terms of documents and activities, followed by a comparison of the phases, outputs and activities with those required by FSC;
- Project Actors: a description of the actors involved in each REDD+ output production followed by a comparison with the FSC system.

In particular, to describe a REDD+ project timeline, this guideline takes as references the Clean Development Mechanism (CDM) project development process and the Voluntary Carbon Standard (VCS) and Climate, Community and Biodiversity Standards (CCB). The CDM structure, though not applicable to REDD+ projects, acts as a good reference in terms of quality of certification. The VCS and the CCB are two of the more robust standards for the voluntary carbon market, both based on a complete set of rules and procedures to ensure the delivery of carbon credits that are real, verified, permanent, additional and unique. In addition VCS and CCB have the largest market share in the voluntary OTC market, so FSC is very likely to interact with them;

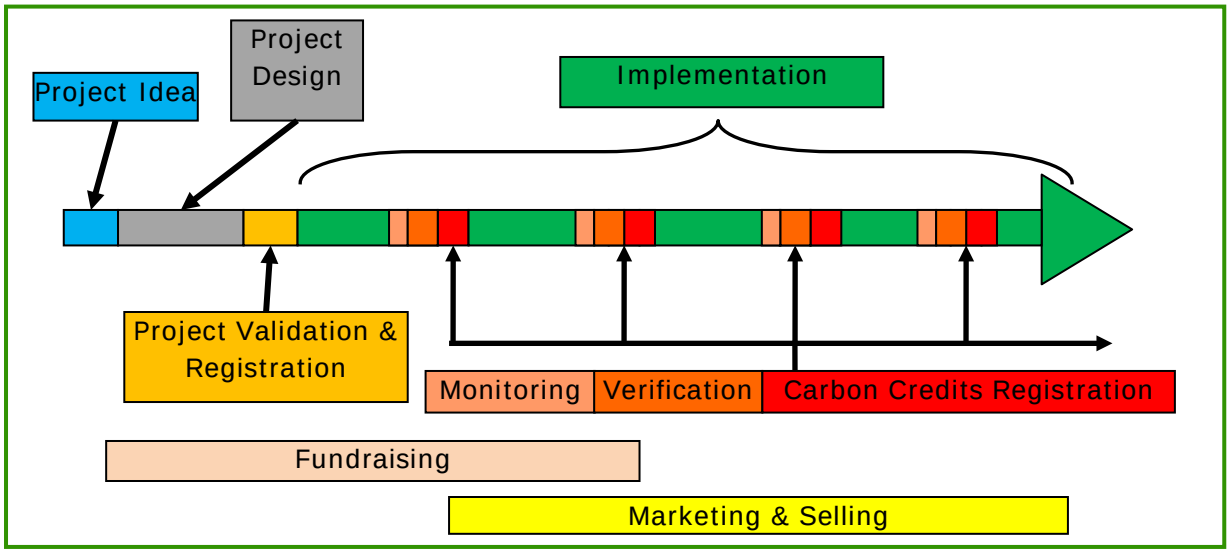
2.1 Project timeline

To generalize, a REDD+ project can be divided into seven major phases (Fig. 2.1):

- Project Idea;
- Project Design;
- Project Validation and Registration;
- Implementation;
- Monitoring;
- Verification;
- Carbon Credits Registration.

Two other major activities, fundraising and marketing & selling, have a long-lasting importance throughout the REDD+ project lifespan. A phase could happen only once during the project life (e.g. Project Design), or might be periodically repeated (e.g. Verification) or even last for most of the project life (e.g. Implementation).

Figure 2.1 - Major phases of a REDD+ Project



Source: adapted from www.conservationtraining.org

Each project phase can be split into steps as reported in the MS Excel spreadsheet "Guideline FSC-REDD+", in the section "Project Timeline". If standards other than CDM, VCS and CCB are used, phases and outputs of the project could vary as reported in the section "Outputs REDD+ Standards" of the spreadsheet.

During the **Project Idea** phase, developers have to scope the project by identifying suitable site/s, project activities and standard/s to apply for, plus estimate environmental and social impacts of the project through the collection of basic background information. During this phase it is also essential to look into the legal feasibility of the project, build partnerships, and begin stakeholders' consultation and the fundraising process. At this stage the aim is to do a comprehensive feasibility study that will result, after a period of between six months and two years, in a document called Project Idea/Concept Note (PIN). Most of the voluntary carbon market standards do not ask for a PIN. The production of the PIN is useful to sum up information gathered, share it between project's actors and provide funders with a credible summary of the ongoing activities. The Project Idea phase is an open space for project modification, where project developers assess different intervention scenarios.

Once the economic, legal, environmental and social feasibility of the project has been positively assessed, the **Project Design** phase begins. This is the most time- and strengths-consuming phase for project developers and will result in the preparation of the Project Design Document (PDD). The production of the PDD is a common carbon standards requirement, despite the fact that the information contained in the PDD varies based on the standard.
The PDD details the information contained in the PIN and essential elements in this sense are background information, data and documents clarifying land and carbon credits property rights, the adopted carbon accounting and

monitoring strategy and the expected social and environmental impact. During the Project Design phase consultants are hired to provide accuracy on remote sensing, financial design, community involvement and carbon accounting. The PDD gathers evidence of the fulfilment of the carbon standard's requirements and is the reference document for both the desk and field audits carried on by a third party (independent) auditor during the project **Validation**. The validation aims at assessing the design of the project. Are the expected climate benefits calculated in a sound way? Is the project methodology correct? These are some of the questions that need to be addressed during the validation. In other words, what is assessed are not the actual benefits of the project, but the way in which they have been forecast, calculated and organized.

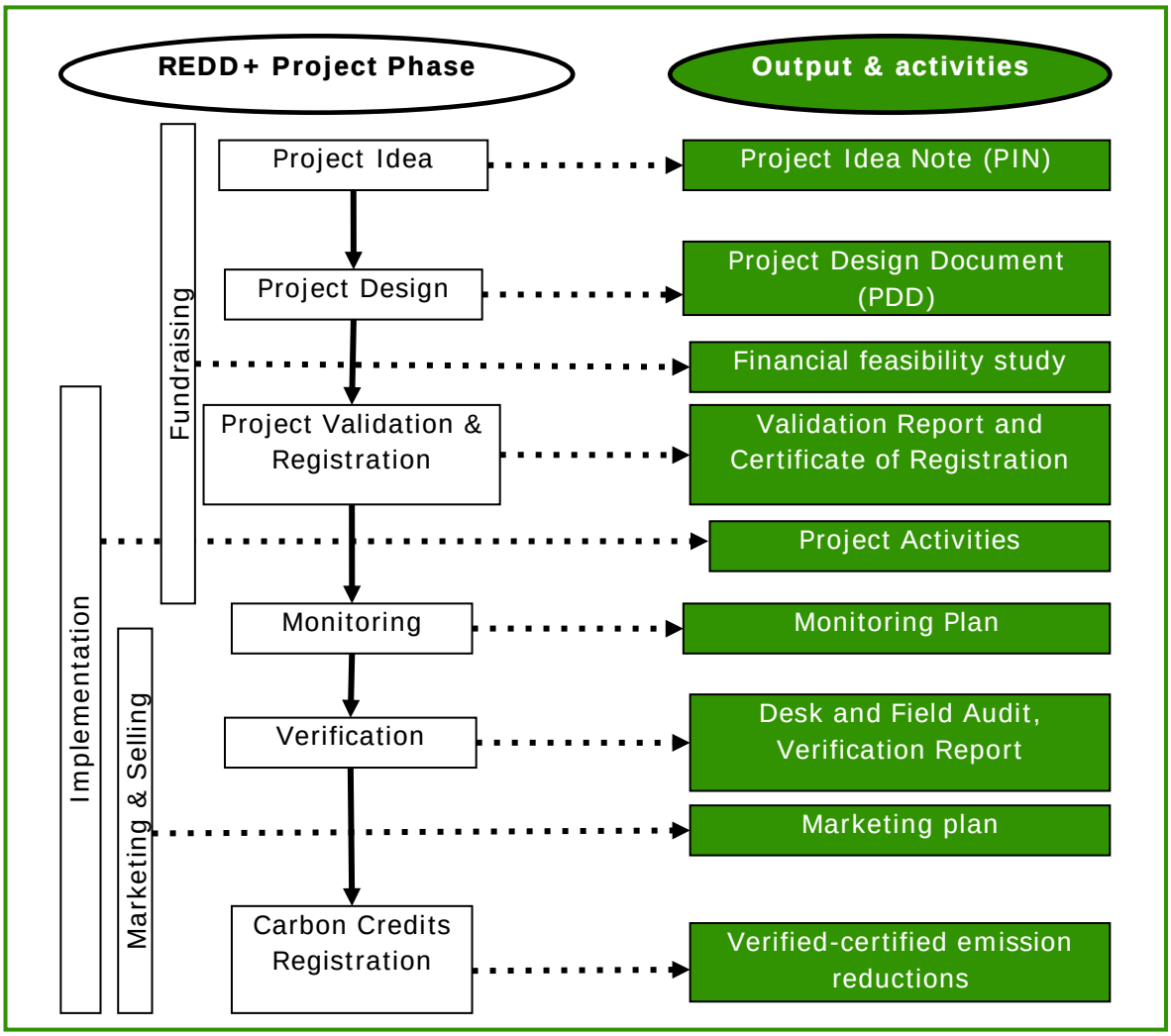
Validation occurs only once in the project life-time and, in the case of a positive result, is followed by the project **Registration** in a publicly available database, which is the first step to avoid double counting of carbon credits. If the validation leads to a negative result, the project developers will have to re-design the project and undergo a new validation process. More commonly, auditors will give project developers - before the official project validation - a time span during which they are requested to better address unresolved issues by providing new information or by re-shaping part of the project design.

Once a project responds to an internationally accepted carbon standard the potential to deliver credits on the market is higher and **Implementation** of the project activities begins. In some cases project implementation starts before the validation as a way to demonstrate project commitments. Letters of intent and contracts between project developers and landowners open the doors to the implementation of the selected activities such as the creation of alternative livelihoods for local communities, patrolling, improved forest management (IFM), etc. The results of the **Monitoring** of the expected climate, environmental, economic and social benefits of the project need to be reported periodically (every 1-5 years) during the **Verification** of the project. The verification is conducted by a third party auditor and aims at assessing the project implementation properly. The object of the verification is not just the project design but also the amount of avoided emissions or enhanced carbon stock. The carbon credits generated will thus undergo **Carbon Credits Registration** at one of the 18 available carbon registries[22], to be finally sold. **Fundraising** and **Marketing & Selling** are two essential activities to ensure the start-up and long-term economic feasibility of the REDD+ project respectively. Fundraising activities are more concentrated in the first part of the project where start-up costs are higher. Funders usually collect part of the project carbon credits as a return. Marketing and selling starts after the first carbon credits registration, though the marketing plan has already been designed during the Project Idea/Design phase.

[22] Hamilton, K., Sjardin, M., Marcello, T. & Shapiro, A. (2009). Fortifying the foundation: State of the voluntary carbon markets 2009. Available at: www.ecosystemmarketplace.com

For each of the REDD+ project phases it is possible to identify specific outputs and activities as summarized in Figure 2.2.

Figure 2.2 - Major REDD+ organization phase with corresponding outputs and activities.



Source: own elaborations.

Holding an FSC certification hastens some of the project phases reported above, as in the case of the collection of background information for the Project Design. At the same time some of these phases are not normally included within the FSC certification process.

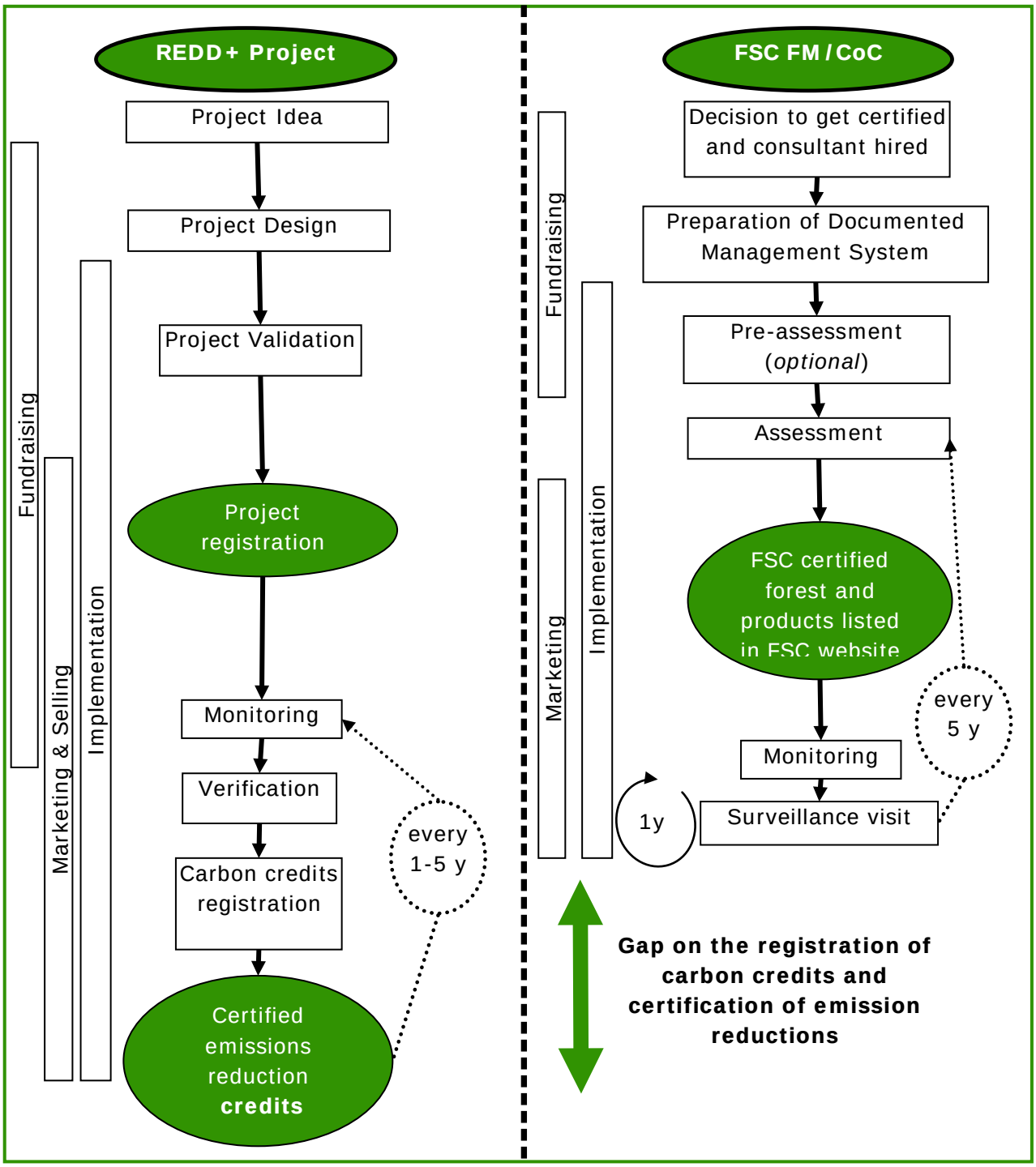
Figure 2.3 compares the FSC certification process with a REDD+ project.

Major differences between the two consist in:

- FSC does not require the project validation but only the verification (assessment) in which the forest manager has to demonstrate the management system quality is already in place;
- forest managers looking for FSC certification are not requested to fundraise for the purposes of FSC certification, even though forest management economic sustainability is one of the pillars of the certification process and national programmes may exist that facilitate or even (co)finance the process itself;

- FSC does not have a system to register and track carbon credits, although mechanisms and procedures to assure traceability of forest products proceeding from certified forests are already in place within the framework of FM/CoC and CoC certification;
- FSC system is based on an annual surveillance visit and a 5-year complete re-assessment, while the majority of carbon standards ask for a 5-year periodic verification only.

Figure 2.3 - Comparison of REDD+ Project and FSC FM/CoC (Forest Management with Chain of Custody) major organization phases.



Source: own elaborations.

2.2 Actors

Some of the actors in a REDD+ project are normally also found in an FSC certification process, while others are peculiar to the carbon market, such as those engaged in selling and commercializing carbon credits. In addition the composition of the social network could vary considerably between the voluntary and regulated carbon market, and also within the voluntary carbon market itself, between its two branches, the OTC and the CCX. Table 2.4 lists the actors in a generic REDD+ project comparing them with those involved in the FSC certification process.

Table 2.1 - List of actors involved in a REDD+ project and corresponding FSC actors.

Actors	Abbreviation	Carbon Market			FSC
		OTC	CCX	Regulated	
Land owners	LO	X	X	X	X
Project Developers	PD	X	X	X	(X)[1]
Communities living inside the forest area	CI	X	X	X	X
Communities surrounding the forest area	CS	X	X	X	X
Consultants & Services Providers	CSP	X	X	X	X
Forestry Workers	FW	X	X	X	X
Third Party Auditors	AU	X	X	X	X
Brokers	BR	X			
Registries Holders	RH	X	X	X	
Aggregators & Wholesalers	AW	X	X		
Retailers	RT	X			
Indirect External Stakeholders	STK	X	X	X	X
Members	MM		X		
National REDD offices	NO			X	
Donors & Funders	DF	X		X	(X)[2]
Final Buyers	FB	X	X	X	X

Note: [1] Forest Managers are in most cases the REDD+ project developers; [2] Donors are not business-as-usual stakeholders in the FSC certification process, even if especially in tropical countries the start up costs for the preparation of the documented management system are often covered by funds or donors.

- **Land Owners**: are the holders of the land title. Five main types of land ownership are possible[23]: i) privately owned land; ii) government own land; iii) Corporate entity/concession managed state production forests; iv) land involving collective or customary rights and v) mixed tenure. Land owners are relevant in the establishment of a solid legal framework and in shaping the financial deal. Owners will interact in the project design and development depending on their management capabilities for handling the project's complexities. For example, if a

[23] Hamilton, K., U. Chokkalingam and M. Bendana (2010). State of the Forest Carbon Markets 2009: Taking Root & Branching Out. Ecosystem MarketPlace.

native/indigenous community is the owner of the forest, it is unlikely to have the capabilities to organize the whole project. As in the FSC system, landowners could have different levels of participation in the project design, depending on their capabilities and dependency on forest income;

- **Project Developers:** they organize and coordinate the production of the PIN and PDD documentation necessary to collect funds and successfully complete the certification process. It's very common that project developers also direct sell carbon credits: in these cases marketing and finance skills are required. At the early stages of the REDD+ project, the decision-making capacity is likely to be restricted to a small number of key actors. A concentration of the decision-making capacity is functional for a faster start-up of the project. The devolution and decentralization of power will automatically become necessary as soon as technical aspects increase in importance. The forest manager of an already FSC certified forest is likely to have an important role in the project development. Project Developers can eventually also been involved in other activities as for example the involvement of local communities;
- **Communities living in the forest area:** local or indigenous[24] communities living inside the *project area*, hence directly affected by the project activities. Communities need to be informed and involved in the project management from the earliest stages. In this sense extensive studies have been carried out under the "Kyoto Think Global Act Local" project[25];
- **Consultants & Services Providers:** they provide technical and scientific assistance to Project Developers. Their presence becomes essential for the credible formulation of the PDD and to establish a reliable monitoring system. Depending on their relevance, Consultants can either be paid directly by project developers or take a share of the generated carbon credits;
- **Forestry Workers:** employed by the Project Developer or the Land Owners, they are in charge of carrying out carbon stocks estimation, fulfilment of monitoring plan, etc.;
- **Third Party Auditors:** employed by an independent certification body, they perform desk and field audits during both the project validation and verification. Most certification bodies are in the process of or already providing the possibility of combined FSC – Carbon Standard certification into one single auditing process, hence lowering transaction costs;
- **Brokers:** in the voluntary Over The Counter market (OTC) they facilitate transactions between sellers and buyers of carbon credits,

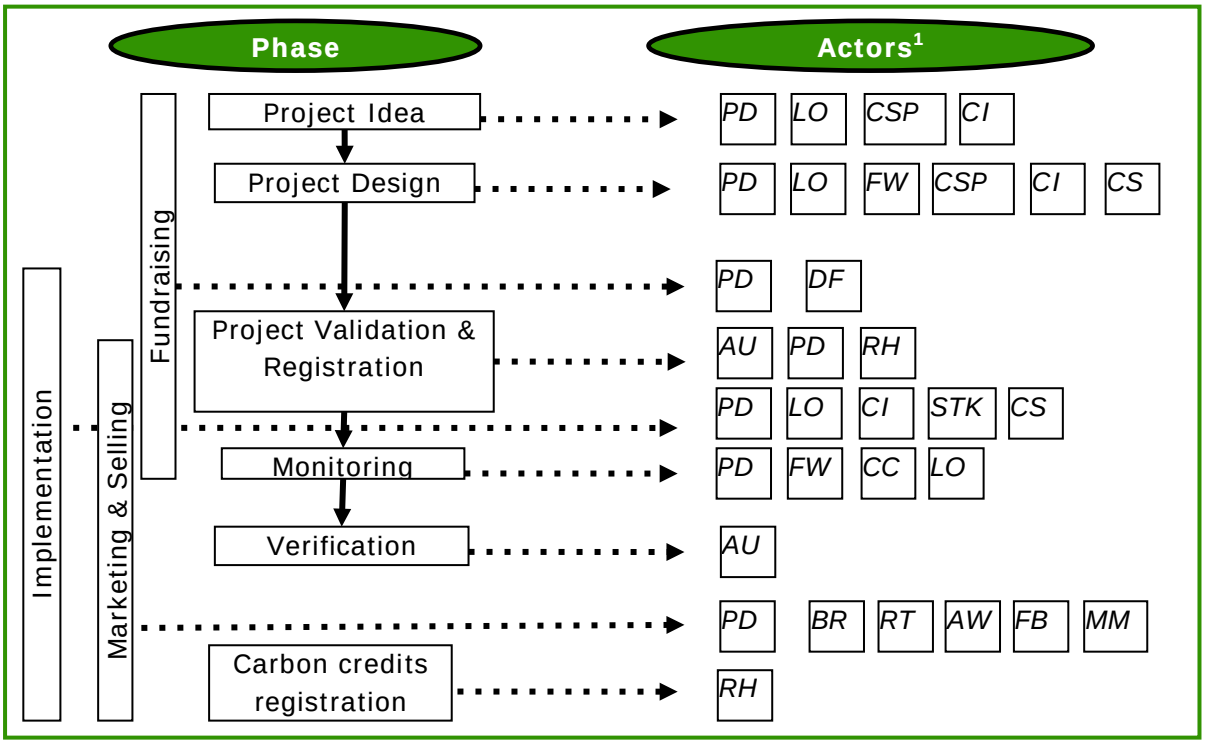
[24] For the purpose of this guideline, the indigenous definition adopted is the working definition given by the UN Working Group on Indigenous Peoples reported in the definitions section.
[25] www.communitycarbonforestry.org

without owning the credits themselves. The support of brokers is necessary in cases where the project developer lacks marketing skills;

- **Registries Holders:** they charge for tracking the movement of sold carbon credits, hence avoiding double counting. The use of registries is specified by the selected carbon standards and the cost is a fixed amount per registered carbon ton;
- **Aggregators/Wholesalers:** they are collectors of credits coming from different projects, usually too small to get to the market by themselves. They own a project portfolio and deliver carbon credits to final costumers or retailers;
- **Retailers:** in the OTC they sell, mostly online, small packages of credits to final buyers. They own a project portfolio;
- **Indirect External Stakeholder**: whomsoever is affected by the REDD+ project activities in the *project area*, *project region* or at international level;
- **Members:** in the CCX they are organizations that are voluntarily committed to binding GHGs reduction targets and are allowed to offset their emissions;
- **National REDD Office:** it provides day-to-day management of the Joint REDD Programme under the Regulated Market, coordinates national REDD activities, ensures whole-of-government responses and integrates REDD into national development planning;
- **Donors and Funders:** they provide start-up funds and usually own a share of the project;
- **Final Buyers:** they purchase carbon credits for retirement (without re-selling them) and thus use the credits to compensate emissions.

Figure 2.4 illustrates the major actors involved in each of the REDD+ project phases.

Figure 2.4 – Actors involved in the major REDD+ organization phases.



Note: [1] AU = Third Party Auditors; AW = Aggregators & Wholesalers; BR = Brokers; CI = Communities living in the forest area; CS= Communities surrounding the forest area; CSP = Consultants and Services Providers; DF = Donors & Funders; FB = Final Buyers; FW = Forestry Workers; LO = Land Owner; MM = Members; PD = Project Developer; RH = Registries Holders; RT = Retailers; STK = Indirect External Stakeholders.
Source: Own elaboration.

SECTION 3

INTEGRATING FSC CERTIFICATION IN REDD+ PROJECTS

As previously mentioned (Section 1.5), FSC certification requirements, hence the documentation needed to obtain an FSC certificate, only partially correspond to the documents necessary to shape a credible and transparent REDD+ project. This means the project developer is required to provide additional evidence to that usually required for FSC certification, to integrate FSC with forest carbon standards.

This section is devoted to the organizational obstacles unresolved by FSC certification in the prospect of future possible combined FSC – Standards for Voluntary Carbon Market certification. Three steps are presented:

- **STEP 1** – **understanding** obstacles unresolved by FSC;
- **STEP 2 -** specific **identification** of obstacles through the MS Excel spreadsheet "Guideline FSC-REDD+" base on the carbon standard to combine with FSC;
- **STEP 3 - management** of obstacles unresolved by FSC.

Step 1: UNDERSTANDING ORGANIZATIONAL BOTTLENECKS

None of the existing forestry carbon standards is a comprehensive standard system[26]. Hence, the complete list of obstacles encountered by a project developer is defined through a review of the forestry carbon scientific literature, carbon estimation methodologies, consultation of FSC/REDD+ specialists and the analysis of case studies and voluntary carbon market standards (Tab. 3.1).

Obstacles can be grouped into four sections:

1- to guarantee the legal framework of the project;
2- to generate credible carbon accounting;
3- to ensure positive environmental[27], biodiversity and social impacts;
4- to provide the long-term financial stability of the project.

In the following pages each section is separately described in detail.
The extent to which each single problem is covered by FSC is provided in table 3.1, based on the following scoring system:

- score "1": issue fully covered by FSC;
- score "0.5": issue partially covered by FSC;
- score "0": issue not covered by FSC at all.

An issue is scored "fully covered by FSC" or "partially covered by FSC" when at least one of the following two options are satisfied:

- the FSC standard specifically (or in part) requires the issue to be addressed; or
- data collected to obtain the FSC certification can be used, with prior elaboration, to fully address (or in part) the issue.

If an issue is scored "fully covered by FSC" or "partially covered by FSC" the FSC Principles and Criteria (P&C)[28] fulfilling or partially fulfilling the issue are reported in table 3.1.
Explanations and definitions to understand and manage critical points are provided in this guideline only for those issues not covered by FSC (score = 0) or partially covered by FSC (score = 0.5).

[26] WWF (2008). Green Carbon Guidebook.WWF International.
[27] For environmental impacts are intended the impacts on the water resources and soil.
[28] Version 4.0 of the 'FSC Principles & Criteria' (FSC-STD-01-001 Version 4-0 EN)is used.

Table 3.1 - List of obstacles encountered by project developer in dealing with standards applicable to REDD+ projects.

Module	Critical points		FSC	FSC P&C
1 - Legal Framework	a) Project area definition		1	2.1, 7.1,
	b) Land tenure/ownership		1	2.1, 2.2, 3.1, 3.2, 7.1 b-h
	c) Land tenure disputes		1	2.3, 4.5
	d) Norm mapping at local, national and international level		1	1.1, 4.2
	e) Law compliance at local, national and international level		1	1.2, 1.3, 1.4, 4.2
	f) Carbon credits property rights		0	-
	g) Authorities approval		0	-
2 - Credible carbon accounting	a) Baseline scenario	i. Carbon pools selection	0	-
		ii. Sources of GHG emissions identification	0	-
		iii. Project region definition	0	-
		iv. Analysis of historical land-use and land-cover change in the project region	0,5	7.1 b
		v. Analysis of agents, drivers and underlying causes of def. and deg.	0	-
		vi. Projection of future def. and deg.	0	-
		vii. Definition of land-use and land-cover change inside *project area* without project	0.5	7.1 b
		viii. Estimation of baseline carbon stock changes	0.5	7.1, 5.6, 6.1
	b) Additionality		0	-
	c) Leakage	i. Project area leakage calculation	0	-
		ii. Project region leakage calculation	0	-
	d) Ex ante net anthropogenic GHG emission reductions or stock enhancement		0.5	7.1
	e) Permanence		0.5	1.6, 2.1, 4, 7, 10.7, 1.5
	f) Monitoring	i. of baseline scenario	0	-

Module	Critical points		FSC	FSC P&C
		ii. of project activities carbon benefits	0.5	8.2
		iii. of project area leakage	0.5	8.2
		iv. of project region leakage	0	-
3 -Environmental biodiversity and social impacts	a) Environmental and biodiversity baseline description		1	7.1 b-f-g-h, 6.4, 9.1, 9.2
	b) Environmental and biodiversity impacts		1	6, 7.1 f, 9.3, 6.6, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7
	c) Environmental and biodiversity impacts monitoring		1	8.2 c-d, 8.1, 9.4, 10.8
	d) Social baseline description		1	7.1 b, 3, 4.1, 9.1
	e) Social impacts		1	4.4, 3.4, 4.5, 9.3, 10.3
	f) Social impacts monitoring		1	8.2 d, 9.4, 10.8
	g) Stakeholder consultation, grievance mechanism and transparency		1	4.4, 4.5, 9.2, 7.4, 8.5, 9.3
	h) Identification and monitoring of High Conservation Value Areas		1	9
	i) Climate change adaptation capacity		0.5	7.2, 8
	j) Long-term viability of benefits		0.5	1.6, 2.1, 4, 7, 10.7, 1.5
4 - Financial stability	a) Fair income distribution		0.5	4.1, 4.5, 3.3
	b) Financial health of organization		1	5.1, 8.2 e
	c) Transaction cost lowering capacity		1	-[1]
	d) Financial viability		1	5, 8.2 e, 10.3
	e) Enhancement of project region economy		1	4.1
	f) Management transparency		0.5	7.4, 8.5, 9.3

Note: [1] FSC standards for Group Certification (FSC-STD-30-005 V1-0 EN) and Small and Low Intensity Managed Forests (FSC STD 01 003 V1 0 EN) aims at lowering the transaction costs involved in the forest certification process.

3.1 To guarantee legal framework

Table 3.2 reports the critical elements that need to be addressed in order to guarantee the legal framework (Module 1) of a REDD+ project.

Table 3.2 - Critical organizational points in guaranteeing the legal framework for REDD+ project and corresponding FSC covering capacity.

Module	Critical points	FSC
1 - Legal Framework	a) Project area definition	1
	b) Land tenure/ownership	1
	c) Land tenure disputes	1
	d) Norm mapping at local, national and international level	1
	e) Law compliance at local, national and international level	1
	f) Carbon credits property rights	0
	g) Authorities approval	0

- ***Critical point 1f):*** **Carbon credits property rights**

Beyond the basic legal requirements for land titling, a REDD+ project usually involves the allocation of carbon rights. Carbon rights can be described as "*the right to exploit the climate benefits of an activity, that is, its emission reduction or sequestration potential*"[29].

The allocation of carbon rights is essential if:

- the REDD+ project is designed for a voluntary based offset market;
- the country allows the implementation of REDD+ projects at a sub-national scale, with subsequent crediting and trading;
- private actors are allowed to hold title over carbon credits and trade them.

An exception to the allocation of carbon rights is when the REDD+ scheme is enforced only at national scale. Anyway in this situation the State has usually designed a compensation scheme to reward actions towards reducing emissions from deforestation and forest degradation.

In the absence of any legislation clarifying ownership of carbon credits, the entity owning the right to the land becomes the carbon credits owner.

Disputes over both land and carbon ownership may occur among stakeholders and different forest users. The REDD+ project developer has to set up a system that can solve these disputes.

- ***Critical point 1g): Authorities approval***

The approval of the REDD+ project by local, regional or national authorities is essential to ensure the compliance with the state or regional regulations and to implement the participation of state authorities in the project design.

[29] Angelsen, A. with Brockhaus, M., Kanninen, M., Sills, E., Sunderlin, W. D. and Wertz-Kanounnikoff, S. (eds.) (2009). Realising REDD+: National strategy and policy options. CIFOR, Bogor, Indonesia.

In addition, many developing countries have begun the development of National REDD Strategies and pilot projects assisted by the UN-REDD Programme and The Forest Carbon Partnership Facilities. The two international initiatives are leading to the preparation of a National Programme and Readiness Preparation Proposal, with the idea of establishing clear work plans for the creation of national based monitoring, reporting and verification systems for forest degradation and deforestation. This doesn't undermine the possibility of implementing project based/sub-national actions to reduce forest degradation and deforestation but requires coordination, mutual understanding and in some cases formal agreements between private and public bodies.

3.2 To generate credible carbon accounting

In a traditional forestry project the element to be commercialized is usually a forest product (e.g. timber) or, if the forest management is aiming at a multifunctional production, a mix of products. In a forest carbon project, a new forest service (the climate change mitigation capacity) has to be taken into account and its management has to be properly considered as a management objective in the forest management plan.

Carbon accounting can be defined as the process of measuring, reporting and verifying the amount of CO_2 that is sequestered or unreleased into the atmosphere, through the implementation of specific forest management activities. The climate change mitigation capacity of a forest is expressed in carbon trade units, the carbon credit, corresponding to 1 ton of CO_2eq. The creation of the new commodity has to be credible, transparent and clear. In this sense four major points have to be clarified by project developers: baseline definition, additionality, permanence and leakage[30].

Carbon estimation methodologies set the conditions and procedures necessary to address baseline, additionality, permanence, leakage and to produce a credible estimation of the climate benefits derived from implementation of a project's activities. A carbon methodology is based on internationally recognized scientific findings and can either be developed by the project developer or selected among the existing carbon methodologies, depending on the carbon standard requirements. In any case a methodology has to be approved by the standard setting committee. To date the majority of carbon standards accept both the Clean Development Mechanism (CDM) methodologies[31] and Voluntary Carbon Standard (VCS) methodologies[32]. Only the latter uses methodologies that could interact with FSC.

[30] GOFC-GOLD (2009) Reducing greenhouse gas emissions from deforestation and degradation in developing countries: a sourcebook of methods and procedures for monitoring, measuring and reporting, GOFC-GOLD Report version COP14-2. GOFC-GOLD Project Office, Natural Resources Canada, Alberta, Canada.
[31] http://cdm.unfccc.int/methodologies/index.html

The project scope determines the selection/creation of the VCS methodology. Some VCS methodologies under approval are partially compatible with FSC scope and can address the climate benefits of FSC certification in a REDD+ framework (Tab. 3.3).

To be fully compatible with FSC certification, a methodology needs to address both the carbon benefits from the reduced degradation due to better and improved forest management practices (IFM) and the reduced deforestation rate due to development of local economies based on responsible forest management.

[32] The VCS system requires a long lasting double approval process for each proposed methodology. For approved see: http://www.v-c-s.org/vcsmethodologies.html; for methodologies under approval see: http://www.v-c-s.org/public_comment.html.

Table 3.3 - Carbon methodologies under approval at the Voluntary Carbon Standard (VCS) and partially compatible with the use of FSC certification in REDD+ projects

Methodology name	Developer entity	Scope	Activities	Compatibility with FSC scope
Improved Forest Management through Extension of Rotation Age	Ecotrust	Avoid degradation and enhance carbon stock in forests	Extension of rotation age.	High
Improved Forest Management through avoidance of re-logging and rehabilitation of logged-over forest. Version 1.0	Face the Future	Avoid degradation and enhance carbon stock in forests	IFM that achieve the conversion of low-productive forest to high-productive forest through the protection and rehabilitation of logged-over, degraded forest from further logging and the adoption of silvicultural techniques (cutting of climbers and vines, liberation thinning and/or enrichment planting) increasing the density of trees.	Medium
Estimating GHG Emissions Reduction from Planned Degradation (Improved Forest Management)	Carbon Planet Limited	Avoid degradation and enhance carbon stock in forests	Logged to protected forests: cessation of selective logging activities.	Low
Improved Forest Management - Logged to Protected Forest Methodology	GreenCollar Climate Solutions	Avoid degradation	Protect unlogged tropical forests that would be logged in the absence of carbon finance. Activities resulting in the protection and preservation of unlogged, tropical forests marked for harvest. Project activities can include traditional use of forests and forest products for domestic resources that do not result in commercial forest timber harvest or forest degradation.	Low

Baseline and monitoring methodology for conservation projects that avoid planned land use conversion in peat swamp forests	Infinite Earth, Ltd.	Avoid deforestation	Prevent land use change on un-drained tropical peat swamp forests in southeast Asia only. For avoiding complete conversion of peat swamp forests to another known land use; it is not applicable for avoiding forest degradation.	Low
Methodology for Estimating Reductions of GHG Emissions from Mosaic Deforestation	World Bank, BioCarbon Fund	Avoid deforestation and enhance carbon stock in forests	Reduce mosaic deforestation and (optional) increase carbon stock enhancement of degraded and secondary forests that would be deforested in the absence of the RED project activity.	Medium
Methodology for Estimating Reductions of GHG Emissions from Frontier Deforestation	Amazonas Sustainable Foundation	Avoid deforestation and enhance carbon stock in forests	Reduce frontier deforestation and (optional) increase carbon stock enhancement of degraded and secondary forests that would be deforested in the absence of the RED project activity.	Medium
Baseline and Monitoring Methodology for Project Activities that Reduce Emissions from Deforestation on Degrading Land	Terra Global Capital, LLC	Avoid deforestation and degradation and enhance carbon stock in forests	Prevent deforestation and forest degradation caused by fuelwood collection or charcoal production, human induced forest fires, conversion of forest land to crop land or grazing land, conversion of forest land to settlements, illegal logging of timber for commercial sale and logging of timber for local and domestic use.	High

Source: own elaboration

Only the Terra Global Capital LLC methodology takes into account both the forest degradation and deforestation process, but it doesn't accept commercial timber harvesting as a project activity. As a result, no carbon methodologies that completely capture the climate benefits of an FSC certification exist so far. In this case if the project developers would like to develop their own methodology they have to refer to the "REDD Methodology Framework" of Avoided Deforestation Partners, a guidance for constructing methodologies for REDD project activities. Independently of the selected methodology, critical points of a credible carbon accounting methods are summarized in table 3.4.

Table 3.4 - Critical organizational points to generate credible carbon accounting for REDD+ project and corresponding FSC covering capacity.

Module	Issue		FSC
2 - Credible carbon accounting	a) Baseline scenario	i. Carbon pools selection	0
		ii. Sources of GHG emissions identification	0
		iii. Project region definition	0
		iv. Analysis of historical land-use and land-cover change in the project region	0.5
		v. Analysis of agents, drivers and underlying causes of def. and deg.	0
		vi. Projection of future def. and deg.	0
		vii. Definition of land-use and land-cover change inside project area without project	0.5
		viii. Estimation of baseline carbon stock changes	0.5
	b) Additionality		0
	c) Leakage	i. Project area leakage calculation	0
		ii. Project region leakage calculation	0
	d) Ex ante net anthropogenic GHG emission reductions or stock enhancement		0.5
	e) Permanence		0.5
	f) Monitoring	i. Of baseline scenario	0
		ii. Of project activities carbon benefits	0.5
		iii. Of project area leakage	0.5
		iv. Of project region leakage	0

- **Critical point 2a): *Baseline Scenario***

How would emissions from deforestation and degradation evolve without the REDD+ project activities? Answering this question means to establish a baseline scenario, in other words, a business-as-usual scenario. Defining a baseline scenario it is necessary to demonstrate that the project is generating actual environmental, social and economic benefits.

In order to do so, the project developer has to:

i. calculate what carbon pools should be taken into account between the six: aboveground biomass, dead wood, plant litter, belowground biomass and soil carbon, carbon in harvested wood products. Priority has to be given to pools that are changing considerably due to project activities and that can be cost-effectively measured. Aboveground biomass is always included. Allometric models based on aboveground biomass can be used for belowground. Each standard or methodology defines the rules to decide whether a carbon pool should be included or not based on the principle of conservativeness;
ii. identify all the relevant sources of greenhouse gases (GHG);
iii. define the project region. The project region is the spatial reference area from which the information necessary to calculate the deforestation and degradation rate to be applied inside the project area for the REDD+ project is extrapolated. It includes the project area (the area, or areas, where the project activities will be carried on) and the leakage belt (the area in which the displacement of pre-project activities from inside to outside the project area is likely to occur)[33]. The project region is defined by the project developer using transparent criteria as listed in STEP 3;
iv. analyze the historical land-use and land-cover change in the project region. For this scope reliable source of information or a set of satellite images for at least the last 10 years need to be use;
v. analyze agents, drivers and underlying causes of deforestation and forest degradation. Agents are for example farmers, loggers, immigrants, etc. The current and future evolution of the population of each agent shall be estimated for the project region and the project area. Drivers can be spatial (e.g. proximity to existing or planned settlements) or non-spatial (e.g. price of agriculture goods) and 1 to 5 key drivers need to be identify, describe and their likely future development estimate. Underlying causes of forest degradation and deforestation can be land use policies, wars, property regimes, etc. Identify 1 to 5 key underlying causes, describe them and estimate their likely future development;
vi. project future forest degradation and deforestation rate for the project region by using the data obtain so far or through reliable source of information;
vii. define the land-use and land-cover change inside the project area using the same land-use and land-cover change categories applied to the project region;
viii. estimate the baseline carbon stock changes for the project area.

The final result will be the production of a deforestation and degradation model that allows the estimation of the baseline carbon stock changes for the

[33] Pedroni, L. (2008). Methodology for estimating reductions of GHG emissions from mosaic deforestation. BioCarbon Fund. Washington, DC.

whole project region and hence applicable to the project area. The deforestation and forest degradation model estimates the percentage of annual loss of forest area and decreased carbon stock density.
If data concerning deforestation and forest degradation rates and drivers are already available for the project region and are constantly updated and comparable with those of the project area (e.g. national studies, similar projects), there is no need to produce a deforestation and degradation model for the project region.

- **Critical point 2b): *Additionality***

In order to obtain net climate benefits from a REDD+ project, the activities implemented need to be additional. This means both that the project would not be carried out without the carbon mechanism and that the emission reduction or carbon stock enhancement by the REDD+ project need to be higher than the one of the baseline scenario.
In this sense the need for additionality corresponds to answering the question: How much carbon is being sequestered as a direct result of the project activity?

In the case of REDD+ projects, additionality could be lacking when for instance the deforestation and forest degradation drivers are likely to naturally abate or decrease, for example due to state policies or decreased market demand for agricultural land.
To be additional a REDD+ project should first of all be regulatory surplus, hence not mandatory by state regulation. In addition two main tests could prove project additionality: the first one is to undertake a demonstration of the financial additionality (financial test), answering the question: would the REDD+ project have occurred without carbon payments? In this case the project developer has to demonstrate that the carbon credits are the factor making the project financially feasible.
As an alternative, or in conjunction, the project developer could adopt a second demonstration techniques called a barrier test. A barrier, or obstacle, is a factor impeding the realization of the REDD+ project. Barriers can be institutional (e.g. risk of changing government policies or lacking or unenforced land tenure system), investments-related (e.g. inaccessible private credits), technological (e.g. lack of seeds or infrastructure), related to local tradition (e.g. weak knowledge or laws), prevailing practices (e.g. project is the first of its type), ecological conditions (e.g. unfavourable weather conditions), social conditions (e.g. demographic pressure, illegal practices or lack of skilled labour) and markets, transport and storage barrier (e.g. unregulated and informal markets, remote areas, etc.).
In this case the project developer has to show that the carbon payment allowed at least one barrier to be overcome. The two strategies to demonstrate additionality are not mutually exclusive, but can rather be summed up together.

- **Critical point 2c): *Leakage***

Leakage exists when the implementation of the REDD+ project activities generates, outside the project area, an unforeseen and unintended variation of carbon stock (e.g. increased deforestation or forest degradation outside the project area). Leakage can be both positive (e.g. the implemented activities stimulate similar actions outside the project area) or negative (e.g. the implemented activities generate an increase of emissions outside the project area). Only negative leakage is considered.

In this sense, leakage is caused by the displacement of current (displacement of ongoing activities inside the project area) and future activities (displacement of activities that would have occurred inside the project area following the projection of the baseline scenario). The former take the name of *project area leakage* while the latter take the name of *project region leakage*. For example, a REDD+ that ends or lowers the present timber harvesting rate inside the project area, could cause an increased harvesting level or total displacement of the harvesting activities in adjacent forest management units (*project area leakage*). In the same way, increasing future immigration trends finding it impossible to access the project area, could generate a higher deforestation rate in the project region (*project region leakage*). In addition, a large project can also induce market effects, by altering supply and demand of goods, causing changes in price and activities elsewhere.

Leakage needs to be assessed during the project design and to be estimated to calculate the net emission reduction or increased carbon stock. Furthermore, leakage needs to be prevented during the project implementation, and if this is not possible, it has to be monitored. In this sense it is useful to establish a leakage belt, an area smaller than or equal in size to the project region where leakage is expected to occur.

To deal with leakage the following options can be endorsed:

- monitoring of project area/region leakage;
- discounting credits based on estimates of the extent of the leakage;
- redesigning interventions to minimize leakage with complementary activities, such as 'alternative livelihoods' components.

- **Critical point 2d): *Ex ante net GHG emission reductions or stock enhancement***

After the 'without project' scenario is completed, the additionality of the project activities demonstrated and the leakage of the activities calculated, there is the need to estimate the net anthropogenic GHG emission reductions and stock enhancement resulting from the implementation of project activities.

The net emission reductions and stock enhancement could be calculated as follows:

$$C_{REDD+} = C_{BASELINE} - C_{ACTUAL} - C_{LEAKAGE} \quad (1)$$

Where:

- C_{REDD+} = net anthropogenic greenhouse gas emission reduction and stock enhancement attributable to the REDD+ project activities; tons CO_2eq
- $C_{BASELINE}$ = baseline greenhouse gas emissions within the project area; tons CO_2eq
- C_{ACTUAL} = actual greenhouse gas emissions within the project area; tons CO_2eq;
- $C_{LEAKAGE}$ = leakage greenhouse gas emissions; tons CO_2eq.

- **Critical point 2e): *Permanence***

Forests are at the same time a possible carbon sink and source of emissions. In fact, as the forest grows both natural disturbances (e.g. pest and disease attacks, winds, etc.) and human induced actions (e.g. fires, changes in land use demand, etc.) could lead to a total or partial removal of the forest. Hence, ensuring permanence of climate benefits is a further cornerstone for forest carbon projects. In this sense, to ensure permanence project developers are most commonly asked to create a credits buffer by setting aside between 10 and 60% of generated carbon credits from the market, based on the risk of adverse events occurrence. The non-permanence risk of a project is calculated by assessing risk factors, such as the fire return interval in the project area or the technical capability of the project developer to successfully create sustainable livelihood alternatives for the local population. In any case project developers are asked to signed long-term commitments based on a minimum project duration that ranges from 20 to 200 years.

- **Critical point 2f): *Monitoring of the project activities***

A periodic assessment and a revision are necessary for:

i. the emissions of the baseline scenario;
ii. the carbon benefits of project activities;
iii. the project are leakage;
iv. the project region leakage.

The monitoring protocol should include the stratification of the project area; the sampling design; definitions of data and parameters to be monitored; and methods to be used and frequency of monitoring.

3.3 Ensure positive environmental, biodiversity and social impacts

Despite this not being the first priority for forest carbon projects, the generation of positive environmental, biodiversity and social benefits has been gaining attention in the climate debate. Investors and credit buyers are

demanding more than just climate benefits from REDD+ projects and are willing to pay a higher carbon credit price for them[34]. As can be detected from table 3.5, FSC standards have been correctly claimed a benchmark for ensuring positive environmental, biodiversity and social impact of the REDD+ projects. As for climate benefits of a project, the environmental, biodiversity and social impacts have to be determined for the baseline scenario, assessed for the actual project implementation and monitored.

Table 3.5 - Critical organizational points related to ensure environmental, biodiversity and social positive impact for a REDD+ project and corresponding FSC covering capacity.

Module	Issue	FSC
3 - Environmental biodiversity and social impacts	a) Environmental and biodiversity baseline description	1
	b) Environmental and biodiversity impacts	1
	c) Environmental and biodiversity impacts monitoring	1
	d) Social baseline description	1
	e) Social impacts	1
	f) Social impacts monitoring	1
	g) Stakeholder consultation, grievance mechanism and transparency	1
	h) Identification and monitoring of High Conservation Value Areas	1
	i) Climate change adaptation capacity	0.5
	j) Long-term viability of benefits	0.5

- **Critical point 3i): *Climate change adaptation capacity***

Parallel to mitigation strategies aiming at reducing emissions and enhancing carbon stock, an important scope of forest carbon projects is to shape ecosystems and societies able to adapt to the changing climate. In fact, the present and expected impacts of climate change are requiring ecosystems and societies to adapt accordingly. For example a decrease in rainfall will modify forest composition and at the same time could lead to water shortages in urban areas. The adaptation's objective is to lower the vulnerability of society and ecosystems. Adaptation is more relevant in tropical forests due to the important role they have for rural livelihood and to maintain their carbon capture potential.

The impact of climate change on tropical forests is determined by three major factors: variation in temperature and precipitation, increased frequency of extreme events and CO_2 air enrichment. Direct effects on forests are the variation of phenology, species growth rate, spread of invasive species,

[34] Neeff, T., L. Ashford, J. Calvert, C. Davey, J. Durbin, J. Ebeling (2009). The forest carbon offsetting survey 2009. Ecosecurities.

increased fire hazard and insect and pathogen outbreaks. All of these could strongly modify forest structure and composition, and REDD+ project developers have to take these changes into consideration in the project design.

- **Critical point 3j): Long-term viability of benefits**

Carbon payments are an innovative instrument for remunerating responsible forest management and their probable success is to some extent uncertain. This risk, together with the typically long-range planning horizon of forest projects requires project developers to structure forest business based on the enhancement of forest multi-functionality in order to lessen the risk of a total project failure. In other words, a REDD+ project has to promote a more solid forest management system by reducing the risk of project benefits deletion in the case of a foundering project.

3.4 Provide project financial stability

A topic which is usually of underestimated importance within carbon standards is the economic and financial viability of a REDD+ project (Table 3.6).

Table 3.6 - Critical organizational points to provide economic and financial stability of REDD+ project and corresponding FSC covering capacity.

Module	Issue	FSC
4 - Financial stability	a) Fair income distribution	0.5
	b) Financial health of organization	1
	c) Transaction cost lowering capacity	1
	d) Financial viability	1
	e) Enhancement of project region economy	1
	f) Management transparency	0.5

As previously mentioned, the process of starting up a REDD+ project is lengthy and expensive. Pre-financing of projects has therefore become a common strategy adopted by project developers. As would be expected, carbon buyers prefer to pay for credits only *ex-post*, i.e. after their actual delivery (after verification)[35]. Nevertheless, about 50% of buyers were found to be willing to accept pre-financing deals as pre-payment (*ex-ante* payments - pre-verification), ownership of a stake in the project, or purchase of call options to secure the purchase of credits at a fixed price once they are issued.

Up-front investments also require the preparation of financial models that predict income flows in different carbon market scenarios. Financial models are useful instruments to obtain start-up funds and to lower project design costs. The Climate Community and Biodiversity Alliance, together with Social Carbon Standard have developed the “REDD Project Feasibility Tool”, an MS Excel-based model that facilitates the assessment of the economic feasibility

[35] Hamilton et al. (2010) *Op. cit.*

of potential REDD projects[36]. A similar tool has been created by the World Bank Bio Carbon Fund[37].

- **Critical point 4a): *Fair income distribution***

Before a single carbon credit is sold in the market, project developers have to pass the standard validation process and in some cases, depending on standards, also the verification process. A couple of years lag should be expected from the beginning of the project design to the first credits issue. Hence, start up funds to undertake data collection and write up documents for the project design phase have to come from investors rather than final buyers. In addition, the formulation of the PDD is usually done by costly professionals and consultancy bodies. Furthermore consultants and project partners sometimes obtain parts of the project share in exchange for the service provided, thus decreasing possible debts for project developers. If not well defined, such a system can easily lead to higher transaction costs and decreasing income for project owners, forest managers and local communities. On the other hand when credits' selling begins, considerable economic benefits are expected for the project's actors.

If the important role of investors and consultants and the increased income streaming are not carefully managed, they could create social conflicts. In this sense a fair income distribution between the project's actors is necessary. Apart from the need to behave in an ethical and responsible way, a system for fair income distribution is also needed to minimize the risk of project failure due to lack of actors' satisfaction. To build long-term trust among stakeholders a good communication system is essential for sharing the project's results.

- **Critical point 4f): *Management transparency***

The transparency of project management has to involve both the financial and the transactional components of the project. Community monitoring, participatory land use planning/zoning are instruments that directly endorse transparency. In conjunction with direct empowerment of local communities, transparency is acquired through making information about carbon stocks and flows of funds publicly available.

Step 2: IDENTIFYING ORGANIZATIONAL BOTTLENECKS

Critical points faced by project developers in designing a REDD+ project could vary depending on the applied carbon standard/s. Hence the obstacles that separate FSC from each of the carbon standards vary.

[36] http://www.climate-standards.org/.
[37] wbcarbonfinance.org/docs/PINFinancialAnalysisBioCarbonFund.xls

REDD+ project standards have not been developed so far. The only REDD+ standard available in a draft version is the "*REDD+ Social & Environmental Standards*" which is only applicable to REDD programme, expected to be designed under the UNFCCC at a national level. In this guideline some of the available carbon standards applicable to REDD+ projects have been selected based on their importance in market share (Table 3.7).

Table 3.7 – Standards applicable to REDD+ project analyzed in this guideline.

Standard name	Abbreviation	Access date on-line	Website
Voluntary Carbon Standard Guidance for Agriculture, Forestry and Other Land Use Projects + Tool for AFOLU Methodological Issues + Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination	VCS	08 March 2010	www.v-c-s.org
Chicago Climate Exchange Offset Project Protocol. Forestry Carbon Sequestration Projects	CCX	08 March 2010	www.chicagoclimatex.com
The Plan Vivo Standards 2008	Plan Vivo	08 March 2010	www.planvivo.org
Climate Action Reserve. Forest Project Protocol Version 3.1. October 22, 2009	CAR	08 March 2010	www.climateactionreserve.org
American Carbon Registry. Forest Carbon Project Standard. Version 2.0. February 2010	ACR	08 March 2010	www.americancarbonregistry.org
Climate, Community & Biodiversity Project Design Standards Second Edition.	CCB	08 March 2010	www.climate-standards.org
Draft REDD+ Social & Environmental Standards Version 15 January 2010	REDD+ Soc. & Env.	08 March 2010	www.climate-standards.org/redd+/

An FSC – Carbon Standards gap analysis is provided in the MS Excel spreadsheet "Guideline FSC-REDD+" attached to this guideline, in the worksheets "Intro" and "Criteria". **Before moving to Step 3, this analysis should be performed to identify bottlenecks of FSC concerning each specific carbon standard applied.**

Step 3: MANAGING ORGANIZATIONAL BOTTLENECKS

Table 3.8 in this section provides resolution tactics useful to address the critical points identified through the MS Excel spreadsheet “Guideline FSC-REDD+”. In particular only those critical points of the worksheet highlighted in yellow - partially covered by FSC - and red - not covered by FSC - will be taken into consideration.

Table 3.8 - Resolution tactics and tools to address REDD+ issues unresolved by FSC.

Module	Issue		How to fulfil the issue?	
			Already FSC certified	Not FSC certified
1 - Guarantee legal framework	f) Carbon credits property rights		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[38].	
	g) Authorities approval		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.	
2 - Generate credible carbon accounting	a) Baseline scenario	i. Carbon pools selection	FSC already asked indirectly to account for aboveground 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 Sourcebook[39], Paragraph 2.2.5.1 "*Decisions on which carbon pools to include*".	
		ii. Sources of GHGs emissions identification	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)	
		iii. Project region definition	FSC is not asking to identify it. Project areas with larger sizes required lower multiples. Methodologies usually report	

[38] Examples of Carbon Sequestration / Storage Agreement are provided by CARE, the Richard and Rhoda Goldman Foundation, ICRAF and the Katoomba Group at the web-site: http://www.katoombagroup.org/regions/international/legal_contracts.php
[39] GOFC-GOLD (2009). *Op. cit.*

Module	Issue		How to fulfil the issue?	
			Already FSC certified	Not FSC certified
2 - Generate credible carbon accounting	a) Baseline scenario		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[40]. The project region should have similar ecological, economic and social conditions to the project area. Tables exist to determine the level of similarity[41]. In case of Controlled Wood FSC certification the project region could correspond to the district where the risk analysis is carried out.	
		iv. Analysis of historical land-use and land-cover change in the project region	FSC require only partial land-use and land-cover change analysis (P&C: 7.1 b[1]), 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.	
		v. Analysis of agents, drivers and underlying causes of def. and deg.	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".	
		vi. Projection of future def. and deg.	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	

[40] Brown, S., M. Hall, K. Andrasko, F. Ruiz, W. Marzoli, G. Guerrero, O. Masera, A. Dushku, B. De Jong, and J. Cornell, 2007b. Baselines for land-use change in the tropics: application to avoided deforestation projects. Mitigation and Adaptation Strategies for Climate Change, 12:1001-1026.
[41] Terra Global Capital LLC (2009). *Op. cit.*

Module	Issue		How to fulfil the issue?	
			Already FSC certified	**Not FSC certified**
			and those from forest degradation separate. The final result is the definition of the *Baseline Deforestation and Degradation Rates* (expressed as a %/yr).	
		vii. Definition of the land-use and land-cover change inside *project area* without project	The current land use inside the *project area* 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.	Define the likely scenario in project area without the project, using the land-use and land-cover change matrix adopted for the project region.
2 - Generate credible carbon accounting	a) Baseline scenario	viii. Estimation of baseline carbon stock changes	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 dead-wood 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.	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.
	b) Additionality		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	Additionality tests: • mandatory surplus: FSC is a voluntary certification; • additional climate benefits: reduced forest management emissions due to adoption of reduced impact

Module	Issue		How to fulfil the issue?	
			Already FSC certified	Not FSC certified
2 - Generate credible carbon accounting	b) Additionality		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.	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).
	c) Leakage	i. *Project area* leakage calculation	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	The displacement of harvesting activities has to be calculated.

Module	Issue		How to fulfil the issue?	
			Already FSC certified	Not FSC certified
2 - Generate credible carbon accounting			registered under the FSC certification.	
		ii. *Project region* leakage calculation	Relevant sources of leakage (e.g. immigration) need to be estimated.	
	d) Ex ante net anthropogenic GHG emission reductions or stock enhancement		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.	
	e) Permanence		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[42]. The VCS considers FSC certification a risk minimizing factor.	There is the need to establish a non-permanence credits buffer.
	f) Monitoring	i. of baseline scenario	Agents and drivers of deforestation and baseline rate of deforestation and degradation need to be monitored.	
		ii. of project activities carbon benefits	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.	All project activities need to be monitored.
		iii. of project area leakage	The FSC certification monitoring system (P&C: 8.2) can detect the displacement of harvesting activities.	Displacement of harvesting activities needs to be monitored.
		iv. of project	Sources of leakage identified as relevant (Module 2 c i) need to be monitored.	

[42] VCS (2008) Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination.

Module	Issue	How to fulfil the issue?	
		Already FSC certified	Not FSC certified
	region leakage		
3 - Environmental biodiversity and social impacts	i) Climate change adaptation capacity	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 and 10.8). Furthermore FSC certification asks forest managers to take into account changes of the economic, environmental and social conditions (P&C: 7.2)	A climate change adaptation strategy should be implemented.
	j) Long-term viability of benefits	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).	A strategy aiming at ensuring long-term benefits independently of project success should be established.
4 - Financial stability	a) Fair Income distribution	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	A strategy to ensure fair income distribution should be established (e.g. establishment of trust funds, benefits sharing mechanisms agreed with local communities, etc.).

Module	Issue	How to fulfil the issue?	
		Already FSC certified	Not FSC certified
		on under the "Kyoto Think Global Act Local" project"[43].	
	f) Management transparency	Through the international certificate database[44], 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[45] and communication between actors.	Build efficient communication systems and apply for a carbon registry.

NOTE: [1]Reference FSC Principles and Criteria partially fulfilling the issue.

[43] www.conservationtraining.org
[44] www. info.fsc.org
[45] E.g. www.markit.com

Terms and Definitions[46]

Auditor: an experienced and respected environmental auditing organization that conducts the validation or verification of a project.

Baseline: the sum of carbon stock changes that would occur within the boundary of the project area in the absence of the proposed REDD+ project activity.

Baseline Scenario: the expected change in carbon stock within the boundary of the project area in the absence of any project activity designed to reduce emissions from deforestation, forest degradation, or enhance carbon stocks.

Carbon Stock: the carbon density of an area times the number of hectares in the area.

Certificate: a document issued under the rules of a certification system, indicating that adequate confidence is provided that a duly identified product, process or service is in conformity with a specific standard or other normative document [ISO/IEC Guide 2:1991 paragraph 14.8 and ISO/CASCO 193 paragraph 4.5].

Chain of custody: the channel through which products are distributed from their origin in the forest to their end-use.

Customary rights: rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit.

Deforestation: the direct, human-induced and long-term (or permanent) conversion of forest land to non-forest land. It occurs when at least one of the parameter values used to define "forest land" is reduced from above the threshold for defining "forest" to below this threshold for a period of time that is longer than the period of time used to define "temporarily un-stocked". For example, if a country defines a forest as having a crown cover greater than

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[46] Definitions and terms of this guideline are taken from

- Glossary of 2006 IPCC Guidelines for National Greenhouse Gas Inventories;
- FSC Glossary of Terms, FSC-STD-01-002 (V1-0) EN;
- Pedroni, L. (2008) *Op. cit.*
- Rules for the Use of the Climate, Community & Biodiversity Standards Version June 21, 2010.

More terminology is available at the web-site http://pactworld.org/cs/redd_glossary.

30% and “temporarily un-stocked” as a maximum period of 3 years, then deforestation would not be recorded until the crown cover is reduced below 30% for at least three consecutive years. A country should develop and report criteria by which temporary removal or loss of tree cover can be distinguished from deforestation.

Forest: the land with woody vegetation consistent with the thresholds used to define “forest land” in the country where the REDD+ project will be implemented. Where the country has adopted a forest definition for the Kyoto Protocol, the minimum thresholds of the vegetation indicators (minimum area, tree crown cover and height) used for defining “forests”, as communicated by the DNA consistent with decision 11/CP.7 and 19/CP.9, should be used. Otherwise, the definition used to define “Forest Land” in the national GHG inventory should be used.

Forest degradation: the “forest land remaining forest land” but gradually losing carbon stocks as a consequence of direct human intervention (e.g. logging, fuel-wood collection, fire, grazing, etc.).

Forest Management Unit (FMU): a clearly defined forest area with mapped boundaries, managed by a single managerial body to a set of explicit objectives which are expressed in a self-contained multi-year management plan.

Forest manager: The person responsible for the operational management of the forest resource and of the enterprise, as well as the management system and structure, planning and field operations.

Indicator: a quantitative or qualitative variable that can be measured or described, and which provides a means for judging whether a forest management unit complies with the requirements of an FSC Criterion. Indicators and the associated thresholds thereby define the requirements for responsible forest management at the level of the forest management unit and are the primary basis for forest evaluation.

Indigenous people: "The existing descendants of the peoples who inhabited the present territory of a country wholly or partially at the time when persons of a different culture or ethnic origin arrived there from other parts of the world, overcame them and, by conquest, settlement, or other means reduced them to a non-dominant or colonial situation; who today live more in conformity with their particular social, economic and cultural customs and traditions than with the institutions of the country of which they now form a part, under State structure which incorporates mainly the national, social and cultural characteristics of other segments of the population which are

predominant." (Working definition adopted by the UN Working Group on Indigenous Peoples).

Land cover: the type of vegetation, rock, water etc. covering the earth's surface.

Leakage: the decrease in carbon stocks and the increase in GHG emissions attributable to the implementation of the REDD+ project activities occurring outside the boundary of the project area.

Leakage belt: the geographical area surrounding or adjacent to the project area in which displacement of pre-project activities from inside to outside the project area are likely to occur.

Long-term: the time-scale of the forest owner or manager as manifested by the objectives of the management plan, ~~the~~ rate of harvesting, and the commitment to maintain permanent forest cover. The length of time involved will vary according to the context and ecological conditions, and will be a function of how long it takes a given ecosystem to recover its natural structure and composition following harvesting or disturbance, or to produce mature or primary conditions.

Procedure: a specified way to carry out an activity or process. Procedures can be documented or not.

Project Activities: are the series of planned steps and activities by which the project developer intends to reduce deforestation and forest degradation and/or enhance forest regeneration.

Project Area: is the area or areas of land on which the project developer will undertake the project activities. No lands on which the project activity will not be undertaken can be included in the project area.

Project Design Document (PDD): the document that describes the design of a project and the ways in which it meets each of the requirements of a certain carbon standard.

Project Region: is the spatial delimitation of the analytic domain from which information about deforestation and degradation agents, drivers and rates is estimated, projected into the future and monitored. The reference region includes the project area and is defined by the project developer using transparent criteria.

Sink: any process, activity or mechanism which removes a greenhouse gas, an aerosol, or a precursor of a greenhouse gas from the atmosphere.

(UNFCCC Article 1.8) Notation in the final stages of reporting is the negative(-) sign.

SLIMF (small or low intensity managed forest): a forest management unit which meets specific FSC requirements related to size and/or intensity[47].

Source: any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere. (UNFCCC Article 1.9) Notation in the final stages of reporting is the positive (+) sign.

Stakeholder: any individual or group whose interests are affected by the way in which a forest is managed.

Tenure: socially defined agreements held by individuals or groups, recognized by legal statutes or customary practice, regarding the "bundle of rights and duties" of ownership, holding, access and/or usage of a particular land unit or the associated resources there within (such as individual trees, plant species, water, minerals, etc.).

Tropical or Sub-Tropical: areas where mean annual temperature (MAT) is above 20 °C.

Validation: the systematic, independent and documented process for the evaluation of the design of a project against the selected carbon standard/s.

Verification: the systematic, independent and documented process for the evaluation of a project's delivery of net climate, community and biodiversity benefits in accordance with the project's validated design and monitoring plan and each of the selected standard/s criteria.

[47] More information in the document: SLIMF Eligibility Criteria FSC-STD-01-003 (Version 1-0) EN

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