WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity;
- ensuring that the use of renewable natural resources is sustainable; and
- promoting the reduction of pollution and wasteful consumption.

WWF acknowledges the feedback received during the drafting of this publication from those responsible for existing carbon standards, including the Gold Standard (GS), the Climate, Community and Biodiversity (CCB) standards and the Voluntary Carbon Standard (VCS).

In addition, thanks to all those who provided input, including: Fitrian Ardiansyah, Mauro Armelin, Kim Carstensen, Soh Koon Chng, Ken Creighton, Guenola Kahlert, Shubash Lohani, Ruth Nussbaum, Christine Pendzich, Stephan Singer, Andre Toham and Martin Walter.

Edited by Jennifer Rietbergen-McCracken. Layout by Nina Narvsten. Printed by abcdruck GmbH / Heidelberg, Germany

WWF International
Avenue du Mont Blanc
CH-1196 Gland
Switzerland
www.panda.org

WWF *for a living planet*®

Green carbon

guidebook

WWF *for a living planet*®

Summary: WWF and green carbon standards

Contents

Readers are directed to sources of guidance on methodologies and procedures for certain components ('modules') of the MSF that align with WWF's policies and values. These information sources are highlighted by the symbol shown on the left.

Information provided in this guidebook is based on WWF's current thinking on standards for forest carbon offsets. As this is a fluid issue with numerous ongoing discussions and emerging initiatives, WWF will review its position regularly and adapt its Green Carbon Initiative accordingly. We are open to comments on the points raised in this guidebook as this will only contribute to the process of helping ensure premium quality forest carbon offsets.

For more information, contact Steve Ruddell at Steve.Ruddell@WWFUS.ORG

Through its Green Carbon Initiative, WWF is deeply involved in the process of developing a credible and comprehensive standard system for forest carbon projects. We are engaged in the UN Framework Convention on Climate Change negotiating process to help ensure a credible and ambitious post-2012 global climate deal. We are discussing the methodological and technical issues with specialists and key carbon market players to ensure that the guidance we provide is relevant to their needs. Finally, we are working closely with the most important existing standard systems that effectively address some of the key components of a comprehensive carbon standard system. While WWF recognizes the value of these existing systems, we find that no single existing standard covers all the necessary aspects of a comprehensive standard system for forest carbon from project design to validation, registration and ongoing monitoring.

WWF has therefore adopted a 'meta-standard' approach drawing on best practice guidance provided by these existing standards and methodologies – and working with them to help expand their coverage and sharpen the precision of their 'pass-fail' rules – toward creating a credible and comprehensive methodologies framework for forest carbon that could provide a broadly employed body of consistent guidance. In this way, our Green Carbon Initiative aims to provide a convenient synthesis of all the necessary guidance and procedures to assure offset investors and other stakeholders that forest carbon projects can address the full range of social, environmental and carbon-accounting issues to ensure high standards of environmental and social integrity.

WWF is promoting the application of a meta-standard framework (MSF) for forest carbon – i.e. a comprehensive and credible 'umbrella' framework that includes the best features of the key existing standards. At the same time, WWF is planning to work with these existing standards to reinforce and strengthen areas where guidance or structure is thin and to sharpen their requirements. We do not propose certification of projects to this framework. Rather, we encourage projects adopting this approach to seek certification under the appropriate existing standards that comprise the MSF presented here.

In this guidebook, we set out what an appropriate meta-standard framework (MSF) must encompass in terms of both technical and methodological elements and implementation procedures to guide project developers and investors. We identify those issues for which adequate guidance exists and point to where to find it. We also discuss topics for which further development is encouraged. Finally, we describe how WWF is already testing and helping to contribute to this emerging guidance through two field-based pilot forest carbon projects.

WWF has already demonstrated its commitment to ensuring rigorous standards for carbon offsets, through its major contribution to the development and operation of the Gold Standard for energy projects. WWF will continue to strongly support the Gold Standard and stands ready to work with this standard and other interested parties in the development and testing of the meta-standard approach outlined here. If the current phase of development and testing of the MSF shows promising results, WWF may later move to help create a green carbon standard consistent with WWF's corporate values and based on the same principles and criteria embodied by the MSF. If this occurs, WWF would hope to link such a standard to the Gold Standard. This entire process will need strong and broad-based participation by as many green carbon stakeholders as possible. WWF therefore invites all interested NGOs and other stakeholders to play a part in creating a credible standard system for forest carbon protection.

Introduction

Forests and climate change

Forests have a vital role to play in the fight against global warming, as the largest terrestrial store of carbon and, after coal and oil, the third-largest source of carbon emissions. It is estimated that up to 30 percent of global emissions comes from agriculture, forestry and land-use, two-thirds of this from deforestation and forest degradation, mostly in the tropics.

It is increasingly recognized that avoiding catastrophic climate change will depend on holding the average increase in global temperatures to well below two degrees Celsius – a feat that will require the global emissions of greenhouse gases to be reduced by about 80 percent below 1990 levels by 2050. Achieving cuts of such magnitude will require major reductions in all sources of greenhouse gas emissions, including those from deforestation and forest degradation.

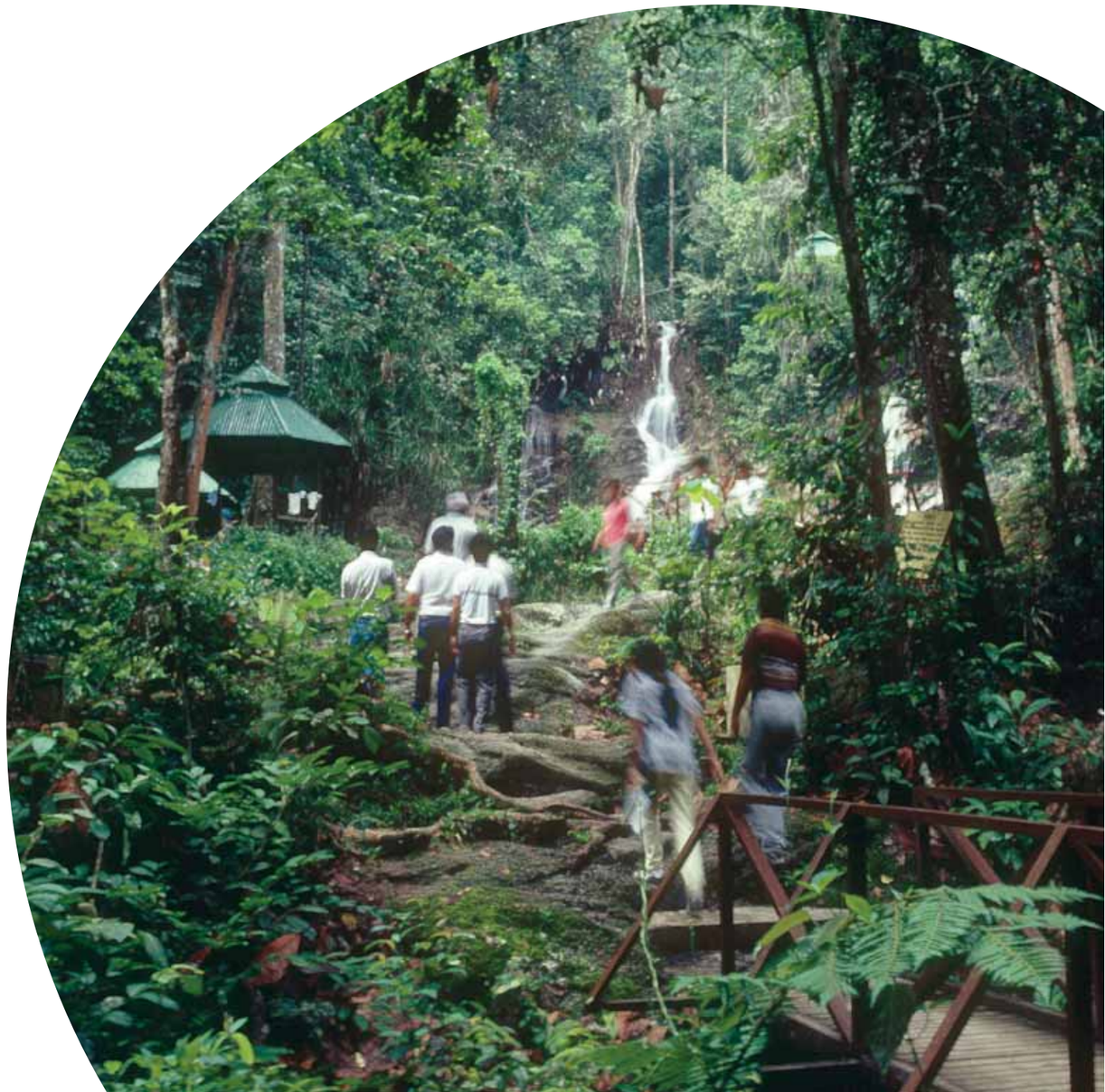
Carbon markets and forest carbon offsets

Individuals, companies or governments can pay others to absorb or avoid the release of a tonne of CO_2, in order to compensate for their own emissions. Purchasing such carbon offsets, or carbon credits, is becoming an increasingly common means for individuals, organizations and companies to reduce their carbon footprint.

The carbon offset market is split between compliance markets and voluntary markets. Compliance offset markets are regulated by mandatory carbon reduction regimes such as the Kyoto Protocol's Clean Development Mechanism (CDM) or the EU Emissions Trading Scheme. Voluntary offset markets, not associated with these mandatory regimes, offer companies and individuals the opportunity to purchase carbon offsets on a voluntary basis as a means to compensate for their greenhouse gas (GHG) emissions. While the voluntary market for carbon offsets is still small in comparison to the compliance market, it is growing at a rapid rate. The growth in the voluntary market is mostly fuelled by what is commonly referred to as carbon neutrality, i.e. organisations or individuals offsetting their emissions (from travel, production processes, etc.) through the financing of projects that result in emissions reductions elsewhere.

Within the voluntary carbon markets, there is significant interest in forest carbon projects – i.e. offset projects that aim to reduce GHG emissions through forest-related measures such as afforestation, reforestation, avoided deforestation, or sustainable forest management. There is as yet little experience of forest carbon offsets within the compliance markets since reducing emissions from deforestation and forest degradation (REDD) is not included in the first phase of the Kyoto Protocol, although there is now international consensus that the second phase of the Protocol (starting post-2012) must include mechanisms that recognise and provide incentives for REDD. The only forestry activities that are currently recognized by the Kyoto Protocol's Clean Development Mechanism (CDM) are afforestation and reforestation projects. The rules for these are complex, however, and only one project has been implemented so far. The Joint Implementation (JI) Mechanism (which relates to offsets in Annex 1 countries) does recognise additional types of forest and land-use-related activities (including agricultural carbon sequestration and forest management) but again, there has been little implementation of such projects to date.

There are a number of concerns surrounding carbon offsets in general, and forest carbon offsets in particular. Indeed forest carbon projects may be especially challenging, with potential problems including leakage (if afforestation and/or reforestation in one place triggers forest loss elsewhere), permanence (as the carbon sequestered can be released later if the forests are logged, burned or succumb to disease) and additionality (if the forest project would have happened anyway, without the carbon financing). However, mechanisms to manage these concerns are being developed, encouraging WWF to consider appropriate ways to include forest-based offsets in the carbon market.



WWF´s position on forest carbon offsets

WWF believes that forest carbon offsetting, if used appropriately, could play an important and perhaps crucial part in a global strategy to reduce carbon emissions and contribute to sustainable development – helping to catalyse the global transition to a low carbon economy whilst improving the lives of people in the developing world. Through its Green Carbon Initiative, WWF therefore aims to ensure that forest carbon projects are carried out in ways that ensure the integrity of existing forests, protect biodiversity and promote a range of other environmental and social values, including clean water, poverty alleviation and respect for the rights of indigenous peoples and other local communities.

WWF is committed to helping ensure that forest carbon projects meet high standards of environmental and social integrity consistent with the Millennium Development Goals and internationally accepted norms of corporate social and environmental responsibility. The methodological guidance outlined in this booklet and the systems referenced will be used to guide our own pilot activities for REDD and we promote them for use by others in order to have the broadest possible impact on biocarbon markets and other forest conservation and sequestration initiatives. WWF will promote the development and adoption of standards for forest carbon projects that can ensure rigorous carbon accounting practices, adherence to environmental and social safeguards, and corporate responsibility practices consistent with WWF's core policies on indigenous people's rights, benefit sharing and sustainable forest management.

At the same time, WWF recognizes the importance of reducing emissions from primary sources and views offsets (be they from forest or non-forest activities) from a purely climate mitigation perspective as a 'second-best alternative', to be employed after all reasonable efforts have been made by investors to reduce their primary emissions. To that end, we encourage purchasers of forest carbon offset credits to first demonstrate their commitment to GHG reductions from their primary emissions through economically viable investments in improved production efficiency, reduced waste, etc. before investing in offsets.

Premium quality forest carbon offsets must be real, additional, measurable, permanent, independently verified, unique, and have sustainable development benefits.

Green carbon standards: the issues

The emergence of multiple standards

In order to address the potential shortcomings of carbon offset projects and strengthen the credibility of the offset market, a number of different standards have been developed in the last five years or so. A recent report commissioned by WWF Germany compared ten different voluntary carbon offset standards (Kollmuss, A. et al. 2008. *Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards.* WWF Germany). The report's authors noted that no one standard has yet established itself as the uncontested single industry standard, and that:

> *Each standard has a slightly different focus. Some closely mirror compliance market standards, while others take a more lenient approach in order to lessen the administrative burden and enable as many credits as possible to enter the market. Certain standards are limited to particular project types…while others exclude some project types in order to focus on the social benefits of carbon projects.*

As different users need different things from a forest carbon standard, it is possible that no single industry standard will emerge. Recognizing this prospect, WWF has emphasized the need for premium quality in the offset market and endorsed the Gold Standard as the offset standard of choice for those project types to which it pertains. However, the Gold Standard does not currently certify forest projects.

The need for a comprehensive standard

As mentioned above, the individual standards currently available for carbon offset projects do not provide all the necessary features of a credible and comprehensive standard system for forest carbon projects. However, taken together in an MSF they cover most of the issues and provide most of the procedures required to assure the integrity of such projects.

We feel that promoting the development of an MSF for forest carbon projects is the most appropriate and useful approach for WWF to take at present, given the amount of practical guidance that is already available, and the confusion and competition that might occur if we were to develop yet another new 'standard' ourselves. Such an MSF would also be open to the incorporation of new guidance emerging from the UNFCCC negotiating processes. By adopting this overarching approach, we hope to encourage further development of, and eventual reconciliation or convergence among, the diverse standards currently in use.

This meta-standard approach, where existing standards are evaluated against a set of general principles, is being increasingly used by businesses and organizations to judge the performance of systems. Instead of requiring producers to get certified to the meta-standard directly, compliance can be achieved through certification to existing standards that provide a sufficient guarantee that systems are adhering to the principles of the meta-standard.

In order to address the legitimate concerns of investors and other stakeholders regarding the actual level of GHG emissions reductions achieved by forest carbon projects, the MSF would need to:

- address all the relevant issues;
- make use of the best available knowledge and experience;
- make best possible use of existing institutions and approaches in order to avoid duplication of efforts;
- be responsive to concerns from a wide range of different stakeholders; and
- be able to incorporate rapidly evolving knowledge, emerging experience from implementation of forest carbon projects and scientific progress.

What makes a good standard for carbon offset projects?

Carbon offset projects must be able to prove their integrity and sustainability if they are to make a real, credible contribution to tackling climate change. WWF considers that a comprehensive standard system for forest carbon projects would need to address all of the following issues:

Additionality: The standard must require methodologies that are able to assess the level of GHG emissions reductions generated by a carbon offset project over and above what would have occurred in the absence of the project.

Leakage: The standard must require methodologies that assess whether a carbon offset project has taken into account any increase in GHG emissions outside the project boundary as a possible result of displacement by the project. As leakage still is very difficult to judge in 'stand-alone' projects, we prefer carbon offset projects for REDD in countries where leakage is reduced by national baselines.

Permanence: The standard must require methodologies, to be tested and eventually implemented, to assess the risk that GHG reductions generated by an offset project might not be permanent – i.e. the risk of future release of the stored or sequestered carbon. This will include assessments on discounting, insurance and temporary credits. This issue is a particular concern in forest carbon projects, due to the risk of the trees succumbing to disease, fire or unsustainable logging but is commonly addressed through mechanisms such as risk pooling and 'banking' a certain percentage of credits as risk insurance.

Sustainable development: The standard must feature tools that assess the extent to which a carbon offset project is contributing towards the sustainable development of the country in which it is hosted, and adhering to rigorous social and environmental safeguards.

Stakeholder consultation: The standard must ensure that a carbon offset project has incorporated meaningful stakeholder consultation into its design to ensure that any adverse social or environmental impacts are properly identified. This is particularly important since many offset projects are undertaken in countries where environmental and social regulations are absent or weakly enforced.

Validation and certification: The standard must set strict accreditation requirements for potential validators/certifiers, to ensure that they have sufficient expertise and competencies to fulfil their tasks. In addition, the standard should separate the certification and approval procedures to avoid any conflicts of interest between the certifiers and the project developers.

Avoidance of double counting: Double counting can occur if an offset project is implemented in a country that has committed to emissions reductions under the Kyoto Protocol (called Annex 1 countries): in that case, both the purchaser of the offsets and the country where the project took place could claim the emissions reductions. The standard should therefore have clear and unambiguous registration procedures to avoid the double counting of carbon credits.

Issuance and Tracking: The standard must be the issuer of carbon credits and track them in a single registry.

WWF´s forest carbon projects

WWF has initiated two pilot forest carbon projects – one in Indonesia, one in Nepal – to test the emerging guidance from the MSF discussed here. These projects, highlighted on pages 10 and 11, will help assess the applicability of the approach and the fit between its different modules. As these projects are being implemented while the component standards are still under development, they will be able to provide valuable lessons for strengthening these standards and refining the MSF. At the same time, the existing standards described in this guidebook will help guide the project designers and strengthen their focus on the sustainable development and carbon accounting objectives.

With the project in Indonesia, WWF is developing and pilot testing a methodology for sound carbon accounting for peat swamp areas, including techniques for dealing with the problems of baseline setting, leakage and permanence, and for factoring in the amount of methane that is emitted by healthy peat bogs. Up until now, no such methodology has been proven or published, although it is well recognized that peat swamp areas are major emitters of CO_2 when damaged. Thus this pilot project in Indonesia will enable WWF to contribute a methodology that will not only add an important element to the tools currently available, but will also fill a critical gap in carbon accounting. The methodology developed will hopefully be widely applicable to carbon accounting initiatives in other peat swamp areas in the tropics.

The Nepal pilot approaches the ‘testing’ of standards from a very different angle. In this project, WWF plans to explore the effectiveness of the social and biodiversity components reflected in the MSF, as well as the feasibility of using carbon financing to incentivise forest conservation. By generating carbon finance from the restoration of riverine forests, the project aims to provide revenue streams to local communities as incentives to tolerate tigers as neighbours and to create habitat to minimize direct human-tiger encounters in the course of normal activities. The pilot project will also help demonstrate how the different elements of the MSF fit together for a comprehensive assessment of the combined benefits of enhancing livelihoods, conserving biodiversity and mitigating or curbing climate change. The hope is that all these elements will benefit similar carbon-financed conservation initiatives around the world.

Photo: WWF is committed to ensuring that forest carbon projects also promote environmental and social values. A pilot project in Indonesia is restoring peat swamp forests as natural carbon reservoirs, while providing income-generating activities such as fish farming.

Defusing a carbon bomb: restoring peat swamp forests in Indonesia

A ticking carbon bomb: that’s how the peat swamp forests of the Indonesian Province of Central Kalimantan have been described. Peat forests store on average ten times more carbon per hectare than tropical rainforests and interfering with these ecosystems can ‘set off’ large levels of carbon emissions. That is exactly what has happened in this area of Borneo. Over one million hectares of these wetlands were drained during the 1990s, as part of an attempt to establish large-scale rice production in the area. These rice projects have since failed, leaving behind an environmental disaster of enormous proportions. More than 4,000 km of drainage canals cut across the forestland, siphoning off the groundwater and allowing oxygen to penetrate to the peat layer. The result is a double whammy for climate change as large amounts of carbon are released not only by the forest fires that frequently rage across the drained forestland, but also by microbial decomposition of the oxygen-infused peat.

Degradation of the peat swamp forests is also severely impacting the livelihoods of local communities where poverty levels are already high, and threatening the survival of the endangered Borneo orangutan as a quarter of the global population of this species lives in the area.

A Deutsche Post-sponsored pilot project by WWF is seeking to help defuse this carbon bomb by rehabilitating 30,000 hectares of peat swamp forest in and around Sebangau National Park, Central Kalimantan. The three-year project, which started in 2008, is one of the first tropical wetland restoration initiatives of this scale and aims to restore the ecological function of the forests as natural carbon reservoirs, water storage areas and centres of biodiversity. It will involve the construction of dams to raise groundwater levels, reinstate the original hydrological regime and reduce the frequency of forest fires. These measures will prevent the release of significant levels of CO_2 emissions and thus help cut the climate warming contribution of these forests. The project will be complemented by other WWF activities in the area, particularly the initiation of income-generating activities for local communities including the planting of commercially exploitable indigenous trees and fish farming in the reservoirs behind the dams.

The project will also serve to test the various components of the MSF that are being developed by WWF and other NGOs to enable forest carbon offset projects to be certified as sound on environmental, socio-economic and climate change mitigation grounds.

Can the carbon market help save tigers? Testing carbon-financed restoration of tiger habitat in Nepal

The outlook for tigers is gloomy indeed. The species’ range has almost halved in the last ten years and is only seven percent of the area where tigers historically roamed. Only about 4,000 tigers remain in the wild, most in isolated pockets spread across increasingly fragmented forests stretching from India to south-eastern China and from the Russian Far East to Sumatra, Indonesia.

Not all the news is bad though. The tiger population of the Terai Arc Landscape (TAL) of southern Nepal and adjacent northern India seems to be holding out quite well, thanks to corridors of relatively intact forest that enable the tigers to move between protected areas in search of food and mates. WWF has been implementing the TAL programme for the last seven years to restore these corridors by helping local forest groups establish community forestry enterprises.

The ambitious target set for WWF’s TAL programme is to double the number of tigers to 500 individuals – a task that will be impossible unless breeding populations can be established outside of the nature reserves, in areas close to human habitations. The trouble is: tigers don’t make good neighbours. So how do we recover a potentially dangerous large carnivore that requires extensive areas for breeding in a human-dominated landscape?

The only realistic solution is to provide revenue streams to local communities as incentives to tolerate tigers and conserve small game habitat to provide prey. That’s where the community forestry initiative has made an important contribution – and where the carbon offset market might be able to take things further. A new pilot project by WWF-Nepal will test whether restoration of the riverine forests in five corridors of the TAL programme area could qualify for funds from the carbon market on the basis of their carbon sequestration potential. The pilot project will also explore how some of the funds generated by the carbon emissions trading could be used by local communities to support livelihood improvements, thereby providing an additional incentive for them to conserve the restored habitat. The potential benefits for tigers are considerable as the area’s riverine forests and adjacent grasslands can support the highest tiger densities on earth, exceeding 15 individuals per 100 km2.

As well as helping to test the elements of the MSF, this pilot project is also expected to generate useful methods for measuring and monitoring carbon sequestration, and practical governance and management mechanisms for undertaking the actual restoration, receiving carbon finance, improving community livelihoods and conserving tigers.

Developing the meta-standard framework

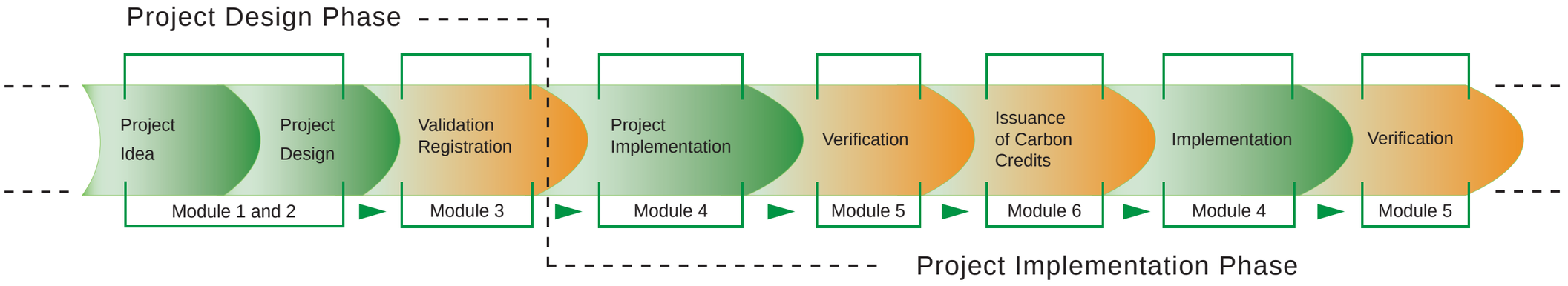
Where are we now?

The MSF is a tool to provide guidance to project designers, developers and investors in forest-based carbon projects for either the compliance or the voluntary carbon markets. Development of this MSF involves the following steps:

1. Identification of the critical elements of a fully comprehensive and credible standard system;
2. Identification of those elements that are already covered by existing standards and methodologies;
3. Identification of gaps and weaknesses in the existing standards and methodologies; and
4. Development of guidance and procedures to fill these gaps.

This guidebook summarizes the output from the first three steps in this process. WWF is currently engaged with several existing standards to try and make progress on the fourth step by expanding the scope of these standards to fill the gaps in guidance and procedures.

Figure 1.
Sequence of a forest carbon project and application points of the MSF modules.



Notes:
Green steps = those activities carried out by the project proponents.
Brown steps = those activities carried out by the surveillance and registration bodies.

What modules does the MSF need to include?

This section looks in more detail at what needs to be included in the MSF, in terms of both the issues it addresses and the procedures it puts into place. The necessary components of the MSF are split into two groups – those relating to the design phase of forest carbon projects, and those relating to the implementation of such projects. Each of these two phases will require its own set of safeguards, procedures and verifying instruments.

Figure 1 shows the steps normally involved in developing, implementing and assessing a forest carbon project, and how the six modules presented here fit within this sequence.

Module 1 = Carbon accounting
Module 2 = Social and environmental impacts
Module 3 = Validation and registration of project design
Module 4 = Social and environmental performance
Module 5 = Verification
Module 6 = Registration and issuance of carbon credits

Modules for the project design phase

Guidance and requirements for the design phase of forest carbon projects need to address three sets of factors:

- a carbon accounting system to assure accurate measurement of climate benefits;
- evaluation of social and environmental impacts to facilitate the development of positive win-win outcomes and the design of appropriate mitigation actions when needed; and
- a system to ensure independent and credible validation of the design and a sound basis for monitoring during project implementation.

Module 1. Carbon accounting

The key issues addressed in this module are:
- *additionality*
- *leakage*
- *permanence*

In order to deliver credible carbon credits, the MSF needs to require appropriate methodologies for calculating the net GHG benefits achieved by the project activities. These must include the establishment of a clear and robust baseline against which additionality of the generated GHG emissions reductions or sequestration credits can be accurately assessed. Moreover, robust methodologies must credibly account for all off-project increases of GHG emissions that can be attributed to the project activities. It is particularly necessary to address the possibility of impermanence of emissions reductions in forest projects as the stored carbon can be subsequently released when the trees die, or if they are burned or cut down. The most commonly applied procedure for addressing impermanence is through a system of 'risk pooling' and 'credit banking'.

Module 2. Social and environmental impacts

The key issues addressed in this module are:
- *stakeholder consultation, grievance mechanism and transparency*
- *identification of High Conservation Values*
- *assessment of social and environmental impacts*
- *long-term viability*
- *legal compliance*

Forest carbon projects commonly take place in environments of high ecological and social complexity. It is therefore important to pay particular attention to any adverse social or environmental impacts of these projects. The MSF needs to ensure that forest carbon projects use appropriate tools to assess these potential impacts and develop appropriate measures for avoiding or mitigating these impacts.

Meaningful stakeholder consultation can help ensure the sustainability of forest-related projects by providing valuable information on the relevant social and environmental issues, and helping to develop appropriate approaches for avoiding, mitigating or compensating for any adverse project impacts and reducing the conflicts arising from the project activities. Experience shows that the participation of interested parties can be enhanced through transparent procedures and by providing stakeholders with access to an efficient and impartial grievance mechanism.

Forest projects that include forest product harvesting inevitably impact natural habitats and may affect their capacity to deliver crucial services. Adequate planning needs to include safeguards that ensure that implementation does not destroy or damage the functioning of natural ecosystems. WWF strongly supports the application of the High Conservation Value (HCV) concept. This concept involves focusing on areas where ecosystem services can be considered of 'outstanding significance or critical importance' to maintain natural processes and species or to sustain livelihoods of local people (see the list of the six types of HCVs below).

The MSF must include a requirement that projects identify and address the HCVs during project design. REDD investments can potentially maximize 'co-benefits' for biological diversity, cultural heritage and socio-economic gains if planned to maintain and enhance HCVs.

The six types of High Conservation Value

HCV1. Globally, regionally or nationally significant concentrations of biodiversity values.
- *For example, the presence of several globally threatened bird species within a Kenyan montane forest.*

HCV2. Globally, regionally or nationally significant large landscape-level forests.
- *For example, a large tract of Mesoamerican lowland rainforest with healthy populations of jaguars, tapirs, harpy eagles and caiman as well as most smaller species.*

HCV3. Forest areas that are in or contain rare, threatened or endangered ecosystems.
- *For example, patches of a regionally rare type of freshwater swamp forest in an Australian coastal district.*

HCV4. Forest areas that provide basic services of nature in critical situations (e.g. water shed protection, erosion control).
- *For example, forest on steep slopes with avalanche risk above a town in the European Alps.*

HCV5. Forest areas fundamental to meeting the basic needs of local communities.
- *For example, key hunting or foraging areas for communities living at subsistence level in a Cambodian lowland forest mosaic.*

HCV6. Forest areas critical to local communities' traditional cultural identity.
- *For example, sacred burial grounds within a forest management area in Canada.*

The MSF will also need to address the issue of long-term viability – a particular concern for forest projects given their typically long-range planning horizons. The MSF will need to require an assessment of the extent to which forest carbon projects are addressing this issue to ensure achievement of the anticipated climate-related benefits and sustainable development objectives. This also relates to the issue of permanence (see Module 1).

Finally, within this module, the MSF will need to address legal compliance issues. Forest carbon projects generally involve a number of different actors, including the buyers and sellers of carbon benefits and the intermediaries that deal with the financial flows between these two groups. The relationships between these different parties must be based on a sound legal structure in order to avoid conflicts and to ensure that project implementation is in compliance with all legal requirements applicable in the project area.

Module 3. Validation and registration of project design

The key issues addressed in this module are:
- *validation of the anticipated emission reductions*
- *validation of the project proposal against the applicable project design standard*
- *accreditation of bodies for validation (see Module 5)*
- *registration requirements for the project design*

An MSF must include requirements for robust and credible validation mechanisms which ensure that the expected GHG emissions reductions and other benefits of forest carbon projects are realistic. In the project design phase it is the role of the validating entity to analyse the documentation provided by the project proponent. In most standard systems, third-party validation is used as a means to increase the reliability of claims. In order to avoid conflicts of interest and to increase the quality and credibility of the evaluation process, validating/verifying bodies should themselves be subject to a well defined system of accreditation. The MSF must include a requirement for such an accreditation system. Finally, the MSF must include a requirement for a transparent and robust registration mechanism, including requirements for safeguarding the work of validators.

Modules of the project implementation phase

Module 4. Social and environmental performance

The key issues addressed in this module are:
- *maintenance of High Conservation Values*
- *adherence to social and environmental performance standards*
- *legal compliance of operations*

This module emphasizes the need to ensure that the social and environmental safeguards included in the project design phase have been adhered to during implementation. All forest carbon projects must comply with a rigorous standard for social and environmental performance. While the Forest Stewardship Council's certification system provides the necessary guidance on these issues for commercial forestry operations, no similar set of performance indicators is yet available for other project types such as forest conservation or landscape-level REDD projects.

Module 5. Verification

The key issues addressed in this module are:
- *verification of achieved GHG benefits*
- *verification of the social and environmental performance*
- *accreditation of bodies for verification of GHG benefits and for verification of social and environmental performance (see Module 3)*

The MSF must include requirements for the assessment and regular verification of the amount of sequestered carbon or avoided carbon emissions. Similarly, periodic monitoring is essential to confirm whether the operations adhere to the social and environmental performance standard and the legal framework mentioned in Module 4 on previous page.

Module 6. Registration and issuance of carbon credits

The key issues addressed in this module are:
- *registration of carbon credits*
- *efficient procedures for the handling of carbon credits*

The ultimate goal of a standard system for forest carbon offset projects should be to increase the credibility of carbon emissions credits generated by such projects and to document achievement of the environmental and socio-economic co-benefits claimed, in order to support transactions between suppliers and buyers of carbon credits. The MSF must define requirements for efficient serialization procedures for all credits generated by the forest carbon projects approved. A key requirement for this process is the availability of a functional, transparent registry for issued credits with the possibilities to transfer credits between account holders and retire credits that are used to match offset claims. Clear and unambiguous procedures will need to be in place to avoid double counting of credits. The approval of credits should preferably be independent from verification in order to avoid conflicts of interest.

What elements of the MSF are already available?

This section looks at the standards and methodologies already available that can be used as 'building blocks' for the MSF. While many of the issues will be covered by using a combination of these existing standards and methodologies, there will still be a number of gaps to be filled during further development of the MSF.

The potential building blocks of the MSF are outlined below.

The methodologies developed by the ***Clean Development Mechanism (CDM)***. These include a range of methodologies and tools for assessing and monitoring afforestation or reforestation (A/R) CDM projects and demonstrating their additionality, i.e. the net GHG emission reductions achieved. The CDM also provides methodologies for approving and certifying these project activities.

The ***Voluntary Carbon Standard (VCS)***. The VCS is a global benchmark standard for project-based voluntary greenhouse gas emission reductions and removals. The VCS has been developed by The Climate Group, the International Emissions Trading Association (IETA), the World Business Council for Sustainable Development (WBCSD) and a range of business, governmental and non-governmental organizations. The VCS covers all major land-use activities including both agriculture and forestry.

The ***Climate, Community and Biodiversity (CCB) standards***. The CCB project design standards have been developed by the Climate, Community and Biodiversity Alliance, a partnership of research institutions, corporations and NGOs. These standards evaluate land-based carbon mitigation projects in the early stages of development against a set of criteria to assess the extent to which the projects are simultaneously addressing climate change, supporting local communities and conserving biodiversity. The CCB standards apply to all land-based carbon offsets (including reforestation, afforestation, reducing emissions from deforestation and forest degradation, agro-forestry and agriculture) for the voluntary or regulatory markets with no geographical restriction.

The ***Gold Standard (GS)***. The Gold Standard was initiated by WWF in conjunction with a wide range of environmental, business and governmental organizations. The Gold Standard can be applied to voluntary offset projects as well as to CDM projects (applicability to JI projects is under development). The Gold Standard is currently restricted to renewable energy and energy efficiency projects and does not apply to any land-use projects (including forestry).The development of the green carbon MSF will be closely linked to the Gold Standard to ensure complementarity between these two benchmarks.

Forest Stewardship Council (FSC) certification. The FSC was established by a diverse grouping of forest enterprises, indigenous forest communities, timber retailers and environmental NGOs (including WWF). FSC certification is one of several such systems for inspecting forest management and tracking timber and paper through a 'chain of custody' to ensure that the products have come from sustainably managed forests. The FSC certification system is currently the only one that meets all of WWF's criteria for environmental, social and economic sustainability. Although not designed for forest carbon projects per se, the FSC certification system for production forests is included here as it is the most widely applied and credible system for ensuring responsible forest management and embodies many of the key concepts and principles of relevance to the MSF.

The scope of these five 'building blocks' of the MSF are compared in Tables 1 and 2. Table 1 shows the issues that these methodologies and standards cover, set against the modules that make up the MSF. Table 2 shows the types of forest carbon projects covered by the different methodologies and standards.

Table 1: Comparison of the issues covered by each of the five 'building blocks' of the MSF

	CDM	VCS	GS	CCB	FSC
Modules for project design					
Module 1 Credible carbon accounting					
Additionality	✔	✔	✔	✔	
Leakage	✔	✔	✔	✔	
Permanence	✔	✔	✔	✔	
Module 2 Social and environmental impacts					
Assessment of social and environmental impacts			✔	✔	✔
Stakeholder consultation, grievance mechanism and transparency			✔	✔	✔
Identification of High Conservation Value Areas				(✔)	✔
Long-term viability				✔	
Legal compliance	✔		✔	✔	✔
Module 3 Validation and registration					
Validation of the anticipated emission reductions	✔	✔	✔	✔	
Validation of the project proposal against the applicable project design standard				✔	
Accreditation for validation	✔	(✔)	(✔)		
Registration requirements for project design	✔	✔	✔		
Modules for project implementation					
Module 4 Social and environmental performance					
Maintenance of High Conservation Values				(✔)	✔
Adherence to social and environmental performance standards			✔	(✔)	✔
Legal compliance			✔	(✔)	✔
Module 5 Verification					
Verification of GHG benefits	✔	(✔)	✔	✔	
Verification of social and environmental performance				(✔)	✔
Accreditation for verification bodies	✔	(✔)	✔		✔
Module 6 Registration and issuance of carbon credits					
Registration of carbon credits	✔	✔	✔		
Efficient procedures for handling of carbon credits	✔	✔	✔		

Notes:

1. ✔ = this issue is well covered by the standard in question
2. (✔) = this issue is partially covered by the standard in question
3. While the Gold Standard (GS) does cover the issues as shown in the Table, this standard does not apply to forest carbon projects.
4. While the FSC standard is applicable mainly to exisiting operations, it does provide up-front guidance on how social and environmental issues are to be addressed in preparing projects/concessions for certification.
5. The Table is based on currently available information. We apologise in advance for any omissions.

Table 2: Project types covered by each of the 'building block' methodologies and standards

	CDM	VCS	GS	CCB	FSC
Eligible project types					
Afforestation/reforestation	✔	✔		✔	✔
Improved forest management/reduced impact logging		✔		✔	✔
Forest protection		✔		✔	
REDD (Reducing Emissions from Deforestation and forest Degradation)		✔		✔	

It is clear from these Tables that most issues and project types that would need to be addressed by the MSF are covered by at least one of the 'building block' methodologies and standards. Nonetheless, there are some important gaps and areas where guidance could be strengthened. The rest of this section identifies the sources of the best guidance currently available on the different issues and the gaps that remain to be filled. WWF is working with these standards to fill the gaps and strengthen their coverage of these issues.

Guidance and gaps in addressing project design issues

Carbon accounting. Four standards cover the essential issues for credible carbon accounting methodologies. One system (the CDM standard) is applicable for afforestation and reforestation projects only and provides comprehensive guidance which is adhered to by the two other standards that incorporate rules for carbon accounting either explicitly (in the case of VCS) or by reference (in the case of the CCB). For all other forest carbon project types, including REDD, the VCS standard provides the most advanced and detailed guidance on carbon accounting while also approving CDM methodologies.

The CDM standard provides comprehensive guidance on carbon accounting for afforestation and reforestation projects (see cdm.unfccc.int/methodologies/ARmethodologies/approved_ar.html). The VCS provides the best available advice on carbon accounting for other project types (see www.v-c-s.org/docs/AFOLU%20Guidance%20Document.pdf)

Some of the methodologies used to estimate carbon sequestration or emissions reduction benefits may be considered experimental until more application experience is gained.

Assessments of social and environmental impacts. The CCB standard is the only methodological system reviewed here that provides comprehensive guidance on the assessment of social and environmental impacts that may result from forest carbon projects. While the Gold Standard provides a comprehensive and multi-step framework for assessing social and environmental impacts for projects through a bottom-up process on a project-by-project, sector-by-sector basis, it does not cover forest carbon projects.

The CCB standard system provides good guidance for project designers and developers on how to address environmental and social aspects of forest carbon project design. See www.climate-standards.org/images/pdf/CCBStandards.pdf.

While consideration of High Conservation Values is not explicit in the CCB standard, this system does provide some technical and methodological guidance to address important biological and socio-cultural aspects of project design (and implementation). WWF believes that due consideration of actions that contribute to the maintenance or enhancement of High Conservation Values is helpful for decision-making in situations where conflicts may arise between different groups of society or where there are legitimate trade-offs between the enhancements of one ecosystem function to the detriment of others.

The HCV Resource Network is an excellent source of practical advice on how to identify HCVs and plan for the maintenance or enhancement of these values. See www.hcvnetwork.org.

Validation and registration of project design. There are significant gaps in dealing with this aspect of projects. While the GS and the CCB standard are the only standards to require independent assessment of the project design for its potential social and environmental impacts, the former does not apply to forest carbon projects and the latter has not yet established a certification/accreditation procedure for the certification entities. Those standards, such as the CDM methodologies and VCS procedures, which focus on carbon accounting do not include a specific component for measuring social and environmental impacts, and therefore do not provide certification and accreditation procedures for these issues. (Although the CDM does "require" projects to contribute to "sustainable development" as defined by the host country, there is little guidance on how this could be measured or evaluated). For A/R projects, the CDM provides a complete set of analytical tools to validate GHG benefits and to control these validations through accreditation procedures. Other forest carbon project types which are eligible under the VCS must undergo independent validation for compliance with this standard.

Conclusions and next steps

Guidance and gaps in addressing project implementation issues

Social and environmental performance. The Gold Standard requires verification of social and environmental performance as set out in the monitoring plan, and issuance of credits can be delayed in case there is need for corrective action; however these processes have not been designed for forest carbon projects. The CCB standard requires verification of social and environmental performance at most five years after validation; however the guidelines for this verification are still under development. Standards on social and environmental performance are available from the FSC system, which has built up long-standing experience in the evaluation of forest management performance. However, FSC certification is applicable only for operations which include forest harvesting in one form or another. For other project types, such as forest protection or REDD, no such standards are available.

The FSC system provides the best available guidance on procedures and requirements for assessing and certifying the social and environmental performance of commercial forest operations. See www.fsc.org.

Verification. The same applies here. For the verification of social and environmental performance, the Gold Standard and the FSC certification and accreditation procedures could be used as the basis for a credible surveillance mechanism for all forest carbon projects that include some form of extraction. For other project types, appropriate surveillance mechanisms still have to be developed. The situation is more complex for the verification of GHG benefits. Again the CDM provides the necessary guidance for A/R projects but for all other project types which are not eligible under the CDM no reliable verification rules have been specified.

Certification and issuance of carbon credits. The standards systems that are specifically designed for carbon offsets (i.e. CDM, VCS and GS) have registries in place that can reflect transfers of ownership, thereby avoiding the double counting of credits.

It will be necessary to comprehensively address reducing emissions from deforestation and forest degradation (REDD) in a post-2012 agreement. It is clear that land-use related projects for carbon credits have been contentious in the past and there is a pressing need to create a comprehensive set of principles – with the associated methodologies, guidance and requirements – to ensure the credibility of forest carbon offsets.

As outlined in this guidebook, a number of institutions including WWF have been active in providing this kind of methodological and technical guidance for the design, development and implementation of forest-based carbon emissions reduction or sequestration projects. Taken together, these initiatives cover most of the major issues associated with such projects, including for example carbon accounting, social and environmental impact evaluation, and the strengthening and measurement of socio-economic and environmental ‘co-benefits’.

As more countries and project developers become involved in developing ‘early action’ projects to reduce emissions from deforestation and forest degradation, as encouraged by the decisions of the UN Framework Convention on Climate Change during the most recent Conference of Parties in Bali, there is an increasing need for consistency across the various methodologies proposed and for a truly comprehensive standards system to emerge that covers all types of biocarbon projects and all the issues at stake.

WWF has therefore, through its Green Carbon Initiative, adopted a meta-standard approach that will involve continued close collaboration with the existing standards systems to encourage the development of the necessary methodologies and procedures to fill the gaps that remain before a complete meta-standard framework (MSF) for forest carbon can become a reality. Some examples of these gaps include those related to the following issues:

- consideration of High Conservation Values during project design;
- rigorous tools for assessing the social and environmental performance of non-extractive forest projects; and
- accreditation of the certifying entities responsible for validating compliance with these social and environmental standards.

In addition, there is as yet no ‘universal’ registry of forest carbon projects and credits that would help track the different projects being implemented under the various standard systems.

WWF is committed to working on this challenge with the expanding community of carbon standard developers, technical experts and other actors to help ensure that a comprehensive set of methodologies emerges that can provide guidance and assurance to both buyers and sellers of forest-based carbon credits that forest carbon offsets can be of premium quality, can be real, additional, measurable, permanent, independently verified, unique, and can have sustainable development benefits.

WWF has been strongly supporting the Gold Standard as the most credible project standard for energy projects for both the compliance and the voluntary market, and we will continue to do so in the future. At the moment, WWF’s key focus for green carbon standards is on promoting the development of the MSF, testing it on the ground with the participation of local stakeholders and NGOs, and supporting pilot projects for REDD to enhance or create national deforestation baselines as a prerequisite for forest carbon credit. Based on the experience gathered, WWF may at a later stage decide to partner with an existing standard system working to develop a high-quality green carbon standard. This green carbon standard would ideally apply to market and non-market and funds approaches, and to both the voluntary and the compliance markets.

All of this, however, will require a broad-based dialogue and WWF invites as many different forest carbon stakeholders as possible to work together to contribute to this process.

Information resources

More information on green carbon standards and related issues discussed in this guidebook can be found in the following documents and websites:

WWF webpages on forest and climate change: www.panda.org/forests/climate

WWF Statement on Forests and Climate Change. Available at: assets.panda.org/downloads/wwf_statement_on_forests_and_cc_9_nov07.pdf

Kollmuss, A. et al. 2008. *Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards.* WWF Germany. Available at: assets.panda.org/downloads/vcm_report_final.pdf

CDM website: cdm.unfccc.int/index.html

VCS website: www.v-c-s.org/

GS website: www.cdmgoldstandard.org/

CCB website: www.climate-standards.org/

FSC website: www.fsc.org

HCV Resource Network: www.hcvnetwork.org

WWF Statement of Principles on Indigenous Peoples and Conservation: assets.panda.org/downloads/183113_wwf_policyrpt_en_f_2.pdf

Deutsche Post

WWF’s Green Carbon Initiative is supported by Deutsche Post