

Climate, Community & Biodiversity Project Design Standards

Draft Second Edition

Version 1.0

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About the CCBA

The Climate, Community & Biodiversity Alliance (CCBA) is a global partnership of leading companies and non-governmental organizations created in 2003. The CCBA aims to leverage policies and markets to promote the development of forest protection, restoration and agroforestry projects through high quality multiple-benefit land-based carbon projects. CCBA is made up of members including Conservation International, CARE, Rainforest Alliance, The Nature Conservancy, Wildlife Conservation Society, BP, GFA Consulting Group, Intel, SC Johnson, Sustainable Forestry Management Ltd., Weyerhaeuser, and advising institutions. For more information about the CCBA, please visit www.climate-standards.org or contact info@climate-standards.org.

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Preface to the Second Edition

The First Edition of the CCB Standards was released in May 2005 after a rigorous two year development process based on input from community and environmental groups, companies, academics, project developers and others with expert knowledge or affected by the standards. The Standards were then tested on projects in Asia, Africa, Europe and the Americas and peer reviewed by the world's leading tropical forestry institutes: the Center for International Forestry Research (CIFOR) in Indonesia, the Tropical Agricultural Research and Higher Education Center (CATIE) in Costa Rica and the World Agroforestry Centre (ICRAF) in Kenya.

The CCB Standards have become the most widely used and respected international standard for the multiple-benefits of land-based carbon projects. As of June, 2008 five projects had completed the validation process and four projects are in the public comment phase. These nine CCB projects aim to reduce greenhouse gas emissions by a nearly 4 million tons of CO₂e per year and cover 786,552 ha. Around 100 additional projects have indicated to the CCBA their intent to use the CCB Standards. Of these, approximately 40% are in Latin America, 35% in Africa, 20% in Asia and a few projects each in Europe, Australasia and North America. Around 43% of these projects will involve reduced emissions from deforestation or forest degradation (REDD), 30% will include reforestation, 30% will include native forest restoration, 16% will include agroforestry, 14% will include sustainable forest management and 3% afforestation. Many projects are combining several of these project activities to help optimize their multiple benefits.

This rapid and broad uptake across geographic areas and project types is a testament to the utility and flexibility of the CCB Standards. The preponderance of projects in tropical developing country regions, and particularly in Africa, where there have been relatively few projects registered under the Clean Development Mechanism, suggests that the CCB Standards are playing a role to stimulate project and market development to channel carbon market investments to areas where funding is most greatly needed for sustainable development, improved livelihoods and biodiversity conservation. The relatively large number of REDD projects reflects the high potential multiple benefits associated with REDD and the growing interest in this project type in response to the increasingly favorable international policy environment. A number of investors have declared their intention to give a preference to, give a premium to, or exclusively purchase land-based carbon offsets derived from CCB projects. From the other side, some project developers are charging and receiving substantial price premiums for the carbon coming from their CCB projects compared to their non-CCB projects. Much remains to be done to further stimulate the multiple-benefit forest carbon market and bring these multiple-benefit projects to scale, but the rapid developments to date indicate that the CCB Standards are making important contributions towards their goal of catalyzing a robust carbon market for multiple-benefit forest carbon projects.

In order to retain this influence, the CCB Standards must continue to respond to investor and other stakeholder interests in the rapidly evolving policy and market environment. To this end, CCBA launched a revision of the CCB Standards in February 2008. This revision aims to maintain the relevance of the CCB Standards in response to policy, market and technical changes, for example responding to opportunities related to REDD, to potential use alongside new carbon accounting standards and to new methodological and technological approaches for evaluation of multiple benefits. Another objective of the revision is to improve the standards to cover the full range of potential project types and circumstances, a process which will be greatly informed by feedback from the wide range of current users of the CCB Standards, including project developers, local and other stakeholders, investors, NGOs and Government agencies.

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Introduction

The Intergovernmental Panel on Climate Change's fourth assessment report¹ documents the impacts of human-induced climate change that are already occurring and which will worsen in coming decades, causing dramatic changes to ecosystems, to productivity and to the global economy. The effects will be particularly devastating for poor people who rely on natural resources and have minimal reserves and capacity to cope with the expected changes. To add to the problems, climate change will accelerate the ongoing loss of biological diversity that is the basis of healthy ecosystems on which all life depends.

Emissions from land-based activities like agriculture and deforestation are responsible for 30% of total human greenhouse gas production². Well designed land-based activities are therefore an essential component of climate change mitigation. Reducing deforestation and forest degradation can help reduce greenhouse gas emissions, while reforestation and agroforestry activities can remove carbon dioxide from the atmosphere. Land-based climate change mitigation activities also have exceptional potential to deliver additional benefits. When sensitively designed, they can help local people by generating sustainable livelihoods through the diversification of agriculture, soil and water protection, direct employment, use and sale of forest products and ecotourism, all of which can also help to build capacity to adapt to the effects of climate change. They can also make a substantial contribution to conserving biodiversity by restoring and protecting natural ecosystems throughout the world, saving threatened animal and plant species from extinction and maintaining resilient and productive natural life-support for humankind.

Exemplary land management projects can address the global problems of climate change, biodiversity loss and poverty simultaneously and in a cost-effective way. Multiple-benefit projects are also more likely to attract a diverse portfolio of investors. For example, a reforestation project with obvious environmental and social co-benefits may attract private investors for the carbon credits, government money for sustainable development and philanthropic grants for biodiversity conservation.

Conversely, poor quality land management can result in negative tradeoffs between various outcomes. For example, a non-native plantation may sequester carbon, but bring negative impacts in other spheres if it blocks migratory routes of key species or excludes traditional use of ecosystems by communities. Although major international agreements call for integrated approaches to global problems, there is little concrete guidance on how to develop such holistic projects.

The CCB Standards were created to foster the development and marketing of projects that deliver credible and significant climate, community and biodiversity benefits in an integrated, sustainable manner. They enable identification of land-based carbon projects that are designed using best practices to deliver robust and credible greenhouse gas reductions while also delivering net positive benefits to local communities and biodiversity.

As a project design standard, the CCB Standards are useful as a design tool to guide project development to ensure robust multiple-benefits will be delivered. Project design standards are especially valuable for forestry projects which often require significant upfront investment before carbon credits are generated and a carbon verification standard can be used.

¹ http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf

² Climate Analysis Indicators Tool version 5.0, <http://cait.wri.org/cait.php>

The CCB Standards are beneficial to a variety of users, including:

1) Project Developers and Other Stakeholders – Communities, NGOs, agencies and others use the CCB Standards for guidance in developing projects that deliver a suite of environmental and community benefits and demonstrate the high quality and multiple benefits of their project to potential investors and other stakeholders from an early stage. Projects that meet the CCB Standards are likely to garner preferential investment and even a price premium from funders that support multiple-value projects and best-practices projects.

2) Project Investors – Private companies, multilateral agencies and other funders investing in carbon credits can use the CCB Standards as a project screen. The Standards help investors to minimize portfolio risks by identifying high-quality projects that are unlikely to become implicated in controversy. Multiple-benefit projects create valuable goodwill and other ancillary returns for investors. Social and environmental benefits and sustainability are also an important means to reduce risks to the permanence of the climate benefits.

3) Governments – Governments of countries hosting projects can use the CCB Standards to ensure that projects will contribute to national sustainable development goals. Also, donor governments can use the Standards to identify Official Development Assistance (ODA) projects that efficiently satisfy multiple international obligations, such as the Millennium Development Goals and the UN conventions on Climate Change and Biological Diversity.

The role of the CCB Standards

The CCB Standards identify land-based projects that are designed using best practices to deliver robust and credible greenhouse gas reductions while also delivering net positive benefits to local communities and biodiversity. They can be applied to any land-based carbon projects including those that reduce greenhouse gas emissions, for example from deforestation or forest degradation (REDD), and those that remove carbon dioxide by sequestering carbon, for example from reforestation, afforestation, forest restoration, agroforestry and sustainable agriculture.

The CCB Standards perform two important roles, as a:

- **Project design standard:** CCB Standards can be applied early on during a project's design phase to validate projects that have been well designed, are suitable to local conditions and are likely to achieve significant climate, community and biodiversity benefits. This validation helps to build support for the project at a crucial stage and attract funding or other assistance from key stakeholders such as investors, governments or other important local, national or international partners. CCB Standards also offer rules and guidance to encourage effective and integrated project design. This early project support and funding can be of particular importance for multiple-benefit land-based carbon projects which often require considerable investment and effort for project development before greenhouse gas emissions reductions can be generated.
- **Multiple-benefit verification standard:** CCB Standards can be applied throughout the project's life to evaluate the social and environmental impacts of a land-based carbon project. CCB Standards can be combined very effectively with a carbon accounting standard as provided, for example, by the Clean Development Mechanism (CDM) or the Voluntary Carbon Standard (VCS). In this case, the CCB Standard evaluates the social and environmental impacts while the carbon accounting standard enables verification and registration of quantified greenhouse gas emissions reductions or removals. The CCB Standards verify the social and environmental benefits generated by a project, enabling

investors to select carbon credits with additional multiple benefits and to screen out projects with unacceptable social and environmental impacts.

There is no geographical restriction or limit on project start date or limit on project size for use of the CCB Standards. The Standards can be used for projects funded with private and/or public investment and designed for regulatory or voluntary carbon markets. It is important to note that the CCBA does not issue quantified emissions reductions certificates and therefore encourages the use of a carbon accounting standard (such as CDM or VCS) in combination with CCB Standards.

Validation and Verification using the CCB Standards

Use of the CCB Standards requires that independent, accredited auditors determine conformance with the CCB Standards at two stages, **validation** and **verification**. A CCB validation is an assessment of the design of a land-based carbon project against each of the CCB Project Design Standards criteria. A CCB verification is an evaluation of a project's delivery of net climate, community, and biodiversity benefits against the CCB Verification Standards³. Verification must be performed at least every five years.

Information regarding accreditation of auditors, a list of accredited auditors and guidelines for the use of the standards are all available at www.climate-standards.org.

³ The CCB Verification Standard is currently in development.

Project Checklist

General Section

<input type="checkbox"/>	G1. Original Conditions in the Project Area	Required
<input type="checkbox"/>	G2. Baseline Projections	Required
<input type="checkbox"/>	G3. Project Design and Goals	Required
<input type="checkbox"/>	G4. Management Capacity and Best Practices	Required
<input type="checkbox"/>	G5. Property Rights	Required
<input type="checkbox"/>	G6. Legal Status	Required
<input type="checkbox"/>	G7. Adaptive Management and Knowledge Dissemination	Required

Climate Section

<input type="checkbox"/>	CL1. Net Positive Climate Impacts	Required
<input type="checkbox"/>	CL2. Offsite Climate Impacts (“Leakage”)	Required
<input type="checkbox"/>	CL3. Climate Impact Monitoring	Required

Community Section

<input type="checkbox"/> Y	CM1. Net Positive Community Impacts	Required
<input type="checkbox"/> Y	CM2. Offsite Stakeholder Impacts	Required
<input type="checkbox"/> Y	CM3. Community Impact Monitoring	Required

Biodiversity Section

<input type="checkbox"/> Y	B1. Net Positive Biodiversity Impacts	Required
<input type="checkbox"/> Y	B2. Offsite Biodiversity Impacts	Required
<input type="checkbox"/> Y	B3. Biodiversity Impact Monitoring	Required

Gold Level Section

<input type="checkbox"/> Y	<input type="checkbox"/> ?	<input type="checkbox"/> N	GL1. Exceptional Community Benefits	Optional
<input type="checkbox"/> Y	<input type="checkbox"/> ?	<input type="checkbox"/> N	GL2. Exceptional Biodiversity Benefits	Optional
<input type="checkbox"/> Y	<input type="checkbox"/> ?	<input type="checkbox"/> N	GL3. Climate Change Adaptation Benefits	Optional

CCB Standards Validation Levels



APPROVED – All requirements met



GOLD – All requirements and also at least one optional Gold Level criterion met

Gen	Clim	Comm	Bio
G1.	Required		

GENERAL SECTION

G1. Original Conditions in the Project Area

Concept

The original conditions at the project area⁴ and the surrounding project zone⁵ before the project commences must be described. This description, along with projections (G2), will help to determine the likely impacts of the project.

Indicators

The project proponents must provide a description of the project zone, containing all the following information:

General Information

1. The location of the project and basic physical parameters (e.g., soil, geology, climate).
2. The types and condition of vegetation within the project area.
3. The boundaries of the project area and the project zone.

Climate Information

4. Current carbon stocks within the project area(s), using land-use stratification and methods of carbon calculation (such as biomass plots, formulae, default values) from the Intergovernmental Panel on Climate Change's 2006 Guidelines for National GHG Inventories for Agriculture, Forestry and Other Land Use⁶ (IPCC 2006 GL for AFOLU) or other CCBA approved methodologies (the list of CCBA approved methodologies is published on www.climate-standards.org).

Community Information

5. A description of communities⁷ located in the project zone, including basic socio-economic and cultural information that describes the social, economic and cultural diversity within communities (wealth, gender, age, ethnicity etc.) including specific groups such as indigenous peoples⁸ and a description of any community characteristics including shared history, shared culture, shared

⁴ The 'project area' is the area within the carbon project boundary.

⁵ The 'project zone' includes the project area and the boundaries of the adjacent communities potentially affected by the project.

⁶ Volume 4 Agriculture, Forestry and Other Land Use <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>

⁷ For the purposes of the CCB Standards, 'communities' are defined as all groups of people, including indigenous peoples, mobile peoples and other local communities, who live within or adjacent to the project area as well as any groups that regularly visit the area and derive income, livelihood or cultural values from the area– see Glossary Appendix B for more information.

⁸ Distinct, vulnerable, social and cultural groups whose members identify themselves as belonging to an indigenous cultural group – see Glossary Appendix B for more information.

livelihood systems, shared relationships with one or more natural resources and shared customary institutions and rules governing the use of resources.

6. A description of current land use and customary and legal property rights in the project zone, identifying any ongoing or unresolved conflicts or disputes (see also **G5**).

Biodiversity Information

7. A description of current biodiversity within the project zone (diversity of species and ecosystems⁹) and threats to that biodiversity, using appropriate methodologies, substantiated where possible with appropriate reference material.
8. An evaluation of whether the project zone or the area of project influence includes any of the following high conservation values and a description of the qualifying attributes¹⁰:
 - 8.1. Globally, regionally or nationally significant concentrations of biodiversity values;
 - a. protected areas¹¹
 - b. threatened species¹²
 - c. endemic species¹³
 - d. areas that support significant concentrations of a species during any time in their lifecycle (e.g. migrations, feeding grounds, breeding areas)
 - 8.2. Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;
 - 8.3. Threatened or rare ecosystems¹⁴;
 - 8.4. Areas that provide critical ecosystem services (e.g. hydrological services, erosion control, fire control, and where a breakdown in these services would have serious, catastrophic or cumulative socio-economic or environmental impacts);
 - 8.5. Areas that are fundamental for meeting the basic needs of local communities (e.g., for essential food, fuel, fodder, medicines or building materials without readily available alternatives); and
 - 8.6. Areas that are critical for the traditional cultural identity of local communities (areas of cultural, ecological, economic or religious significance identified in collaboration with the local communities).

⁹ Equates to habitat types, biotic communities, ecoregions, etc.

¹⁰ These high conservation value criteria are based on those defined by the High Conservation Value Resource Network <http://hcvnetwork.org/> with additional clarifications provided in footnotes and in other resources given in Appendix A 'Potential Tools and Strategies'.

¹¹ Legally protected areas equivalent to IUCN Protected Area Management Categories I-VI (see <http://www.unep-wcmc.org/wdpa/> for definitions) as well as areas that have been proposed for protected area status by the relevant statutory body but have not yet been gazetted, and including areas protected under international conventions (e.g., Ramsar sites, World Heritage Sites, UNESCO Man-and-Biosphere Reserves, etc.).

¹² Species that qualify for the IUCN Red List threat categories of Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) – see www.iucnredlist.org and also Glossary Appendix B for more information. Additional national or regional listings should also be used where these may differ from the IUCN Red List.

¹³ Species for which the entire global range is restricted to the site, the region or the country (the level of endemism must be defined).

¹⁴ Includes ecosystems or associations of species (intact or not) that have always been rare and those which are now rare or greatly reduced and where intact examples are very rare even if heavily disturbed or degraded.

Gen	Clim	Comm	Bio
G2.	Required		

G2. Baseline Projections

Concept

A baseline projection is a description of expected conditions in the project zone in the absence of project activities. The project impacts will be measured against this “without-project” reference scenario.

Indicators

The project proponents must develop a defensible and well-documented “without-project” reference scenario that to:

1. Describe the most likely land-use scenario in the absence of the project following IPCC 2006 GL for AFOLU or other CCBA approved methodologies, describing the range of potential land-use scenarios and justifying why the one selected is most likely.
2. Document that project activities would not have been undertaken anyway, explaining how existing laws or regulations would likely affect land use and justifying that the benefits being claimed by the project are truly “additional”, i.e. would be unlikely to occur without the project.¹⁵
3. Calculate the estimated carbon stock changes associated with the “without project” reference scenario described above. This requires estimation of carbon stocks for each of the land-use classes of concern and a definition of the carbon pools included, among the classes defined in the IPCC 2006 GL for AFOLU¹⁶. The timeframe for this analysis can be either the project lifetime (see **G3**) or the project accounting period, whichever is more appropriate¹⁷. If there is evidence that non-CO₂ greenhouse gas (GHG) emissions such as CH₄ or N₂O are more than 5% of the baseline GHG fluxes in the project area (in terms of CO₂ equivalents), they must be reported¹⁸.

For projects reducing the amount of emissions such as those reducing emissions from deforestation or forest degradation (REDD), this “without project” reference scenario will need to include an analysis of the amount of emissions that would have occurred without the project. For REDD projects, regional-level estimates of deforestation or degradation can be used at the planning stage of a project as long as there is an explicit time-limited commitment to develop a project-specific spatial analysis that includes:

- a. A locally specific carbon stock evaluation;
- b. A definition of the potential drivers of GHG emissions in the area in the “without project” reference scenario;

¹⁵ For example, project proponents must demonstrate that project activities would not have been implemented under business as usual due to significant financial, technological, institutional or capacity barriers. Actions implemented by the project must not be required by law, or project proponents must demonstrate that the pertinent laws are not being enforced. The project proponents must provide credible and well-documented analyses (poverty assessments, farming knowledge assessments, remote sensing analysis, etc.) to demonstrate that the “without project” reference scenario reflects land-use practices that are likely to continue or any likely changes in land-use practices.

¹⁶ Above-ground biomass, below-ground biomass, deadwood, litter, soils, harvested wood products.

¹⁷ In some cases, the project lifetime and the project accounting period may be different.

¹⁸ The following CDM Executive Board tool can be used to test the significance of emissions sources: http://cdm.unfccc.int/EB/031/eb31_repan16.pdf

- c. An analysis of the rates and drivers of deforestation and degradation;
 - d. A definition and justification of the region that will be evaluated to estimate leakage. This is the area where the activities resulting in GHG emissions may shift as a result of the project;
 - e. A description and justification of the approaches used to analyze the rates of deforestation, degradation and leakage. The analysis may use a model based on historical rates and patterns of deforestation and degradation. Alternatively, the analysis may include predicting the expected increases or decreases in deforestation and degradation. In either case, the analysis, assumptions and data used must be justified;
- 4. Describe how the “without project” reference scenario would affect communities in the project zone, including the impact of likely changes in water and soil and other locally important ecosystem services.
 - 5. Describe how the “without project” reference scenario would affect biodiversity in the project zone (e.g., habitat availability, landscape connectivity and threatened species).

Gen	Clim	Comm	Bio
G3.		Required	

G3. Project Design and Goals

Concept

The project must be described in sufficient detail so that a third-party can adequately evaluate it.

Projects that operate in a transparent manner build confidence with stakeholders and outside parties and enable them to contribute more effectively to the project. Furthermore, transparent communication of the GHG emissions reductions or removals generated by the project is important to maintain the integrity of the carbon market. This includes reporting whether the carbon offsets are intended for sale within the regulatory or voluntary markets and how they will be registered or retired so that ownership can be tracked and double-counting avoided.

Indicators

The project proponents must:

1. Provide a summary of the project's major climate, community and biodiversity objectives.
2. Describe each project activity with expected climate, community and biodiversity impacts and its relevance to achieving the project's objectives.
3. Provide a map identifying the project location and geo-referenced boundaries of the project area(s), where the project activities will occur, of the project zone and of additional surrounding locations that are predicted to be impacted by project activities (e.g. through leakage).
4. Provide a timeframe for the duration of the project and its credits, as well as the rationale used for determining their duration. If the accounting period for carbon credits differs from the project lifetime, explain.
5. Identify likely natural and human-induced risks to climate, community and biodiversity benefits during the project lifetime. Outline measures that the project plans to undertake to mitigate these risks.
6. Demonstrate that the project design includes specific measures to ensure the maintenance or enhancement of the high conservation value attributes identified in **G1** consistent with the precautionary approach.
7. Demonstrate that measures will be taken to enhance the permanence of climate, community and biodiversity benefits beyond the project lifetime.
8. Document and defend how communities and other stakeholders¹⁹ potentially affected by the project activities have been defined and have been involved in project design, particularly with a view to optimizing community and stakeholder benefits and maintaining high conservation values. The project must inform and engage broadly with all community groups and other

¹⁹ For the purposes of the CCB Standards 'other stakeholders' are defined as groups potentially affected by the project activities that are not living on or adjacent to the project site.

stakeholders through representatives who are designated by the communities themselves in accordance with their own procedures using socially and culturally appropriate methods that are gender and inter-generationally inclusive at mutually agreed locations. Stakeholders affected by the project must have an opportunity before the project design is finalized and during implementation to evaluate impacts and raise concerns about potential negative impacts, express desired outcomes and provide input on the project design. Project developers must document stakeholder dialogues and indicate if and how the project proposal was revised based on such input.²⁰ A plan must be developed to continue communication and consultation between project managers and all community groups about the project, its impacts and potential adaptation of implementation throughout the life of the project.

9. Demonstrate that the project was developed with a strong knowledge of local customs and that, where relevant, project activities accommodate local customs.
10. Show that documentation used to demonstrate conformance with the CCB Standards has been made publicly accessible with a public invitation to make comments during a period of at least 30 days prior to project validation. The comment period must have been appropriately publicized to the communities and to other stakeholders (regional, national and international). Project proponents must play an active role in distributing key project documents to affected communities and stakeholders and hold widely publicized information meetings in relevant local or regional languages. All comments received must be compiled according to issues raised and a written synopsis made publicly available in an appropriate manner of how each material issue has been addressed in the project design and implementation.
11. Demonstrate that appropriate financial mechanisms will be in place to guarantee an adequate flow of funds to support the anticipated climate, community and biodiversity benefits.
12. Provide an estimate of expected GHG emissions reductions or removals by year and indicate the intended market or platform through which the credits will be sold and the registry and/or retirement mechanism that will be used.
13. Specify how double counting of GHG emissions reductions or removals will be avoided, particularly for offsets sold on the voluntary market and generated in a country with an emissions cap.

²⁰ In cases where it is unclear whether a project will be implemented or not, it is acceptable to start with a preliminary community consultation, provided there are plans for appropriate full engagement before the start of the project.

Gen	Clim	Comm	Bio
G4.	Required		

G4. Management Capacity and Best Practices

Concept

The success of a project depends upon the competence of the implementing management team. Projects that include a significant capacity-building (training, skill building, etc.) component are more likely to sustain the positive outcomes generated by the project and have them replicated elsewhere.

Best practices for project management include: local stakeholder employment, worker rights, worker safety and a clear process for handling any grievances.

Indicators

The project proponents must:

1. Document key technical skills that will be required to implement the project successfully including community engagement, biodiversity assessment and carbon measurement and monitoring skills. Document the management team's expertise and prior experience implementing land management projects at the scale of this project. If relevant experience is lacking, the proponents must demonstrate how other organizations will be partnered with to support the project and/or have a recruitment strategy to fill the gaps.
2. Include a plan to provide orientation and training for the project's employees and relevant people from the communities with an objective of building locally relevant skills and knowledge to increase local participation in project implementation, ensuring that capacity building targets a wide range of people in the communities including minority and underrepresented groups.
3. Show that people from the communities will be given an equal opportunity to fill all employment positions (including management) if the job requirements are met. Project proponents must explain how employees will be selected for positions and where relevant, must indicate how local community members, including women and other potentially underrepresented groups, will be given a fair chance to fill positions for which they can be trained.
4. Show that the project will inform workers about their rights and that the project meets or exceeds all applicable laws and/or regulations covering worker rights.
5. Comprehensively assess situations and occupations that pose a substantial risk to worker safety. A plan must be in place to inform workers of risks and to explain how to minimize such risks. Where worker safety cannot be guaranteed, project proponents must show how the risks will be minimized using best work practices.
6. Document the financial health of the implementing organization(s) to demonstrate that financial resources budgeted will be adequate to implement the project.
7. Formalize a clear process for handling unresolved conflicts and grievances that arise during project planning and implementation. The project design must include a process for hearing, responding to and resolving community grievances within a reasonable time period. This grievance process must be publicized to local stakeholders and must be managed by a third party or mediator to prevent any conflict of interest. Project management must attempt to resolve all

reasonable grievances raised, and provide a written response to grievances within 30 days. Grievances and project responses must be documented.

Gen	Clim	Comm	Bio
G5.		Required	

G5. Property Rights

Concept

If any unresolved disputes over tenure or use rights to land or resources in the project zone disputes exist, the project should demonstrate how it will help to bring them to resolution so that there are no unresolved disputes by the start of the project.

Indicators

Based on information about current property rights provided in **G1**, the project proponents must:

1. Demonstrate with documented consultations and agreements that the project will not encroach uninvited on private property, community property²¹, or government property and has obtained the free, prior, informed consent of those whose rights will be affected by the project.
2. Demonstrate that the project does not require the relocation of people or of their activities important for the livelihoods and culture of the communities. If any relocation of habitation or activities is voluntarily undertaken within the terms of an agreement, the project proponents must demonstrate that the agreement was made with the free, prior, informed consent of those concerned with provisions in the agreement for just and fair compensation.
3. Describe potential in-migration to the project zone, if relevant, and explain how the project will respond.
4. Demonstrate that the project proponents have clear, unencumbered title to the carbon rights, or provide legal documentation demonstrating that the project is undertaken on behalf of the carbon owners with their full consent.

²¹ Including lands that communities have traditionally owned, occupied or otherwise used or acquired.

Gen	Clim	Comm	Bio
G6.		Required	

G6. Legal Status

Concept

The project must be based on a solid legal framework (e.g., appropriate contracts are likely to be in place) and the project must seek to satisfy applicable planning and regulatory requirements.

During the project design phase, the project proponents should communicate early on with relevant local, regional and national authorities and allow adequate time to earn necessary approvals. The project design should be flexible to accommodate potential modifications that may arise to secure regulatory approval.

Indicators

The project proponents must:

1. Demonstrate that the project complies with all relevant national and local laws²² and administrative requirements in the country(ies) in which operations occur and international treaties and agreements to which the country(ies) is(are) a signatory.
2. Document that the project has approval from the appropriate authorities, including the established formal and/or traditional authorities with the communities.
3. Identify any illegal activities that could affect the project's climate, community or biodiversity impacts (e.g., logging) taking place in the project zone and describe how the project will help to reduce these activities.

²² Local laws include all legal norms given by organisms of government whose jurisdiction is less than the national level, such as departmental, municipal and customary norms.

Gen	Clim	Comm	Bio
G7.		Required	

G7. Adaptive Management and Knowledge Dissemination

Concept

Adaptive management is a systematic and rigorous approach to learning from the outcomes of management actions, accommodating change and improving management. It involves synthesizing existing knowledge, exploring alternative actions and making forecasts about their outcomes and adjusting management strategies accordingly.²³

Adaptive management is based upon the premise that ecosystems and social systems are complex and inherently unpredictable. Adaptive management views land management actions as learning opportunities and as potential experiments for systematically testing assumptions and identifying adjustments that could benefit the project. It enables a project to evolve to meet changing or unanticipated needs, and can help ensure that the project realizes its goals over the long term.

Field-based knowledge can be of value to other projects. If actively disseminated, this information can accelerate the adoption of innovative practices that bring benefits both globally and locally.

Indicators

The project proponents must:

1. Demonstrate how management actions and monitoring programs are designed to generate reliable feedback that is used to improve project outcomes.
2. Have a management plan for documenting decisions, actions, outcomes and lessons learned and sharing this information with others within the project team and more broadly, so experience is used to enhance project performance and to stimulate learning between projects and replication of successful practices.
3. Demonstrate how the project design is sufficiently flexible to accommodate potential changes and that the project has a defined process in place to adjust project activities as needed.

²³ The definition of Adaptive Management and several of the indicators are based on Nyberg (1999). *An Introductory Guide to Adaptive Management*.

Gen	Clim	Comm	Bio
CL1.	Required		

CLIMATE SECTION

CL1. Net Positive Climate Impacts

Concept

The project must generate net positive impacts on atmospheric concentrations of greenhouse gases (GHGs) over the project lifetime from land use changes within the project boundaries.

Indicators

The project proponents must:

1. Estimate the net change in carbon stocks due to the project activities using the methods of calculation, formulae and default values of the IPCC 2006 GL for AFOLU or a CCBA approved methodology²⁴. The net change is equal to carbon stock changes *with* the project minus carbon stock changes *without* the project (the latter having been estimated in **G2**). This estimate must be based on clearly defined and defensible assumptions about how project activities will alter GHG emissions or carbon stocks over the duration of the project or the project accounting period.
2. Estimate the net change in the emissions of CH₄ and N₂O in the *with* and *without* project scenarios if those gases are likely to account for more than 5% (in terms of CO₂ equivalents) of the project's overall GHG impact, or provide evidence that they will not account for more than 5% of the total project emissions reductions over each monitoring period.
3. Estimate any other GHG emissions resulting from project activities. Emissions sources that should be considered include, but are not limited to: emissions from biomass burning during site preparation; emissions from fossil fuel combustion²⁵; direct emissions from the use of synthetic fertilizers²⁶; and emissions from N-fixing species
4. Demonstrate that the net climate impact of the project is positive. The net climate impact of the project is the net change in carbon stocks plus net change in non-CO₂ GHGs where appropriate minus any other GHG emissions resulting from project activities minus any likely project-related unmitigated negative offsite climate impacts.

²⁴ The list of CCBA approved methodologies is published on www.climate-standards.org.

²⁵ For their quantification, see, e.g., http://cdm.unfccc.int/EB/033/eb33_repan14.pdf

²⁶ For their quantification, see, e.g., http://cdm.unfccc.int/EB/033/eb33_repan16.pdf

Gen	Clim	Comm	Bio
CL2.	Required		

CL2. Offsite Climate Impacts (“Leakage”)

Concept

The project proponents must quantify and mitigate likely negative offsite climate impacts, namely; any increase in emissions of GHGs outside the project boundary as a result of project activities (commonly referred to as “leakage”).

The offsite changes in GHG emissions can result from a variety of causes including:

- activity shifting or displacement;
- market effects (particularly when timber harvest volumes are reduced by the project);
- increased investment in the project zone;
- decreased investment in the project zone; and
- alternative livelihood programs or other leakage prevention activities.

Indicators

The project proponents must:

1. Determine the types of leakage that are expected and estimate potential offsite increases in GHGs (increases in emissions or decreases in sequestration) due to project activities. Where relevant, define and justify where leakage is most likely to take place.
2. Document how any negative offsite impacts resulting from project activities will be mitigated and estimate the extent to which such impacts will be reduced.
3. Subtract any likely project-related unmitigated negative offsite climate impacts from the climate benefits being claimed by the project and demonstrate that this has been included in the evaluation of net climate impact of the project (as calculated in **CL1.4**).
4. Only factor in the non-CO₂ gases CH₄ and N₂O to the net change calculations (above) if they are likely to account for more than 5% (in terms of CO₂ equivalents) of the project’s overall GHG impact, otherwise provide evidence that they do not account for more than 5% of the total emissions reductions over each monitoring period.

Gen	Clim	Comm	Bio
CL3.	Required		

CL3. Climate Impact Monitoring

Concept

Before a project begins, the project proponents must have an initial monitoring plan in place to quantify and document changes in project-related carbon pools, project emissions, and non-CO₂ GHG emissions if appropriate, (within and outside the project boundaries). The monitoring plan should state which measurements will be taken, which sampling strategy will be used and how frequently the measurements will be taken.

Since developing a full monitoring plan can be costly, it is accepted that some of the plan details may not be fully defined at the design stage, when projects are being evaluated against the CCB Project Design Standards as long as there is an explicit time-limited commitment to develop and implement a monitoring plan.

Indicators

The project proponents must:

1. Have an initial plan for how they will select carbon pools and non-CO₂ GHGs to be monitored, and the frequency of monitoring. Potential pools include aboveground biomass, litter, dead wood, belowground biomass, wood products, soil carbon and peat. Pools to monitor must include any pools expected to decrease as a result of project activities, including those in the region outside the project boundaries resulting from all types of leakage identified in CL2. Leakage monitoring must be continued for at least five years after all activity displacement or other leakage causing activity has taken place. Relevant non-CO₂ (CH₄ and N₂O) gases must be monitored if they account for more than 5% of the project's net climate impact expressed in terms of CO₂ equivalents. Direct field measurements using scientifically robust sampling must be used to measure more significant elements of the project's carbon stocks. Other data must be suitable to the project site and specific forest type.
2. Commit to developing a full monitoring plan within six months of the project start date or within twelve months of validation against the CCB Standards.

Gen	Clim	Comm	Bio
CM1.	Required		

COMMUNITY SECTION

CM1. Net Positive Community Impacts

Concept

The project must generate positive impacts on the social and economic well-being of communities within the project lifetime, such that the project generates a net positive impact for each constituent socio-economic or cultural group.

Projects must maintain or enhance the high ecosystem service conservation values²⁷ in the project zone because of their importance to the communities' well-being.

Indicators

The project proponents must:

1. Use appropriate methodologies²⁸ to estimate the impacts on communities, including all constituent socio-economic or cultural groups such as indigenous peoples (defined in **G1**) resulting from planned project activities. A credible estimate of impacts must include changes in community well-being due to project activities and an evaluation of the impacts by the affected groups. This estimate must be based on clearly defined and defensible assumptions about how project activities will alter social and economic well-being, including potential impacts of changes in water and soil resources, over the duration of the project. The “with project” scenario must then be compared with the ‘without project’ scenario of social and economic well-being in the absence of the project (completed in **G2**). The difference (i.e., the community benefit) must be positive for all community groups.
2. Demonstrate that no high ecosystem service conservation values identified in **G1.8.4-6** will be negatively affected by the project.

²⁷ For the purposes of the CCB Standards, ‘high **ecosystem service** conservation values’ are defined as:
G1.8.4 Areas that provide critical ecosystem services (e.g. hydrological services, erosion control, fire control, etc.);

G1.8.5 Areas that are fundamental for the livelihoods of local communities; and,

G1.8.6 Areas that are critical for the traditional cultural identity of local communities (areas of cultural, ecological, economic or religious significance identified in collaboration with the local communities).

²⁸ See Appendix A Potential Tools and Strategies.

Gen	Clim	Comm	Bio
CM2.		Required	

CM2. Offsite Stakeholder Impacts

Concept

The project proponents must evaluate and mitigate any possible social and economic impacts that could result in the decreased social and economic well-being of stakeholders living outside the project zone resulting from project activities. Project activities should at least ‘do no harm’ to the well-being of offsite stakeholders.

Indicators

The project proponents must:

1. Identify any potential negative offsite stakeholder impacts that the project activities are likely to cause.
2. Describe how the project plans to mitigate these negative offsite social and economic impacts.
3. Demonstrate that the project is not likely to result in net negative impacts on the well-being of any offsite stakeholder groups.

Gen	Clim	Comm	Bio
CM3.		Required	

CM3. Community Impact Monitoring

Concept

The project proponents must have an initial monitoring plan to quantify and document changes in social and economic well-being resulting from the project activities (for communities and other stakeholders). The monitoring plan should indicate which communities and other stakeholders will be monitored, which measurements will be taken and which sampling strategy will be used to determine how the project affects social and economic well-being.

Since developing a full community monitoring plan can be costly, it is accepted that some of the plan details may not be fully defined at the design stage, when projects are being evaluated against the CCB Project Design Standards as long as there is an explicit time-limited commitment to developing and implementing a monitoring plan and communicating results.

Indicators

The project proponents must:

1. Have an initial plan for how they will select community variables to be monitored, and the frequency of monitoring and reporting. Potential variables include income, employment generation, health, market access, schools, food security and education. Community variables at risk of being negatively impacted by project activities should be monitored.
2. Have an initial plan for how they will assess the effectiveness of measures used to maintain or enhance high ecosystem-service conservation values present in the project zone.
3. Plan to disseminate the results of monitoring, ensuring that they are made publicly available and are communicated to communities and other stakeholders.

Gen	Clim	Comm	Bio
B1.	Required		

BIODIVERSITY SECTION

B1. Net Positive Biodiversity Impacts

Concept

The project must generate net positive impacts on biodiversity within the project zone and within the project lifetime, measured against the baseline conditions.

Projects should maintain or enhance any high biodiversity conservation values²⁹ present in the project zone.

The population of invasive species must not increase as a result of the project, either through direct use or indirectly as a result of project activities. Genetically modified organisms (GMOs) raise ethical, scientific and socio-economic issues and should be used with caution, only after an adequate justification and a thorough evaluation of any potential adverse effects and excluding any use that presents possible environmental or socio-economic risk. For example, some GMO attributes may result in invasive genes or species.

Indicators

The project proponents must:

1. Use appropriate methodologies to estimate changes in biodiversity as a result of the project in the project zone and in the project lifetime. This estimate must be based on clearly defined and defensible assumptions. The “with project” scenario should then be compared with the baseline “without project” biodiversity scenario completed in **G2**. The difference (i.e., the net biodiversity benefit) must be positive.
2. Demonstrate that no high biodiversity conservation values identified in **G1.8.1-3** will be negatively affected by the project.
3. Identify all species to be used by the project and show that no known invasive species will be introduced into any area affected by the project and that the population of existing invasive species will not increase as a result of the project.
4. Describe possible adverse effects of non-native species used by the project on the region’s environment, including impacts on native species and disease introduction or facilitation. Project proponents must justify any use of non-native species over native species.

²⁹ For the purposes of the CCB Standards, ‘high **biodiversity** conservation values’ are defined as:

G1.8.1 Globally, regionally or nationally significant concentrations of biodiversity values (protected areas, threatened species, endemic species and areas which support significant concentrations of a species during any time in their lifecycle);

G1.8.2 Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance; .

G1.8.3 Threatened or rare ecosystems.

5. Describe possible adverse effects of GMOs used by the project on the region's environment, including impacts on native species. The project proponents must justify any use of GMOs. Project proponents must demonstrate that any GMOs used are approved by relevant government authorities and must make publicly available full documentation of the genetic modification, authorized approvals and the extent of GMO use. Furthermore, the project must plan to monitor the impacts of GMO use to demonstrate that there are no potentially negative environmental or social consequences.

Gen	Clim	Comm	Bio
B2. Required			

B2. Offsite Biodiversity Impacts

Concept

The project proponents must evaluate and mitigate likely negative offsite impacts on biodiversity outside the project zone resulting from project activities.

Indicators

The project proponents must:

1. Identify potential negative offsite biodiversity impacts that the project is likely to cause.
2. Document how the project plans to mitigate these negative offsite biodiversity impacts.
3. Evaluate likely unmitigated negative offsite biodiversity impacts against the biodiversity benefits of the project within the project boundaries. Justify and demonstrate that the net effect of the project on biodiversity is positive.

Gen	Clim	Comm	Bio
B3. Required			

B3. Biodiversity Impact Monitoring

Concept

The project proponents must have an initial monitoring plan to quantify and document the changes in biodiversity resulting from the project activities (within and outside the project boundaries). The monitoring plan must state which measurements will likely be taken and which sampling strategy used.

Since developing a full biodiversity-monitoring plan can be costly, it is accepted that some of the plan details may not be fully defined at the design stage, when projects are being evaluated by the CCB Project Design Standards as long as there is an explicit time-limited commitment to developing and implementing monitoring plans and communicating results.

Indicators

The project proponents must:

1. Have an initial plan for how they will select biodiversity variables to be monitored, and the frequency of monitoring and reporting. Potential variables include: species abundance; population size, range, trends and diversity; habitat area, quality and diversity; landscape connectivity; forest fragmentation etc. Biodiversity variables at risk of being negatively impacted by project activities must be monitored.
2. Have an initial plan for how they will assess the effectiveness of measures used to maintain or enhance high biodiversity conservation values present in the project zone.
3. Plan to put results of monitoring into the public domain and make them freely available on the internet.

Gen	Clim	Comm	Bio	Gold
GL1.		Optional		

GOLD LEVEL SECTION

GL1. Exceptional Community Benefits

Concept

This Gold Level Exceptional Community Benefits criterion recognizes project approaches that are explicitly pro-poor in terms of targeting benefits to poorer communities **and** poorer more vulnerable households and individuals within these communities, and in so doing make a significant contribution to reducing the poverty of these poorer, more vulnerable groups. Given that poorer people typically have less access to land and other natural assets this will require innovative approaches that enable poorer households to participate effectively in land-based carbon activities despite their limited natural assets. Furthermore this criterion requires that the project will “do no harm” to poorer and more vulnerable members of the communities, i.e., establishing that no member of a poorer or more vulnerable social group will experience an overall (i.e., net) negative impact in terms of their well-being and/or rights.

Indicators

Project proponents must:

1. Demonstrate that the project is in a low human development country OR in an administrative area of a medium or high human development³⁰ country that is relatively poor such that at least 50% of the population of that area is below the national poverty line.
2. Demonstrate that poorer households in the community, and specifically at least 50% of households within the lowest well-being/poorest quartile, are likely to benefit substantially from the project.
3. Demonstrate that any barriers or risks that might prevent benefits going to poorer households have been identified and have been addressed in order to increase the probable flow of benefits to poorer households.
4. Demonstrate that measures have been taken to identify any poorer and more vulnerable households and individuals whose well-being or poverty may be negatively affected by the project and that the project design includes measures to avoid any such impacts, or where negative impacts are unavoidable, demonstrate that they will be effectively mitigated.
5. Demonstrate that community impact monitoring will be able to identify positive and negative impacts on poorer and more vulnerable groups - in other words that social impact monitoring takes a differentiated approach that can identify positive and negative impacts on poorer households and individuals and other disadvantaged groups including women.

³⁰ Low, Medium, and High Human Development Countries defined in the latest UNDP Human Development Report http://hdr.undp.org/en/media/hdr_20072008_en_complete.pdf

Gen	Clim	Comm	Bio	Gold
GL2.				Optional

GL2. Exceptional Biodiversity Benefits

Concept

All projects conforming to the CCB Standards must demonstrate net positive impacts on biodiversity within their project area. This Gold Level Exceptional Biodiversity Benefits criterion identifies projects that conserve biodiversity at sites of global significance as high biodiversity conservation priorities. Such sites should be identified nationally using globally standard criteria and thresholds, based on the needs of biodiversity requiring conservation at the site scale. The criteria for selection of these sites of global significance for biodiversity conservation are based on a framework of vulnerability and irreplaceability defined in terms of species and population threat levels, since these are the most clearly defined elements of biodiversity³¹. These scientifically based criteria are drawn from existing best practices that have been used, to date, to identify important sites for biodiversity in over 173 countries.

Indicators

Project proponents must demonstrate that the project area includes a site of high biodiversity conservation priority by meeting either the vulnerability *or* irreplaceability criteria defined below:

1. Vulnerability

Regular occurrence of a globally threatened species (according to the IUCN Red List) at the site:

- 1.1. Critically Endangered (CR) and Endangered (EN) species - presence of at least a single individual; or
- 1.2. Vulnerable species (VU) - presence of at least 30 individuals or 10 pairs.

Or,

2. Irreplaceability

A minimum proportion of a species' global population present at the site at any stage of the species' lifecycle according to the following thresholds:

- 2.1. Restricted-range species - species with a global range less than 50,000 km *and* 5% of global population at the site; or
- 2.2. Species with large but clumped distributions - 5% of the global population at the site; or
- 2.3. Globally significant congregations - 1% of the global population seasonally at the site; or
- 2.4. Globally significant source populations - 1% of the global population at the site; or
- 2.5. Bioregionally restricted assemblages.

³¹ These GL2 criteria are based on those defined for Key Biodiversity Areas. See Appendix A Potential Tools and Strategies for further guidance.

Gen	Clim	Comm	Bio	Gold
GL3.		Optional		

GL3. Climate Change Adaptation Benefits

Concept

Anticipated local climate change and climate variability within the project area could potentially affect communities and biodiversity during the life of the project and beyond. Communities and biodiversity in some areas of the world will be more vulnerable to the negative impacts of climate change, for example due to: vulnerability of key crops or production systems to climatic changes; lack of diversity of livelihood resources; lack of resources, institutions and capacity to develop new livelihood strategies; fragmentation of habitats; and high levels of threat to species survival. Land-based carbon projects have the potential to help local communities and biodiversity adapt to climate change, for example by: diversifying revenues and livelihood strategies; maintaining valuable ecosystem services such as hydrological regulation, pollination, pest control and soil fertility; and increasing habitat connectivity across a range of habitat and climate types. This criterion aims to identify projects that will provide significant support to assist local communities and/or biodiversity to adapt to the impacts of climate change.

Indicators

The project proponents must:

1. Identify likely regional climate change and climate variability impacts, using available studies, and identify how the local land-use scenario would potentially change due to these climate changes in the absence of the project.
2. Identify any risks to the project's climate, community and biodiversity benefits resulting from likely climate change and climate variability impacts and explain how these risks are being mitigated. Examples include species chosen (adapted to various temperatures, precipitation, seasonality, salinity of water table, diseases/pests, etc.), the methods used to implement GHG emissions reduction activities, certainty of water sources critical for project success and location of activities in relation to anticipated land cover changes (e.g. flooding) expected as a result of climate change.
3. Demonstrate that current or anticipated climate changes are having or are likely to have an impact on the well-being of communities *and/or* the conservation status of biodiversity in the project zone and surrounding regions.

For community impacts, the project proponents can demonstrate, for example, evidence of decreased access to natural resources of importance for communities' livelihoods and overall well-being. Climate change models that detail the predicted effects on these natural resources, such as freshwater, and participatory evaluations can be used to demonstrate anticipated impacts on communities.

For biodiversity impacts, the project proponents can demonstrate evidence of a change in actual range, phenology or behavior of a species found within the project zone. For a range change, the project proponents should demonstrate that the change affects the species entire range and not just a subset of the range (which might be part of natural variation and offset by gains in other parts of the species

range). Alternatively, the project proponents can demonstrate anticipated negative changes in the range of one or more species found in the project area using modeling techniques³².

4. Demonstrate that the project activities will assist communities *and/or* biodiversity to adapt to the probable impacts of climate change.

For community adaptation, where communities are predicted to experience or are experiencing decreased access to natural resources because of climate change, project proponents must demonstrate that activities are likely to decrease their dependence on these natural resources. For example, where freshwater access is affected, a project can improve water management for maximum efficiency or provide alternative agricultural methods or products that require less water. Project activities may also help communities adapt to new planting and harvesting schedules to ensure maximum yields. Other climate change adaptation assistance for communities can involve making them more able to cope with 'extreme events' that are more likely with climate change such floods, droughts, mudslides etc.

For biodiversity adaptation, where an actual range or phenology change in a species is identified, the project proponents must demonstrate that the project activities will make a significant contribution to mitigating this impact of climate change. Examples include: creating suitable habitat in an area that is becoming climatically suitable for a species that is losing climatically-suitable habitats in other parts of its range; and providing a native food source for a species that is suffering population declines because of timing mismatches between its food needs and food availability linked to climate change (such as spring emergence of vegetation or insects). Where a modeled range impact is demonstrated, project proponents should demonstrate that the project is making a significant contribution to improving species' ability to occupy a new range or creating habitat in areas to which the species is migrating.

³² The recommended modeling tool is Maxent because of its ease of implementation and performance (<http://www.cs.princeton.edu/~schapire/maxent/>). Recommended climatologies are IPCC4 A1 or A2 scenarios, Hadley or Japan high resolution GCM, downscaled to 1km (also available on the internet at www.worldclim.org). Best practice is to have this analysis conducted by a researcher who has published on climate/species distribution modeling using Maxent in the peer-review literature.

Appendix A

Potential Tools & Strategies

G1. Original Conditions in the Project Area

- a) Intergovernmental Panel on Climate Change, 2006. *Guidelines for National Greenhouse Gas Inventories Volume 4 Agriculture, Forestry and Other Land Use* <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>
- b) Rapid Rural Assessment methodologies, including: 1) Chambers, R. 1992. *Rural Appraisal: Rapid, Relaxed, and Participatory*. Institute of Development Studies Discussion Paper 311. Sussex: HELP; and 2) McCracken, A, Pretty, W, Conway, G., 1988, *An Introduction to Rapid Rural Appraisal For Agricultural Development*, International Institute for Environment and Development, London. Also see: www.fao.org/docrep/W3241E/w3241e09.htm
- c) The Ten Seed Technique: a modified participatory learning and action (PLA) technique. Ravi Jayakaran. 2002. <http://www.entrepreneursdumonde.org/pratiques/files/Ten-Seed%20Technique.pdf>
- d) Rapid Biodiversity Assessment methodologies include: 1) Draft Guidelines for methods, including indicators, for monitoring and the rapid assessment of wetland biodiversity, marine and coastal. Convention on Wetlands, Document STRP-11-10, Addendum 1. Viewable at: http://www.ramsar.org/strp11_doc10add1.pdf; and 2) www.biodiversityscience.org.
- e) High Conservation Value Resource Network <http://hcvnetwork.org/>.
- f) Global HCVF Toolkits <http://hcvnetwork.org/resources/global-hcv-toolkits>
- g) EBRD. 2007. Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. Draft revised Environmental Policy. European Bank for Reconstruction and Development. London, United Kingdom.
- h) IADB. 2006. Policy Directive B.9: Natural Habitats and Cultural Sites. Environment and Safeguards Compliance Policy. Sector Strategy and Policy Papers Series ENV-148. Sustainable Development Department, Inter-American Development Bank, Washington, DC, USA.
- i) IFC. 2006. Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management. International Finance Corporation's Performance Standards on Social & Environmental Sustainability. International Finance Corporation, Washington DC, USA.
- j) Langhammer, P.F., Bakarr, M.I., Bennun, L.A., Brooks, T.M., Clay, R.P., Darwall, W., De Silva, N., Edgar, G.J., Eken, G., Fishpool, L.D.C., Fonseca, G.A.B. da, Foster, M.N., Knox, D.H., Matiku, P., Radford, E.A., Rodrigues, A.S.L., Salaman, P., Sechrest, W., and Tordoff, A.W. 2007. Identification and gap analysis of Key Biodiversity Areas: Targets for comprehensive protected area systems. Best Practice Protected Areas Guidelines Series No. 15. IUCN, Gland, Switzerland.
- k) World Bank. 2001. Operational Policy 4.01 Environmental Evaluation, OP 4.10. Indigenous People, OP 4.12 Involuntary Resettlement, OP 4.36 Forests, OP 4.04 Natural Habitats and OP 4.11 Physical Natural Resources. Operational Manual Vol. II. The World Bank Group, Washington DC, USA. URL: <http://go.worldbank.org/NRJ1VSJT60>.
- l) ADB. 2007. Attachment A: Safeguard Requirements for borrowers/clients – Environment. Consultation Draft of the Safeguard policy Statement. Asian Development Bank, Metro Manila, Philippines. URL: <http://www.adb.org/Documents/Policies/Safeguards/Consultation-Draft.pdf>
- m) UN Permanent Forum on Indigenous Issues (UNPFII) brochure http://www.un.org/esa/socdev/unpfii/documents/unpfii brochure_en07.pdf

G2. Baseline Projections

- a) To prove additionality – Various economic and financial tools can be used, including: pay-back period with and without carbon financing; economic analyses showing without carbon financing that the project would be less profitable than other competing land-uses; analyses showing that the project would not be realized because of barriers such as lack of financial capital, prevailing practices, lack of capacity or knowledge, and institutional or market barriers. Project proponents can also describe if there are similar projects in the area. If yes, are the projects financed privately or publicly? Is climate change financing used to make the comparable projects viable?
- b) Use of peer-reviewed programs for: calculating changes in carbon stocks (e.g., CO2Fix or Century): and predicting future land use trends (GEOMOD³³ or FRCA³⁴).
- c) Other tools may include local models, default baseline factors for the region, analysis of historical data, published deforestation rates, existing development plans, or other peer-reviewed models.
- d) Remote sensing techniques and Geographical Information Systems (GIS) can detect and measure past and current rates of land cover change and project rates and types of change into the future.
- e) *Baselines for CDM and JI Projects – Standardisation of Select Baseline Aspects* by the Hamburg Institute of International Economics (HWWA), http://ijq.wiwo.nl/probase/prob_fr.pdf
- f) The CDM will soon have approved methodologies for land use baselines³⁵, <http://cdm.unfccc.int/methodologies/ARmethodologies>
- g) Wollenberg, L., D. Edmunds and L. Buck. *Anticipating Change: Scenarios as a Tool for Adaptive Forest Management*. CIFOR.2000., www.cifor.cgiar.org/acm/methods/fs.html
- h) Brown, S. et al. 2008. Reducing greenhouse gas emissions from deforestation and degradation in developing countries: a Sourcebook of methods and procedures for monitoring, measuring, and reporting. <http://www.gofc-gold.uni-jena.de/redd/>
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G3. Project Design and Goals

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³⁴ For more information on FRCA please contact the Global Climate Change Initiative at The Nature Conservancy, <http://nature.org/initiatives/climatechange/>.

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- o) R.J. Klein, E.L. Schipper, & S. Dessai. 2003. *Integrating Mitigation and Adaptation into Climate and Development Policy: Three Research Questions*. Tyndall Centre Research Paper #40, www.tyndall.ac.uk/publications/working_papers/wp40.pdf

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G5. Property Rights

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- d) Land Tenure Center, University of Wisconsin-Madison, <http://www.ies.wisc.edu/ltc/index.html>
- e) Involuntary Resettlement and the World Bank: <http://lnweb18.worldbank.org/ESSD/sdvext.nsf/65ParentDoc/InvoluntaryResettlement?Opendocument>
- f) References at the University of Florida Geomatics website: www.surv.ufl.edu/6905-landtenure/

G6. Legal Status

- a) During the project design phase, project proponents should communicate early on with relevant local, regional and national authorities, providing adequate time to earn the necessary approvals.
- b) The project design should be flexible enough to accommodate potential modifications required to secure regulatory approval.
- c) *Legal Issues Guidebook to the Clean Development Mechanism*. UNEP. <http://www.cd4cdm.org/Publications/CDM%20Legal%20Issues%20Guidebook.pdf>
- d) Appendix A G.6. Certified Emission Reductions Sale and Purchase Agreement (CERSPA). This is a free, open-source contract template for buying and selling Certified Emission Reductions (CERs) generated under the Kyoto Protocol's Clean Development Mechanism (CDM). Available at: www.cerspa.org
- e) UN Treaty website database <http://untreaty.un.org>

G7. Adaptive Management and Knowledge Dissemination

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- b) Lee, K. N. 1999. *Appraising Adaptive Management*. Conservation Ecology 3(2): 3., <http://www.consecol.org/vol3/iss2/art3/>
- c) Salafsky, N., R. Margoluis, and K. Redford. *Adaptive Management: A Tool for Conservation Practitioners*. Washington, D.C.: Biodiversity Support Program, http://fosonline.org/resources/Publications/AdapManHTML/Adman_1.html
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- e) Lee, K. 1999. Appraising Adaptive Management. <http://www.ecologyandsociety.org/vol3/iss2/art3/>

- f) Nyberg B., 1999. *An Introductory Guide to Adaptive Management for Project Leaders and Participants*. BC Forest Services Branch.
<http://www.for.gov.bc.ca/hfp/amhome/Pubs/Introductory-Guide-AM.pdf>
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- h) Stand Management Cooperative, University of Washington, College of Forest Resources
www.cfr.washington.edu/research.smc. This cooperative is an example of a regional database focused on high quality information on long-term effects of silvicultural treatments, treatment regimes on stand and tree growth and development and wood and product quality.

CL1. Net Positive Climate Impacts

- a) Intergovernmental Panel on Climate Change, 2006. *Guidelines for National Greenhouse Gas Inventories Volume 4 Agriculture, Forestry and Other Land Use* <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>
- b) Intergovernmental Panel on Climate Change. *Good Practice Guidance for Land Use, Land-Use Change, and Forestry*, (especially Chapter 4.3 on LULUCF projects) www.ipcc-nggip.iges.or.jp/public/gpگلulucf/gpگلulucf_contents.htm. Also, see other references therein.
- c) The Land Use, Land-Use Change, and Forestry (LULUCF) Guidance for GHG Project Accounting (LULUCF Guidance), <http://www.wri.org/publication/land-use-land-use-change-and-forestry-guidance-greenhouse-gas-project-accounting>
- d) California Climate Action Registry Forestry Protocols for measuring carbon fluxes, www.climateregistry.org/PROTOCOLS.
- e) CDM website (<http://cdm.unfccc.int>).
- f) CDM and JI Validation & Verification Manual, developed by the International Emissions Trading Association (IETA) and the World Bank Carbon Finance Group:
www.ieta.org/ieta/www/pages/index.php?IdSiteTree=1146
- g) Brown S., 1997. *Estimating Biomass and Biomass Change of Tropical Forests: a Primer*. (FAO Forestry Paper - 134). <http://www.fao.org/docrep/W4095E/W4095E00.htm>
- h) Pearson, T., Walker, S., and Brown, S. 2006. Guidebook for the formulation of Afforestation and reforestation projects under the Clean Development Mechanism.
http://www.itto.or.jp/live/Live_Server/2863/ts25e.pdf
- i) Tool For Afforestation Reforestation Approved Methodologies (TARAM). CATIE and World Bank BioCarbon Fund. 2008. available at
<http://carbonfinance.org/Router.cfm?Page=BioCF&ItemID=9708&FID=9708>

CL2. Offsite Climate Impacts (“Leakage”)

- a) Control plots can be used to compare carbon stock changes within a project area to those on surrounding lands.
- b) Monitoring changes in areas without fixed plots can also provide insight into potential leakage.
- c) Leakage contracts can be used, e.g., requiring timber concessionaires not to exceed logging quotas on non-project lands and to adopt sustainable harvesting regimes.
- d) Projects that incorporate a variety of activities in an integrated and holistic manner may reduce the likelihood of generating negative leakage (see G3).
- e) Schwarze, R., J. Niles, & J. Olander. 2002. *Understanding and Managing Leakage in Forest-Based Greenhouse Gas Mitigation Projects*. *Philosophical Transactions of the Royal Society, Series A* 1797:1685-1703. www.ghgprotocol.org/docs/carbon-leak.pdf

- f) Auckland, L., Moura Costa, P. and S. Brown. 2003. A conceptual framework for addressing leakage on avoided deforestation projects.
http://www.ecosecurities.com/Assets/3151/Pubs_A%20conceptual%20framework%20for%20addressing%20leakage%20on%20avoided%20deforestation%20projects.pdf
- g) Murray, B.C., McCarl, B.A., and Lee. H. 2004. Estimating Leakage from Forest Carbon Sequestration Programs. *Land Economics* 80(1):109-124.
<http://le.uwpress.org/cgi/content/abstract/80/1/109>
- h) Tool For Afforestation Reforestation Approved Methodologies (TARAM). CATIE and World Bank BioCarbon Fund. 2008. available at
<http://carbonfinance.org/Router.cfm?Page=BioCF&ItemID=9708&FID=9708>

CL3. Climate Impact Monitoring

- a) Standard techniques for field measurements of vegetation and soil should be used based on accepted protocols.
- b) Intergovernmental Panel on Climate Change. *Good Practice Guidance for Land Use, Land-Use Change, and Forestry*, www.ipcc-nggip.iges.or.jp/public/gpoglulucf/gpoglulucf_contents.htm. Also, see other references therein.
- c) Pearson, T, Walker, SM, Brown, S. 2006.. Sourcebook for Land use, Land use change, and Forestry Projects. BioCarbon Fund, World Bank.
<http://www.winrock.org/ecosystems/tools.asp?BU=9086>
- d) Pearson, TRH, Brown, SL., Birdsey, RA. 2007. Measurement guidelines for the sequestration of forest carbon. USDA Forest Service General Technical Report NRS-18.
http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs18.pdf
- e) The following CDM EB tool can be used to test the significance of emissions sources:
http://cdm.unfccc.int/EB/031/eb31_repan16.pdf

CM1. Net Positive Community Benefits

- a) Colfer, C. J. P. (ed.). 2005. *The Equitable Forest: Diversity, Community, and Resource Management*. RFF, Washington DC (USA).
- b) The International Council on Mining and Metals (ICMM) indicators on community engagement:
http://www.icmm.com/community_development.php
- c) The Access Initiative. 2003. *Assessing Access to Information, Participation, and Justice for the Environment: A Guide*. WRI, Washington DC (USA)
http://pubs.wri.org/pubs_description.cfm?PubID=3814
- d) Stec, Stephen. 2003. *Handbook on Access to Justice under The Aarhus Convention*. REC, Szentendre (Hungary). <http://www.elaw.org/resources/text.asp?id=1940>
- e) Frank Ellis, 2000. *Rural Livelihoods and Diversity in Developing Countries*. Oxford University Press.
- f) Livelihoods Connect (Sustainable Livelihoods ToolBox, Learning Guide, Key Documents):
www.livelihoods.org
- g) The Sustainable Livelihoods Approach. www.ifad.org/sla/
- h) Kath Pasteur, 2001. *Tools for Sustainable Livelihoods: Livelihoods Monitoring and Evaluation*. IDS, <http://www.livelihoods.org/info/tools/Pas-ME01.rtf>
- i) Case Studies of Monitoring Livelihoods Impact, <http://www.livelihoods.org/lessons/lessons.html>

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http://pqdl.care.org/pv_obj_cache/pv_obj_id_8A7F2883250B950EFE54587EE785726E169E2B00

CM2. Offsite Stakeholder Impacts

- a) Borrini-Feyerabend, G. (ed.). 1997. *Beyond Fences: Seeking Social Sustainability in Conservation*. IUCN, Gland (Switzerland).
www.iucn.org/themes/spg/Files/beyond_fences/beyond_fences.html
- b) Also, see references under CM1.

CM3. Community Impact Monitoring

- a) Jain, S.P. and W. Polman. 2003. *A Handbook for Trainers on Participatory Local Development*. FAO, RAP publication 2003/07.
http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/006/AD346E/ad346e0e.htm
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<http://www.worldwildlife.org/bsp/bcn/learning/Lessons/lesson1/bsp.htm#Keeping>
- c) Community Based Natural Resource Management (CBNRM) toolkit (http://web.idrc.ca/en/ev-3244-201-1-DO_TOPIC.html)
- d) The World Bank, May 2003. A Users guide to Poverty and Social Impact Assessment. Annex: Economic and Social Tools for Poverty and Social Analysis http://siteresources.worldbank.org/EXTSOCIALDEV/Resources/3177394-1167940794463/PSIAUsersGuideAnnexEnglishMay_2003.pdf
- e) Also, see references under CM1.

B1. Net Positive Biodiversity Impacts

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- b) G. K. Meffe and C. R. Carroll. 1997. *Principles of Conservation Biology, 2nd Edition*. Sinauer Associates, Inc. Sunderland, MA.
- c) B. G. Savitsky and T. E. Lacher, Jr. (eds.). 1998. *GIS Methodologies for Developing Conservation Strategies*. Colombia University Press, NY.
- d) G.M. Mace, A. Balmford, J.R. Ginsberg, 1999. *Conservation in a Changing World*. Cambridge University Press.
- e) IUCN. The IUCN Red List Categories and Criteria, Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK,
www.iucnredlist.org/info/categories_criteria.html
- f) www.iucnredlist.org (searchable by country)
- g) www.cites.org (searchable by country for species threatened through international trade)

- h) Talk to appropriate regulatory groups and consult national databases for additional lists of threatened species.
- i) Global Invasive Database, developed by the IUCN/SSC Invasive Species Specialist Group (ISSG) as part of the global initiative on invasive species led by the Global Invasive Species Programme (GISP). <http://issg.appfa.auckland.ac.nz/database/welcome/>
- j) Center for Invasive Plant Management <http://weedcenter.org/index.html>
- k) Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. *An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity. Version 1*. NatureServe, Arlington, Virginia. <http://www.natureserve.org/getData/plantData.jsp>
- l) Haysom, K.A. and Murphy, S.T. 2003. *The status of invasiveness of forest tree species outside their natural habitat: a global review and discussion paper*. Forest Health and Biosecurity Working Paper FBS/3E. Forestry Department. FAO, Rome (unpublished). http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/006/J1583E/J1583E00.HTM
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- n) Hagan, John M. 2004. *Identification of core biodiversity indicators to apply to sustainable forestry*. National Council on Science for Sustainable Forestry, Washington, D.C. <http://www.ncseonline.org/NCSSF/page.cfm?fid=2687#tools>
- o) National Council for Air and Stream Improvement, Inc. (NCASI). 2003. *Wildlife and Biodiversity Metrics in Forest Certification Systems*. Technical Bulletin No. 0857. Research Triangle Park, NC: National Council for Air and Stream Improvement, Inc. <http://www.ncasi.org/publications/Detail.aspx?id=81>

B2. Offsite Biodiversity Impacts

- a) Lambeck, R. and Hobbs, R.J. (2002) *Landscape and regional planning for conservation: Issues and practicalities*, in *Applying Landscape Ecology in Biological Conservation*. New York, USA: Springer-Verlag, pp.360-380.
- b) Van der Sluis, T., M. Bloemmen, I.M. Bouwma, 2004. *European Corridors: Strategies for corridor development for target species*. Alterra, Wageningen University and Research Centre, Netherlands. http://www.alterra.wur.nl/webdocs/internet/corporate/prodpubl/boekjesbrochures/ecnc_compleet.pdf
- c) Opdam P., Foppen R., Vos C, 2002. *Bridging the gap between ecology and spatial planning in landscape ecology*. *Landscape Ecology* 16: 767–779, 2002. http://lem1.asu.edu/jingle/Landscape_Ecology/PDFs/Applications/Opdam_Foppen_Vos.2001.pdf
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- b) NCASI. 2004. *Managing Elements of Biodiversity in Sustainable Forestry Programs: Status and Utility of NatureServe's Information Resources to Forest Managers*. NCASI Tech. Bull. 0885. Research Triangle Park, NC. <http://www.ncasi.org/Publications/Detail.aspx?id=2603>

GL1. Exceptional Community Benefits

- a) Poverty Mapping: PovertyNet, The World Bank <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/0,,contentMDK:21517522~isCURL:Y~menuPK:336998~pagePK:148956~piPK:216618~theSitePK:336992,00.html>
- b) Poverty Measurement and Analysis: PovertyNet, The World Bank <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPRS/0,,contentMDK:20177055~pagePK:210058~piPK:216618~theSitePK:384201,00.html>
- c) Inter-country Comparisons of Poverty Based on a Capability Approach: An Empirical Exercise <http://www.undp-povertycentre.org/pub/IPCWorkingPaper27.pdf>.
- d) The World Bank Institute, August 2005. Introduction to Poverty Analysis: <http://siteresources.worldbank.org/PGLP/Resources/PovertyManual.pdf>
- a) The World Bank, May 2003. A Users guide to Poverty and Social Impact Assessment. Annex: Economic and Social Tools for Poverty and Social Analysis http://siteresources.worldbank.org/EXTSOCIALDEV/Resources/3177394-1167940794463/PSIAUsersGuideAnnexEnglishMay_2003.pdf
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- c) Beerlandt, H. and S. Huysman. IFAD/Belgian Survival Fund, 1999. Manual for the Bottom-up-Approach in Food Security Interventions: Analysis of Target Groups http://www.ifad.org/gender/tools/hfs/bsfpub/manual_toc.htm
- d) CARE, July 2002. Household Livelihood Security Assessments. A Toolkit for Practitioners: http://pqdl.care.org/pv_obj_cache/pv_obj_id_8A7F2883250B950EFE54587EE785726E169E2B00
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- f) Food for the Hungry, March 2006. Community Vulnerability to Food Insecurity: Assessment Methodology: http://www.foodsecuritynetwork.org/resources/foodsecurity/fh_community_vulnerability_to_food_insecurity_assessment_methodology.doc
- g) Food and Nutrition Analysis (FANTA). New Approaches for Measuring Household Food Insecurity and Poverty: Adaptation of US Household Food Security Scale to Developing Country Contexts: <http://www.fantaproject.org/publications/hfss.shtml>
- h) Food Security Network (Food for the Hungry and USAID) resource page: <http://www.foodsecuritynetwork.org/resources/foodsecurity.html>
- i) Food Insecurity and Vulnerability Information and Mapping Systems (FAO website dedicated to larger scale mapping of poverty and vulnerability): <http://www.fivims.net/>
- j) The Ten Seed Technique: a modified participatory learning and action (PLA) technique. Ravi Jayakaran. 2002. <http://www.entrepreneursdumonde.org/pratiques/files/Ten-Seed%20Technique.pdf>

GL2. Exceptional Biodiversity Benefits

- a) Langhammer, P.F., Bakarr, M.I., Bennun, L.A., Brooks, T.M., Clay, R.P., Darwall, W., De Silva, N., Edgar, G.J., Eken, G., Fishpool, L.D.C., Fonseca, G.A.B. da, Foster, M.N., Knox, D.H., Matiku, P., Radford, E.A., Rodrigues, A.S.L., Salaman, P., Sechrest, W., and Tordoff, A.W. 2007. Identification and gap analysis of Key Biodiversity Areas: Targets for comprehensive protected

area systems. Best Practice Protected Areas Guidelines Series No. 15. IUCN, Gland, Switzerland. www.iucn.org/dbtw-wpd/edocs/PAG-015.pdf

- b) Ricketts, T.H., Dinerstein, E., Boucher, T., Brooks, T.M., Butchart, S.H.M., Hoffmann, M., Lamoreux, J., Morrison, J., Parr, M., Pilgrim, J.D., Rodrigues, A.S.L., Sechrest, W., Wallace, G.E., Berlin, K., Bielby, J., Burgess, N.D., Church, D.R., Cox, N., Knox, D., Loucks, C., Luck, G.W., Master, L.L., Moore, R., Naidoo, R., Ridgely, R., Schatz, G.E., Shire, G., Strand, H., Wettengel, W. and Wikramanayake, E. 2005. Pinpointing and preventing imminent extinctions. *Proceedings of the National Academy of Sciences* 51: 18497-18501
- c) Alliance for Zero Extinction <http://www.zeroextinction.org/>

GL3. Climate Change Adaptation Benefits

- a) Although the magnitude of the impacts of climate change remains speculative, there are several scientific tools that predict regional impacts from likely future climate change. For particular regions, these models may show, for instance, increased flooding or droughts, more extreme weather events, changes in temperature and rainfall, and other stresses to ecosystems.
- b) Regional climate projection tools may be available for some areas.
- c) The recommended modeling tool is Maxent because of its ease of implementation and performance.
- d) Recommended climatologies are IPCC4 A1 or A2 scenarios, Hadley or Japan high resolution GCM, downscaled to 1km (also available on the internet at www.worldclim.org).
- e) Materials on FAO website on climate change adaptation http://www.fao.org/clim/adaptation_en.htm.
- f) CHF – Partners in Rural Development. July 2007. Ethiopia, the path to self resiliency. <http://www.chf-partners.ca/publications/documents/Report.pdf>

Appendix B

Glossary

Adaptive Management – Is a philosophy that accepts that management must proceed even without complete information. It views management not only as a way to achieve objectives, but also as a process for probing to learn more about the resource or system being managed. Learning is an inherent objective of adaptive management. Adaptive management is a process where policies and activities can adapt to future conditions to improve management success.

Additionality – Environmental or emissions additionality refers to the carbon accounting procedures being established under the Kyoto Protocol, whereby projects must demonstrate real, measurable, and long-term results in reducing or preventing carbon emissions that would not have occurred in the absence of CDM activities. Proof of additionality is critical because developing countries do not have legally binding reduction commitments by which to judge changes in national baselines.

Baseline – The baseline represents forecasted conditions (whether carbon-, community- or biodiversity-related) under a business-as-usual or “without project” scenario (i.e., had the project activities not been implemented). Often referred to as the “baseline scenario” or “reference scenario”.

Biodiversity – the variability among living organisms from all sources including, inter alia, terrestrial, marine & other aquatic ecosystems and the ecological complexes of which they are part; this include diversity within species, between species and of ecosystems³⁶.

Carbon Dioxide (CO₂) – Roughly 3.7 units of CO₂ equal one unit of carbon (C). CO₂ plays a critical role in creating and regulating the earth’s climate (see Greenhouse Gas).

Carbon Dioxide Equivalent (CO₂e) – Is the universal unit of measurement used to indicate the global warming potential of each of the seven greenhouse gases. It is used to evaluate the impacts of releasing (or avoiding the release of) different greenhouse gases. The Global Warming Potentials (GWP) of the three GHGs associated with forestry are as follows. CO₂ persists in the atmosphere for about 200-450 years and its GWP is defined as 1. Methane persists for 9-15 years and has a GWP of 22 (meaning that it has 22 times the warming ability of carbon dioxide). Nitrous oxide persists for about 120 years and has a GWP of 310.

Carbon Pools – A reservoir of carbon. A system that has the capacity to accumulate or release carbon. Carbon pools are measured in terms of mass (e.g., metric tons of carbon). The major carbon pools associated with forestry projects are: live biomass (including above and below ground components, i.e., roots), dead biomass, soil, and wood products.

Carbon Sinks – Any process, activity or mechanism that results in the net removal of greenhouse gases from the atmosphere.

Carbon Stocks – The quantity of carbon held within a pool at a specified time.

Carbon Source – Opposite of carbon sink. A carbon pool is a net source of carbon to the atmosphere if less carbon is flowing into it than is flowing out of it.

C&I – see **Criteria** and see **Indicators**

Clean Development Mechanism (CDM) – Is a mechanism established by Article 12 of the Kyoto Protocol for project-based emission reduction activities in developing countries. The CDM is designed

³⁶ Article 2. Use of terms. Definition of biological diversity. Convention on Biological Diversity.
<http://www.cbd.int/convention/>

to meet two main objectives: to address the sustainable development needs of the host country, and to increase the opportunities available to Treaty Parties to meet their reduction commitments. Under the CDM, Annex I (industrialized) countries can accrue “certified emission reduction units” (CERs), which are tradable carbon “credits”, in return for financing carbon reduction project activities in non-Annex I (developing countries) that help further their sustainable development. For more information visit: <http://cdm.unfccc.int>

Climate Change Mitigation – The reduction of greenhouse gas (GHG) emissions to achieve stabilization of GHG concentrations in the atmosphere and subsequently a cessation of further warming.

Communities – For the purposes of the CCB Standards, ‘communities’ are defined as all groups of people including indigenous peoples, mobile peoples and other local communities, who live within or adjacent to the project area as well as any groups that regularly visit the area and derive income, livelihood or cultural values from the area. This may include one or more groups that possess characteristics of a community, such as shared history, shared culture, shared livelihood systems, shared relationships with one or more natural resources (forests, water, rangeland, wildlife etc), and shared customary institutions and rules governing the use of resources.

Convention on the International Trade in Endangered Species (CITES) – International agreement among 167 governments aiming to ensure that cross-border trade in wild animals and plants does not threaten their survival. The species covered by CITES are listed in three Appendices, according to the degree of protection they need. For more information visit: www.cites.org.

Criteria (singular **Criterion**) – A standard on which a judgment or decision can be based. The CCB Standards are broken down into 23 discrete criteria (comprising fifteen required criteria and eight optional “point-scoring” criteria).

Ecosystem – a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. Article 2. Use of terms. Convention on Biological Diversity. <http://www.cbd.int/convention/>

Endemic species – Species for which the entire global range is restricted to the site, the region or the country (the level of endemism must be defined).

Evaluator – A recognized, qualified and independent professional who evaluates which of the individual CCB Standards criteria are satisfied by the project in question. Based on this determination, the project may earn CCB Standards approval or, in exceptional cases, achieve “silver” or “gold” status. Given that investments in carbon offset projects are likely to take place before projects are initiated, it is important that *ex ante* (i.e., “beforehand”) validation assessments are performed, such as through the use of the CCB Standards.

GMO – Genetically Modified Organism

Good Practice Guidance (GPG) – Refers to the IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry (LULUCF). The *GPG-LULUCF* assists in producing inventories for the land use, land-use change and forestry sector that are not overestimates, so far as can be judged, and in which uncertainties are reduced as far as practicable. It supports the development of inventories that are transparent, documented, consistent over time, complete, comparable, assessed for uncertainties, subject to quality control and quality assurance, and efficient in the use of resources. For more information visit: www.ipcc-nggip.iges.or.jp/public/gpqlulucf/gpqlulucf.htm

Greenhouse Gases (GHG) – Greenhouse gases are gaseous components of the atmosphere that trap infrared heat and contribute to the Earth’s greenhouse effect. In addition to carbon dioxide (CO₂), prominent GHGs related to forests include methane (CH₄) and nitrous oxides (N₂O).

High Conservation Values - There are six main high conservation values, based on the definition originally developed by the Forest Stewardship Council for certification of forest ecosystems, but now increasingly expanded to apply to assessments of other ecosystems <http://hcvnetwork.org/>.

1. Globally, regionally or nationally significant concentrations of biodiversity values;
 - a. protected areas³⁷
 - b. threatened species³⁸
 - c. endemic species³⁹
 - d. areas that support significant concentrations of a species during any time in their lifecycle (e.g. migrations, feeding grounds, breeding areas)
2. Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;
3. Threatened or rare ecosystems⁴⁰;
4. Areas that provide critical ecosystem services (e.g. hydrological services, erosion control, fire control, and where a breakdown in these services would have serious, catastrophic or cumulative socio-economic or environmental impacts);
5. Areas that are fundamental for meeting the basic needs of local communities (e.g., for essential food, fuel, fodder, medicines or building materials without readily available alternatives); and
6. Areas that are critical for the traditional cultural identity of local communities (areas of cultural, ecological, economic or religious significance identified in collaboration with the local communities).

Indicators – Agreed list of quantitative markers for monitoring progress towards desired goals and targets. The CCB Standards include indicators under each criterion that third-party evaluators must use to determine whether the project in question satisfies that particular criterion.

Indigenous Peoples – the term ‘Indigenous Peoples’ is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- a) self identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- b) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- c) customary cultural, economic, social, or political institutions that are separate from those of the dominant society or culture; and
- d) an indigenous language, often different from the official language of the country or the region⁴¹.

Intergovernmental Panel on Climate Change (IPCC) – Established in 1988 as a special body by the UN Environment Programme and the World Meteorological Organization to provide assessments to policymakers of the results of ongoing climate change research. The IPCC is responsible for providing the scientific and technical foundation for the United Nations Framework Convention on

³⁷ Legally protected areas equivalent to IUCN Protected Area Management Categories I-VI (see <http://www.unep-wcmc.org/wdpa/> for definitions) as well as areas that have been proposed for protected area status by the relevant statutory body but have not yet been gazetted, and including areas protected under international conventions (e.g., Ramsar sites, World Heritage Sites, UNESCO Man-and-Biosphere Reserves, etc.).

³⁸ Species that qualify for the IUCN Red List threat categories of Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) – see www.iucnredlist.org and also Glossary Appendix B for more information. Additional national or regional listings should also be used where these may differ from the IUCN Red List.

³⁹ Species for which the entire global range is restricted to the site, the region or the country (the level of endemism must be defined).

⁴⁰ Includes ecosystems or associations of species (intact or not) that have always been rare and those which are now rare or greatly reduced and where intact examples are very rare even if heavily disturbed or degraded.

⁴¹ The World Bank Operational Manual, OP 4.10, July 2005, Article 4.

Climate Change (UNFCCC), primarily through the publication of periodic assessment reports (see "Second Assessment Report" and "Third Assessment Report"), posted at <http://www.ipcc.ch/>.

Invasive Species – Those non-native species which threaten ecosystems, habitats or species.

Key Biodiversity Areas - sites of global significance for biodiversity conservation that satisfy criteria based on a framework of vulnerability and irreplaceability defined in terms of species and population threat levels www.iucn.org/dbtw-wpd/edocs/PAG-015.pdf.

Vulnerability

Regular occurrence of a globally threatened species (according to the IUCN Red List) at the site: Critically Endangered (CR) and Endangered (EN) species – presence of at least a single individual; Vulnerable species (VU) – presence of at least 30 individuals or 10 pairs

Irreplaceability

A minimum proportion of a species' global population at any stage of the species' lifecycle at the site. These thresholds vary based on the following sub-criteria:

- a) Restricted-range species - species with a global range less than 50,000 km² and 5% of global population at the site; or
- b) Species with large but clumped distributions - 5% of global population at the site; or
- c) Globally significant congregations - 1% of global population seasonally at the site; or
- d) Globally significant source populations - 1% of global population at the site; or
- e) Bioregionally restricted assemblages.

Kyoto Protocol to the UNFCCC – Establishes legally binding commitments for Annex I ("developed") countries to collectively reduce GHG emissions by more than 5 percent below 1990 levels by 2008 to 2012. The Kyoto Protocol includes a set of mechanisms in addition to domestic mitigation —such as International Emissions Trading, Joint Implementation, and the Clean Development Mechanism—that allow countries to achieve their commitments. As of February 2005, over 140 countries had approved the Protocol, including all developed countries except the U.S., Australia and Monaco.

Land Use, Land-Use Change and Forestry (LULUCF) – The Kyoto Protocol rubric for land-based activities that have the potential to impact carbon stocks and emissions.

Leakage – any increase in emissions of GHGs outside the project boundary as a result of project activities.

Native – Native species are considered those that are part of the composition of a natural representative ecosystem of the area where the project site is located.

Non-native – Species occurring outside their natural range, whether accidentally or intentionally introduced.

Permanence – The longevity of a carbon pool and the stability of its stocks, given the management and disturbance environment in which it occurs. A feature of land-based carbon projects is the possibility of a reversal of carbon benefits from either natural disturbances such as fires, disease, pests, and unusual weather events; or from the lack of reliable guarantees that the original land use activities will not return after the project concludes. Strategies have been identified that mitigate potential reversals such as the non-permanence risk analysis and buffer approach adopted by the Voluntary Carbon Standard or the establishment of contingency carbon credits, insurance, conservation easements and mixed portfolios of projects.

Project – a set of actions or activities applied to a defined geographical area for specific purposes.

Project area – the area within the carbon project boundary.

Project zone – the project area and the boundaries of the adjacent communities potentially affected by the project.

Project Proponents – the entity or individual organizing, proposing or advocating a particular carbon offset project. The project proponents could be the project designer(s), developer(s) and/or investor(s), or other parties working on behalf of the project.

Project Designer – the entity performing the initial assessments necessary to initiate a carbon offset project.

Project Developer – the entity actually implementing and maintaining the carbon offset project.

Protected Area - An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means

Reforestation – Is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. According to the language of the Kyoto Protocol, for the first commitment period (2008-2012), reforestation activities are limited to reforestation occurring on lands that did not contain forest at the start of 1990.

Sequestration – The process of increasing the carbon content of a carbon pool other than the atmosphere. There are various opportunities to remove atmospheric CO₂, either through biological processes (e.g. the growth of plants and trees), or geological processes (e.g., storage of CO₂ in underground reservoirs).

Stakeholders – For the purposes of the CCB Standards, ‘other stakeholders’ are defined as groups potentially affected by the project activities that are not living on or adjacent to the project site or included in the CCB definition of communities.

Threatened species - The term “threatened” is used to describe species at risk of extinction, specifically those falling into IUCN’s threat categories of Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). The IUCN Red List of Threatened Species is the most comprehensive global standard on the status and distribution of globally threatened species. Individual species are assigned threat categories by a network of specialist groups which convene workshops to compile and review the best available information on species. The categorization of species is based on a set of explicit quantitative criteria and standards which are subject to review and continuous appraisal. Many national and local governments have developed complementary listings of threatened species, many of which contribute towards or are informed by the IUCN Red List. These are often available in national or regional reports, legislation or related policies. Where species have not been evaluated by IUCN Red List or national lists, the criteria for global (IUCN, 2001) or regional (IUCN, 2003) assessments could be used to assign a threat category to them. www.iucnredlist.org. Additional national or regional listings should also be used where these may differ from the IUCN Red List.

United Nations Framework Convention on Climate Change (UNFCCC) – The UNFCCC, along with the Convention on Biological Diversity (CBD), were two agreements to emerge from the 1992 U.N. Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil. The Kyoto Protocol emerged out of the UNFCCC and sets specific timelines and timetables for reducing industrialized nations’ GHG emissions and allows some international trading in carbon credits. For more information visit: <http://unfccc.int>

Workers – For the purposes of the CCB Standards, workers are defined as people directly working on project activities in return for compensation (financial or otherwise), including employees, contractors, and community members that are paid to carry out project-related work.