

# **Carbon markets and forest conservation: A review of the environmental benefits of REDD mechanisms**

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Prepared by

**Barney Dickson, Emily Dunning, Sheelagh Killen, Lera Miles, Nathalie Pettoirelli**



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## Executive summary

This report considers the measures that have been and might be undertaken to promote environmental co-benefits from REDD. Such measures may be linked to decisions on financing. The report surveys the measures that are found in existing REDD initiatives, including in the proposed UNFCCC REDD mechanism itself. It considers the options and opportunities for how these measures might be amended and developed in the future.

If the REDD mechanism is successful in maintaining existing forests in developing countries it is likely to deliver a range of environmental benefits, in addition to its contribution to climate change mitigation. These benefits chiefly take the form of maintaining the biodiversity and ecosystem services supported by those forests. However, the scale and identity of these benefits will depend on how REDD is designed and implemented. Moreover, there are some risks to the environment from REDD. These risks have increased with the shift to a version of REDD (commonly referred to as 'REDD+') which covers a wider range of activities.

There are two specific reasons why measures to address co-benefits from REDD are important. First, attention to co-benefits can strengthen REDD's performance as a climate mitigation mechanism. Second, addressing and avoiding negative environmental impacts from REDD can help to make REDD more politically resilient in the medium to long term. If REDD were to become associated with significant environmental harms, this could undermine the social and political support for its role in climate mitigation.

The four types of measure for addressing environmental co-benefits that are examined here are: non-binding recommendations, support, minimum standards and incentives.

It is to be expected that, either in Copenhagen, or at some point later in 2010, there will be agreement on the framework for the REDD mechanism, with the detailed elements within the framework to be worked out later. This outline agreement and what it says about co-benefits will be of crucial importance in shaping the context in which co-benefits are addressed in the future.

The report provides four conclusions.

- First, the survey of existing initiatives shows that most of the measures for addressing environmental benefits from REDD take the form of non-binding recommendations, support for capacity building and minimum standards. The use of minimum standards is found most frequently in initiatives linked to the voluntary carbon market, but may also be incorporated into the UNFCCC outline agreement on REDD. The extent to which proponents of REDD activities are faced with strong financial incentives to address co-benefits is not clear.
- Second, for all the existing initiatives there is, as yet, limited evidence available for how successful they have been in promoting environmental benefits and avoiding harms from REDD. This lack of evidence is primarily due to the fact that most of these initiatives are of recent origin. Nevertheless,

it will become increasingly important to learn from these and other experiences. Addressing co-benefits should be an iterative process that builds on earlier initiatives.

- Third, in the immediate future the key issue concerns what safeguards for environmental co-benefits are built into the outline agreement on the REDD mechanism. In addition, this agreement may leave open options for the subsequent incorporation of more detailed provisions relating to co-benefits, including provisions on monitoring.
- Fourth, national level preparation and implementation of REDD will become increasingly important for the co-benefits issue. National policies on REDD will play a central role in determining the extent to which co-benefits are promoted and harms avoided. International initiatives will need to build capacity to address co-benefits at the national level.

## 1. Introduction

The aim of this report is to develop our understanding of measures that might be undertaken to promote environmental co-benefits from REDD. Such measures may be linked to decisions on financing. The report surveys the measures that are found in existing REDD initiatives, including in the proposed UNFCCC REDD mechanism itself. It makes proposals for how these measures might be amended and developed in the future.

If the REDD mechanism is successful in maintaining existing forests in developing countries it is likely to deliver a range of environmental benefits, in addition to its contribution to climate change mitigation. These benefits chiefly take the form of maintaining the biodiversity and ecosystem services supported by those forests. However, the scale and identity of these benefits will depend on how REDD is designed and implemented. Moreover, there are some risks to the environment from REDD. These risks have increased with the shift to a version of REDD (commonly referred to as 'REDD+') which covers a wider range of activities.

For any policy it makes sense, other things being equal, to realise potential benefits and avoid potential harms. But there are two specific reasons why measures to address co-benefits from REDD are important. First, attention to co-benefits can strengthen REDD's performance as a climate mitigation mechanism. There is evidence that forests that are rich in biodiversity store more carbon and in a way that is more resilient to environmental stresses than other forests (SCBD, 2009). Second, addressing and avoiding negative environmental impacts from REDD can help to make REDD more 'politically' resilient in the medium to long term. If REDD were to become associated with significant environmental harms, this could undermine the social and political support for its role in climate mitigation. There are other examples of policy driven measures that have been called into question because of their negative environmental (and social) consequences.

The survey shows that there is a range of different types of measure for addressing co-benefits, from non-binding recommendations to minimum standards. In many cases the measures are still being put into place and there is limited experience of actual implementation.

Given some of the complexities of REDD, it is likely that a variety of measures will be needed. REDD will involve actions at multiple levels. The global mechanism, to be agreed by the UNFCCC, is likely to provide funding to countries on the basis of their performance. These countries will have to undertake action at national and sub-national level in order to deliver that performance. Thus there will be opportunities to implement measures at these different levels. Moreover, moving to the full implementation of REDD will take time and specific measures may be needed in the interim period to build the capacity of actors to address co-benefits.

There is still much to be learnt about what measures are appropriate – including the role of financing mechanisms - for promoting environmental benefits, particularly at the level of national implementation. Decisions will need to be informed by the

specific characteristics of the environmental benefits and harms that they seek promote or avoid.

This report:

- Outlines the potential environmental benefits and harms from REDD (Section 2);
- Introduces a typology of measures for addressing co-benefits (Section 3)
- Describes how co-benefits are being dealt with both in the current UNFCCC negotiations on REDD and in the CDM, making use of the typology of measures (Section 4);
- Uses the typology to survey the measures that have already been proposed or introduced in other initiatives on REDD (Section 5);
- Summarises what is known of the measures that have been introduced so far (Section 6);
- Considers the options and opportunities, the light of the phased approach to the implementation of REDD, for measures that might be adopted in the UNFCCC REDD mechanism and in other initiatives (Section 7); and
- Provides conclusions (Section 8).

## **2. Environmental benefits and harms from REDD**

In considering the environmental benefits and harms that may be realised by REDD, this report focuses on biodiversity and ecosystem services. As already noted, a successful REDD mechanism is likely to deliver significant environmental benefits. Forests, particularly humid tropical forests, provide a number of benefits to society. They are extremely rich in biodiversity (the Amazon rainforest alone hosts about a quarter of the world's terrestrial species) and provide a range of important ecosystem services. The latter include: provisioning services (e.g. timber and non-timber forest products); regulating services (water and climate regulation, at varying scales); and supporting services (nutrient cycling and soil formation).

The relationship between the individual benefits provided by maintaining forests can be complex. Biodiversity underpins the delivery of all ecosystem services. However, maintaining and increasing biodiversity does not necessarily lead to an increase in the services provided, and some services can be supplied by forests with a reduced level of biodiversity. Similarly, the fact that a forest delivers one type of ecosystem service such as water regulation may indicate little about its delivery of other services.

There are also variations in the spatial and temporal scale of the benefits provided. A forest may deliver some benefits that are global in nature (some components of biodiversity would fit into this category), others that are national or sub-national (often true of water regulation) and others that are essentially local in character (many non-timber forest products harvested by local people). In each of these cases the beneficiaries are different.

In addition to the potential benefits from REDD, there is also the risk of some environmental harms from REDD. Some of these risks are particularly associated with the proposal to include 'forest carbon stock enhancement' as one of the activities compensated under REDD+. Overall, the risks include:

- Increased conversion pressures on non-forested land, for a successful REDD mechanism will reduce the amount of forested land that is available for conversion to agriculture and other uses. This will threaten the biodiversity and ecosystem services that are currently provided by that non-forested land. (Miles & Kapos, 2008)
- Conversion of non-forest land to forests (a type of carbon stock enhancement), where this results in reductions in the biodiversity and ecosystem services that were formerly supported by that non-forest land
- Conversion of natural forests to plantations, where those natural forests are much richer in biodiversity and supply a bigger range of ecosystem services.

The extent to which these benefits and harms are realised will depend on how REDD is designed and implemented, including the measures that are employed to address the issue of co-benefits. The non-simple relationship between different benefits may mean that there are trade-offs to be made, either between the climate mitigation benefits and the co-benefits, or within the category of co-benefits. In considering what measures to propose for addressing co-benefits, it is also important to consider who the beneficiaries are (this can vary according the benefit in question) and who is paying



the costs associated with supplying that benefit. In some cases the beneficiaries will provide a potential source of compensation for the suppliers.

### 3. A typology of measures for addressing co-benefits

In this section we introduce a typology of measures for addressing co-benefits, together with some additional distinctions that assist in the survey of existing initiatives. In addition to the UNFCCC REDD mechanism itself, we distinguish four different types of REDD initiative that address co-benefits. These are:

- International initiatives
- Regional and national initiatives
- Standards for national REDD implementation
- Standards for projects linked to voluntary carbon markets

We also consider some non-REDD initiatives that may have lessons relevant to REDD co-benefits.

A range of different measures are employed by these initiatives to influence REDD actors. These are set out in Table 1 below.

*Table 1 A typology of measures for addressing co-benefits*

Measure	Description
Non-binding recommendations	These offer recommendations for how REDD activities can address co-benefits, but do not constitute mandatory requirements
Support	Support is offered for addressing co-benefits in REDD activities. This support includes financial support, technical support and capacity building. In some initiatives an activity may have an increased chance of receiving support if it addresses co-benefits. This can be termed 'preferential support'.
Minimum standards	A 'gateway' system whereby activities which meet certain minimum requirements are eligible for further benefits. The benefit could be access to funding or a certificate that confers value on the activity.
Incentives	A system where additional economic benefit is conferred in proportion to level of performance on co-benefits

In the analysis of the measures employed by different initiatives, we make use of the following further distinctions.

- *Procedural or substantive?* Is the measure aimed at putting in place procedures that will address co-benefits, or at directly improving substantive performance in delivering co-benefits?

- *Avoids harm or promotes benefits?* REDD may promote environmental benefits or it may cause some environmental harms. Measures may be designed to promote benefits, avoid harms, or both.
- *Particular harm or benefit specified?* Measures may be more or less specific about which environmental benefits (or harms) they are designed to address.
- *Is there provision for monitoring?* Some measures include a provision for monitoring performance in relation to co-benefits, while others do not.

The boundaries between the different categories that have been introduced in this section are not absolutely clear-cut. It may not always be clear which category an initiative or measure falls into. For example, some measures may have the appearance of minimum standards, but if there is no positive consequence that follows from meeting the standard (or negative consequence from not meeting it) it may, in reality, function more like a non-binding recommendation. Nevertheless, if these limitations are borne in mind, these distinctions are still useful in analysing the diversity of measures for addressing co-benefits.

#### **4. UNFCCC REDD Mechanism**

This section summarises the current state of play with regard to the negotiation of the REDD mechanism in the UNFCCC, with particular regard to environmental co-benefits. It then looks briefly at the Clean Development Mechanism under the Kyoto Protocol. It uses the typology introduced in the previous section to assess how both instruments address environmental benefits.

##### *REDD in UNFCCC – the Bali Decisions*

In December 2007, COP 13 of the UNFCCC was held in Bali, Indonesia. This meeting adopted the Bali Action Plan, which launched a process designed to adopt a decision at COP 15 on a range of issues including:

policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (Paragraph 1.(b)(iii), Decision 1/CP.13, UNFCCC, 2007).

This is what set the pathway for the negotiation of a REDD mechanism by the end of 2009. In addition to the Bali Action Plan, there was also a specific decision on reducing emissions from deforestation in developing countries (Decision 2/CP.13). In this decision there is reference to the significance of co-benefits. The preamble recognised:

that reducing emissions from deforestation and forest degradation in developing countries can promote co-benefits and may complement the aims and objectives of other relevant international conventions and agreements. (Decision 2/CP.13, UNFCCC, 2007)

This same decision provided ‘Indicative guidance’ on undertaking demonstration activities. While the relevant paragraph states that the use of such guidance should be ‘without prejudice to future decisions of the Conference of the parties’ (Decision 2/CP.13, UNFCCC, 2007), it can be noted that the guidance includes the provision that:

Demonstration activities should be consistent with sustainable forest management, noting, inter alia, the relevant provisions of the United Nations Forum on Forests, the United National Convention to Combat Desertification and the Convention on Biological Diversity. (Para 8, Annex, Decision 2/CP.13, UNFCCC, 2007)

Thus, in Decision 2/CP.13 there was recognition that REDD could provide co-benefits and encouragement for demonstration activities to note the relevant provisions of the United Nations Framework on Forests (UNFF), the United Nations Convention to Combat Desertification (UNCCD) and the Convention on Biological Diversity (CBD).

##### *REDD in UNFCCC – After Bali*

In the period since the Bali COP, the discussions on the Bali Action Plan (including the paragraph 1.(b)(iii) on REDD) have taken place under the auspices of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA). In addition, the Subsidiary Body for Scientific and Technological Advice (SBSTA), as requested by Decision 2/CP.13, has undertaken a programme of work on methodological issues relating to REDD.

The most recent document to emerge from the work of the AWG-LCA on REDD is Non-paper No. 39 (5<sup>th</sup> November 2009). The language in this paper and possible amendments to it will be discussed in Section 7. In the meantime, three features of the discussions under the UNFCCC can be noted.

First, there is considerable support for including ‘Safeguards’ for biodiversity and other environmental benefits in the framework for REDD. The most relevant part of Non-paper No. 39 is Paragraph 4(f) which states that Parties shall:

[Promote] actions that are consistent with the conservation of biological diversity [, and do not provide incentives for conversion of natural forests][, including safeguards on the conversion of natural forests] and enhance other social and environmental benefits [, including [environmental][ecosystem] services], complementary to the aims and objectives of relevant international conventions and agreements (Non-paper No. 39, Para 4(f))

The use of the verb ‘shall’ suggests that this safeguard is being put forward as a minimum standard; however, the absence of any provisions for monitoring performance on co-benefits may mean that if it was adopted in its current form it would act more like a non-binding recommendation. This paragraph addresses both benefits and, implicitly, harms (since the conversion of natural forests would be likely to harm biodiversity and ecosystem services).

Second, there is also now widespread support for REDD+. While ‘REDD’ covers reducing emissions from deforestation and forest degradation, ‘REDD+’ is taken to denote those activities, *together with* the additional activities (referred to in the Bali Action Plan) of ‘conservation, sustainable management of forests and enhancement of forest carbon stocks’. This has significant implications for co-benefits from REDD. On the one hand, the inclusion of ‘conservation’ (understood as ‘forest conservation’) makes it more likely that countries with high levels of natural forest remaining and historically low levels of deforestation, will be compensated under the REDD mechanism for maintaining those forests. That, in turn, will have positive impacts on the delivery of environmental co-benefits from those forests. On the other hand, the inclusion of ‘enhancement of forest carbon stocks’ may pose some risks for the environment, since depending on how this is carried out it may have negative effects on biodiversity and ecosystem services. One specific concern that the inclusion of ‘enhancement of carbon stocks’ has strengthened is that REDD mechanism could provide incentives for converting natural forests to plantations. The Paragraph in Paragraph 4(f) on conversion of natural forests addresses this concern.

Third, it seems likely that REDD will be introduced in a phased manner. In the early stages there is likely to be an emphasis on capacity building and the development of national plans for REDD, before the shift to results-based actions in the final stage.

This phased approach has implications for which measures for addressing co-benefits are appropriate at different times.

*The Clean Development Mechanism (CDM)*

The Clean Development Mechanism (CDM) is an instrument under the Kyoto Protocol allowing industrialised countries with a GHG reduction commitment to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. More precisely, the CDM allows emission-reduction (or emission removal) projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO<sub>2</sub>. These CERs can be traded and sold, and used by industrialized countries to a meet a part of their emission reduction targets under the Kyoto Protocol. The first commitment period of the Kyoto Protocol ends on 31 December 2012. Currently only afforestation and reforestation projects are allowed in the forestry sector and forestry projects constitute less than 1% of the CDM pipeline (Ebeling & Fehse, 2009).

For afforestation and reforestation projects the project design document must provide: detail of the environmental impacts of the proposed project activity, including the provision of documentation on the analysis of the environmental impacts (including biodiversity and natural ecosystems) inside and outside the project boundary; evidence to show an environmental impact assessment has been carried out if any negative impact is considered significant; and what remedial action will be taken (UNFCCC, 2008). This measure appears to take the form of a minimum standard designed to address environmental harms that might be caused by the project. However, the CDM legal regulations give sovereignty to the Host Party with respect to the analysis of the environmental impacts (CDM team, email communication, 5/11/2009). Thus, the implications of this measure in practice are less clear.

## **5. REDD initiatives that address co-benefits**

The initiatives that are surveyed below are divided into: international initiatives; regional and national initiatives; standards for national REDD implementation; and standards for projects linked to voluntary carbon markets. We also consider two forest certification schemes and one payment for environmental services scheme that may have lessons relevant to REDD co-benefits. For each initiative, its key features are introduced, a summary of its measures for environmental co-benefits are given (for which a table in the annex provides greater detail) and its level of implementation is described.

### ***5.1 International initiatives***

#### ***5.1.1 UN-REDD Programme***

##### Introduction

The UN-REDD Programme is a collaborative partnership between the Food and Agriculture Organisation (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). It aims to assist developing countries in ‘getting ready’ for participation in a future REDD mechanism and to support the development of guidance and standardised approaches (UN-REDD, 2008a). Countries being assisted in preparing and implementing their national REDD strategies and mechanisms include the Democratic Republic of Congo, Tanzania, Zambia, Indonesia, Papua New Guinea, Viet Nam, Bolivia, Panama, and Paraguay, which were the initial nine countries selected. In November 2009, five more countries have joined the Programme as observers: Argentina, Ecuador, Cambodia, Nepal and Sri Lanka (UN-REDD, 2009c). The UN-REDD Programme, and its multi-donor trust fund, was launched in September 2008, with funding initially committed by the Government of Norway (US\$52 million), and subsequently added to in November 2009 by the Government of Denmark (US\$2 million).

##### Summary of co-benefit measures

The UN-REDD Programme employs two types of measures to address co-benefits. Firstly, there is a minimum standard for countries to assess the key environmental issues they face in the initial planning, before the National Programme can be approved for implementation funding. Secondly and more significantly, the programme provides support for capacity building on co-benefits, as part of its overall capacity building measures, including the development of tools and analyses to support pilot countries in addressing co-benefits when implementing REDD.

##### Implementation

Of the six countries that have had their programmes approved by the UN-REDD Policy Board, the Democratic Republic of the Congo, Tanzania and Viet Nam have started implementing readiness activities (UN-REDD, 2009a).

#### ***5.1.2 Global Environment Facility (GEF) Tropical Forest Account (TFA)***

##### Introduction

The Tropical Forest Account (TFA) is an incentive mechanism that complements the Global Environment Facility's (GEF) Sustainable Forest Management (SFM) Program. It is designed to allow for early action on REDD within a more holistic SFM approach and will help contribute to the preparation and implementation of the FCPF and UN-REDD programmes, applying lessons and outcomes from previous related projects (GEF, 2009). More specifically, it aims to provide funding for countries with areas of large, mainly intact forests to establish comprehensive projects and programs based around biodiversity, land degradation and climate change, and to finance pilot projects on REDD, harmonising interventions and maximising co-benefits (GEF, 2009). These countries (17 in total) include those in the Amazon and Congo Basins, and in New Guinea and Borneo. The initiative was launched in December 2007, and draws on Global and Regional Exclusion funding from the focal areas of biodiversity, land degradation and climate change (\$30 million from the biodiversity focal area, \$10 million from the climate change focal area and \$20 million from the land degradation focal area). TFA potential could amount to US\$50 million by the end of 2009, and may become a more ambitious and innovative funding mechanism for REDD into GEF-5 (2010-13) (GEF, 2009).

#### Summary of co-benefit measures

The TFA employs two types of measures to address co-benefits. The first is support for a range of activities delivering on co-benefits, as listed in GEF's SFM Strategy for 2007-2010; these include support for schemes involving payment for environmental services (PES), improvements in forest certification and control of invasive alien species, amongst others. Secondly, there is a minimum standard stating that funding will not be provided for reforestation or habitat restoration after logging has occurred.

#### Implementation

Information on implementation is not yet available.

### *5.1.3 World Bank Forest Investment Program (FIP)*

#### Introduction

The World Bank Forest Investment Program (FIP) is an initiative aiming to mobilise increased investment on REDD, generate 'transformational change' in developing countries' forest-related policies and practices focused on promoting sustainable forest management, pilot replicable models of forest-related investment, and provide experience and feedback within UNFCCC deliberations (World Bank, 2009). The specific activities it supports are currently under discussion. It was launched in 2008 and, so far, funds have been pledged by Australia (US\$7 million grant), Norway (US\$50 million grant) and the UK (US\$100 million capital) (Climate Funds Update, 2009).

#### Summary of co-benefit measures

The FIP employs three types of measures for addressing co-benefits. Firstly, there is a minimum standard for assessing and addressing environmental impacts and supporting, measuring and monitoring the protection/enhancement of biodiversity and ecosystem services. Secondly, there is support for forest conservation, restoration, sustainable management and protection and investments outside the forest sector to reduce pressures on forests, amongst others. Thirdly, the FIP has a non-binding



recommendation to sustain biodiversity and ecosystem services, complement the CBD and contribute to multiple benefits.

#### Implementation

So far the FIP has not implemented any projects.

#### *5.1.4 World Bank Forest Carbon Partnership Facility (FCPF)*

##### Introduction

The World Bank Forest Carbon Partnership Facility (FCPF) is a facilitative mechanism comprising of two parts – readiness and carbon finance – aiming to assist developing countries (numbering 20 at the moment) in their efforts to reduce emissions from deforestation and forest degradation (FCPF, 2008). Therefore, it seeks to build the capacity of developing countries in tropical and subtropical regions and tap into any future system of positive incentives for REDD, and in some of these countries, it provides an incentive per ton of carbon dioxide emissions reduced, done through specific Emission Reductions Programs that target the drivers of deforestation and forest degradation. The initiative was launched in 2008, with a target capitalization of US\$300 million, US\$100 million of which is in the Readiness Fund and US\$200 million of which is in the Carbon Fund (FCPF, 2008).

##### Summary of co-benefit measures

The FCPF employs two measures to address co-benefits. Firstly, it gives support to projects on the basis of innovative/advanced concepts of monitoring and reporting of biodiversity protection. Secondly, it has a non-binding recommendation to “achieve benefits that go beyond climate change mitigation” (FCPF, 2008: 4).

##### Implementation

The carbon fund is not active yet, and the readiness mechanism is currently in the planning stages for the different countries; no ‘readiness packages’ have yet been implemented.

#### *5.1.5 International Tropical Timber Organisation (ITTO) Thematic Programme on Reducing Deforestation and Forest Degradation and Enhancing Environmental Services in Tropical Forests (REDDES)*

##### Introduction

The ITTO Thematic Programme on Reducing Deforestation and Forest Degradation and Enhancing Environmental Services in Tropical Forests (REDDES) is aiming to help build the capacity of member countries in order to maintain and enhance their forests’ environmental services. It offers the possibility of integrating all environmental services in primary and secondary forests within the SFM framework, since they are currently not effectively integrated (ITTO, 2009a). It is focused on capacity building, demonstration activities and subsequent scaling up in the particular areas of assessment, monitoring and verification of carbon offsets from avoided deforestation, and the establishment of biodiversity and PES schemes for local communities (ITTO, 2009a). The programme went through a pilot phase in 2008 and was launched in the second half of 2009. So far, \$US4.4 million has been pledged

(ITTO, 2009b), US\$3.9 million of which is from the Government of Norway (ITTO, 2009c), with a further \$10.6 million sought to fully fund this programme.

#### Summary of co-benefit measures

The REDDES Programme employs support measures to address co-benefits. Firstly, it gives support to projects that enhance environmental services and consider the environmental effects. Secondly, it supports capacity building for member countries to maintain and enhance their forests' environmental services.

#### Implementation

Funds were granted in August 2009 to begin implementing a project on building a voluntary carbon market scheme to promote sustainable forest management (ITTO, 2009c).

### ***5.2 Regional and national initiatives***

#### *5.2.1 Fundo Amazonia*

##### Introduction

Fundo Amazonia, or the Amazon Fund, is an initiative aiming to finance projects contributing to the prevention of deforestation, as well as to the preservation and sustainable use of the Amazon biome. Although focused on the Brazilian Amazon, the initiative may support projects in other Brazilian biomes and in other tropical countries. This fund was established in August 2008, with the Government of Norway pledging US\$1 billion up until 2015, donating US\$110 million for 2009-2010; the fund is managed by the Brazilian Development Bank (BNDES) (BNDES, 2009).

*NB: This should not be confused with <http://www.amazonfund.org/index.php>, a one-person organisation under the same name*

##### Summary of co-benefit measures

Fundo Amazonia employs one measure for addressing co-benefits. Through a support measure, funds are provided for activities that involve sustainable forest management and use, environmental control, monitoring and inspection, ecological and economic zoning, and the preservation and sustainable use of biodiversity.

##### Implementation

So far, only one project has stemmed from the Amazon Fund: a payment for environmental services scheme along the Trans-Amazonian highway in the Brazilian state of Para (Tollefson, 2009).

#### *5.2.2 The Congo Basin Forest Fund (CBFF)*

##### Introduction

The Congo Basin Forest Fund (CBFF) is an initiative aiming to complement existing activities, support transformative and innovative capacity-building relating to forest management, help local communities find livelihoods that support forest conservation, and reduce the rate of deforestation in countries that are part of the Congo Basin (CBFF, 2009a). It provides grants to support projects for 1-3 years that are in line with particular aspects of the COMIFAC convergence plan, including improving

knowledge of the resource, developing alternative livelihoods and alleviating poverty, and developing funding mechanisms. The fund was established in June 2008, with pledges of US\$100 million by the British Government and the Government of Norway (CBFF, 2009a).

#### Summary of co-benefit measures

The CBFF has one measure for addressing co-benefits: there is support for potentially though not directly addressing co-benefits, whereby funding is given to activities that provide support mechanisms for forest conservation, maintain benefits to local communities and ensure sustainable forest management.

#### Implementation experience

Six projects were awarded funding in April 2009 (CBFF, 2009b) but so far, no updates on the activities of these projects have been made available.

### *5.2.3 Programa Socio Bosque*

#### Introduction

Programa Socio Bosque, or the Forest Partners Program, is the central component of a national REDD proposal by Ecuador, aiming to protect 4 million hectares of Ecuador's native forest, reduce greenhouse gas emissions caused by deforestation and improve living conditions of the poor (Socio Bosque, 2009a). It consists of direct annual monetary incentives per hectare of forest given by the Government to individual landowners or indigenous communities who voluntarily decide to protect their native forest (Socio Bosque, 2009a). The Government of Ecuador provides funding but a trust fund has also been created for donations from other countries or organisations (Socio Bosque, 2009b).

#### Summary of co-benefit measures

Programa Socio Bosque employs one measure to address co-benefits. It has a support measure for areas which are most important for ecosystem services.

#### Implementation

The pilot programme has been targeting the Choc Manabi conservation corridor (threatened coastal humid forests in the Choco Region, Esmeraldas Province) and the Abiseo-Condor-Kutuku conservation corridor (forests of the eastern slopes of the Andes in the Amazon), both of which are key areas for conservation (Goldstein, 2008). Beyond these pilot projects, no information has yet been made available.

### *5.3 Standards for national REDD implementation*

#### *5.3.1 REDD+ Social and Environmental Standards*

##### Introduction

The REDD+ Social and Environmental Standards are currently being developed to ensure that REDD programmes and funding mechanisms respect the rights of indigenous peoples and local communities and generate significant social and biodiversity co-benefits (Climate Standards, 2009). They are designed to be used by governments, NGOs, financing agencies and other stakeholders, for government-led

programs implemented at national or state/provincial/regional level and for all forms of fund-based or market-based financing expected to arise from ongoing UNFCCC negotiations regarding a new global REDD+ regime (Climate Standards, 2009). It is expected that a draft version will be presented during COP 15 (CCBA, 2009b). The Climate, Community & Biodiversity Alliance (CCBA) and CARE International are facilitating the development process.

#### Summary of co-benefit measures

The REDD+ Social and Environmental Standards employ one type of measure to address co-benefits. It provides a number of procedural and substantive standards that must be met.

#### Implementation

Testing the use of the standards in pilot countries is planned for April 2010 (CCBA, 2009b).

### ***5.4 Standards for projects linked to voluntary carbon market***

#### *5.4.1 Climate, Community and Biodiversity (CCB) Standard*

##### Introduction

The Climate, Community and Biodiversity (CCB) Standard is a set of standards established to promote the development of forest protection, restoration and agroforestry projects through multiple-benefit land-based carbon projects (CCBA, 2008). They can be applied to any land-based carbon projects including REDD and other carbon sequestration projects (CCBA, 2008). There are no limitations regarding where projects can be located. The standard was first released in 2005, following the establishment of the Climate, Community & Biodiversity Alliance (CCBA) in 2003, which is a global partnership of leading companies and non-governmental organizations, including CARE International, Nature Conservancy and Rainforest Alliance amongst others. The Alliance is sponsored by the Blue Moon Fund, the Kraft Fund, BP and Hyundai amongst others (CCBA, 2005).

##### Summary of co-benefit measures

The CCB Standard employs one type of measure to address co-benefits. It establishes a series of mainly substantive minimum standards that a project must meet.

##### Implementation

There are currently 37 projects approved or undergoing validation across the world, mainly involving reforestation, afforestation, avoiding deforestation, protection and/or payment for ecosystem services activities (CCBA, 2009a).

#### *5.4.2 CarbonFix Standard*

##### Introduction

The CarbonFix Standard is a set of practical criteria for forestry projects, developed to ensure high-quality forestation projects across the globe (CarbonFix, 2009a). Generally, projects certified sequester carbon, restore forests and bring benefits to

local people and the environment. The standard also recognizes projects certified under FSC and CCBA, and can be combined with these to avoid duplication of effort. It was launched in December 2007 at COP 13 in Bali by CarbonFix, which is a not-for-profit organisation established to follow the Kyoto Protocol process and promote climate forestation projects as an accredited member of the UN climate process.

#### Summary of co-benefit measures

The CarbonFix Standard employs one type of measure to address co-benefits. It establishes a series of substantive minimum standards that a project must meet.

#### Implementation

CarbonFix was established in 1999 (CarbonFix, 2009b). There are currently 14 projects approved, undergoing validation or upcoming, mostly in developing countries (CarbonFix, 2009c).

### *5.4.3 Plan Vivo*

#### Introduction

Plan Vivo is a system comprising of tools, processes, guidelines and standards that enable local communities in developing countries to access PES schemes in order to sequester carbon and reduce greenhouse gas emissions (Plan Vivo, 2009b). One Plan Vivo certificate represents the long-term sequestration or reduction of one tonne of carbon dioxide, plus additional environmental and social benefits. The scheme aims to empower communities to take control of their own resources and break negative cycles of poverty and degradation of natural resources (Plan Vivo, 2008). It was set up in 1997, by BioClimate Research and Development, a non-profit organisation responsible for the development and maintenance of the Plan Vivo system, whilst the Edinburgh Centre for Carbon Management provides specialist expertise in the assessment of projects (Plan Vivo, 2009a). Funding primarily comes from a levy imposed on the issuance of Plan Vivo Certificates and project and reseller registration fees but donations, grants and funding contributions from the private and public sector may also be received (Plan Vivo, 2008). The money paid for these certificates goes directly into the specified project trust fund (Plan Vivo, 2009b).

#### Summary of co-benefit measures

Plan Vivo employs one type of measure to address co-benefits. It establishes a series of substantive minimum standards that a project must meet.

#### Implementation

Currently there are 3 projects in Mexico, Uganda and Mozambique (Plan Vivo, 2009c).

### *5.4.4 SocialCarbon*

#### Introduction

SocialCarbon is a standard developed to provide a transparent way of measuring social and environmental gains from projects reducing GHG emissions that are part of the voluntary carbon market (SocialCarbon, 2009a). It establishes criteria for the

monitoring of social and environmental impacts of projects but not for emission reductions themselves. Projects have so far all been in Brazil but are not restricted to Brazil. The standard was developed in 1998 by the Ecologica Institute (a non-profit Brazilian NGO specializing in climate change) (SocialCarbon, 2009a).

#### Summary of co-benefit measures

The SocialCarbon Standard employs one type of measure to address co-benefits. It has a number of minimum standards that a project must meet.

#### Implementation

There are currently 26 projects, all of them in Brazil (SocialCarbon, 2009b).

### *5.4.5 Voluntary Carbon Standard (VCS)*

#### Introduction

The Voluntary Carbon Standard (VCS) is a global standard for the voluntary offset market, created in order to standardize, provide transparency and credibility to and enhance confidence in the voluntary offset market (VCS, 2009a). It includes, amongst other things, Agriculture, Forestry and Other Land Uses (AFOLU) in its list of eligible activities, which incorporates afforestation, reforestation and revegetation, agricultural land management, improved forest management and REDD. It was established in 2006 by The Climate Group, the International Emissions Trading Association and the World Economic Forum (VCS, 2009a), though there have been different versions of the standard since then with the newest released in 2007. Funding comes from these founding organisations and from a levy for gaining VCU registration.

#### Summary of co-benefit measures

The Voluntary Carbon Standard employs one type of measure to address co-benefits. It establishes two minimum standards that a project must meet. The VCS also allows projects to be independently validated under the CCB standards to show quality across multiple dimensions.

#### Implementation

The VCS currently has one project approved that relates to forestry activities (VCS, 2009b).

## **5.5 REDD-relevant initiatives**

### ***5.5.1 Certification schemes***

#### ***5.5.1.1 Forest Stewardship Council (FSC)***

#### Introduction

The Forest Stewardship Council (FSC) is an independent, non-governmental, not-for-profit organization responding to concerns over global deforestation (FSC, 2009a). FSC is linked to a certification system that provides internationally recognized standard-setting, trademark assurance and accreditation services to companies, organisations, and communities interested in responsible forestry (FSC, 2009a). The FSC aims to promote environmentally responsible, socially beneficial and

economically viable management of the world's forests (FSC, 2009b). Indeed, it is the only certification system in forestry recognized by ISEAL (the global association for social and environmental standards systems) to follow best-practice in standard-setting (FSC, 2009a). FSC is currently nationally represented in more than 50 countries around the world (FSC, 2009a). It is not a certification system set up specifically for REDD projects but FSC is now exploring the role it can play in forest carbon verification activities including REDD; in 2008 the FSC set up a Forest Carbon Working Group to research and advise on forest-based carbon initiatives, following a policy motion passed to explore FSC's role in frameworks to mitigate climate change (FSC, 2009c). The FSC was established in 1993. Its funding comes from charities, government donors and business contributors (34% of funds in 2007) and from membership, accreditation and other fees (66% of funds in 2007) (FSC, 2009a).

#### Summary of co-benefit measures

The FSC employs one type of measure to address co-benefits. It establishes a series of substantive and procedural minimum standards that a project must meet.

#### Implementation

In July 2009, more than 100 million hectares of forest were certified to FSC standards, totalling over 13,500 certificates, distributed in over 82 countries (FSC, 2009d).

### *5.5.1.2 Programme for the Endorsement of Forest Certification (PEFC)*

#### Introduction

The Programme for the Endorsement of Forest Certification (PEFC) Council is an independent, non-profit, non-governmental organisation, which provides an assurance mechanism to purchasers of wood and paper products that they are promoting the sustainable management of forests through independent third party certification (PEFC, 2009). It assesses national forest certification schemes as part of a multi-stakeholder process. 149 governments support the scheme, thus covering 85% of the world's forest area, making PEFC the world's largest certification system (PEFC, 2009). PEFC was initially focused on forest certification in Europe when it was established in 1999 but has since expanded across the world.

#### Summary of co-benefit measures

The PEFC employs one type of measure to address co-benefits. It has three minimum standards that a project must meet.

#### Implementation

PEFC has 35 independent national forest certification systems as part of its membership, of which 25 have currently been through a rigorous assessment process, which involves public consultation and the use of independent assessors. These 25 systems account for more than 200 million hectares of certified forests (PEFC, 2009).

### *5.5.2 National PES scheme*

### 5.5.2.1 FONAFIFO

#### Introduction

The Fondo Nacional de Financiamiento Forestal (FONAFIFO), or National Financing Fund, is an agency launched to establish a formal country-wide program of payments for environmental services (PES) in Costa Rica (Pagiola, 2007). This was in order to benefit small and medium-sized landowners whose forests are suitable for forestry activities, with the aim of promoting the conservation and recovery of the country's forest cover (OAS, 2006). The fund was established in 1997, with most funding coming from 3.5% of revenues from a fossil fuel sales tax (about US\$10 million a year). Other sources include a grant from German aid agency KfW, a loan from the World Bank and a grant from GEF through the EcoMarkets Project (2001-2006), with continued support from Mainstreaming Market Based Instruments for Environmental Management (MMBIEM) from 2007 (Pagiola, 2007). FONAFIFO also raise funds through selling certificates for environmental services to individuals and businesses (FONAFIFO, 2009a).

#### Summary of co-benefit measures

FONAFIFO employs types of measure to address co-benefits. It has a procedural minimum standard regarding the development of a sustainable forest management plan and it offers support for projects the address certain biodiversity and ecosystem service issues.

#### Implementation

An initial investment of US\$14 million in PES resulted in reforestation of 6,500 hectares, sustainable management of 10,000 hectares of natural forests and the preservation of 79,000 hectares of private natural forests (Nasi et al, 2002 referred to by OAS, 2006). 270,000 hectares, about 5% of Costa Rica's entire national territory and 10% of its forest cover, were enrolled in the PES scheme as of 2005 (Pagiola, 2007).



## **6. Summary of measures that have been used**

We have seen that there are a range of initiatives that employ different types of measures to encourage REDD actors to address co-benefits. Some but not all of these measures are linked to financing.

The design of the UNFCCC REDD mechanism has not yet been decided on. Nevertheless, it does seem that the framework of the mechanism will include certain general 'safeguards' for some environmental benefits. The formulations that are currently being considered might appear to suggest that they will act as minimum standards that all Parties will be required to meet. However, if there are no provisions for monitoring whether these safeguards are being met, it is more likely that these safeguards will become, *de facto*, non-mandatory.

The international initiatives that address co-benefits fall into two categories. First there are those (e.g. World Bank's FCPF and UN-REDD Programme) that aim to assist countries to prepare for REDD. The co-benefits measures that they employ are chiefly support (for capacity building, planning etc) and non-binding recommendations; there is a limited use of minimum standards as well. The other types of fund are devoted to funding activities at the site of project level. Here again, they offering support and non-binding recommendations, with some evidence that the support is preferential (a project has more chance of being funded if it addresses co-benefits).

The regional and national funds that we examined here are similar to international funds of the second type in that they offer support to projects and other specific activities (rather than the development of a national programme), including support for activities that promote co-benefits (with some evidence of preferential support).

The CCBA national standard is still in its early stages of development. What it offers is a set of minimum standards which a national REDD programme should satisfy. It appears that these standards will function in the first instance as non-binding recommendations. Nevertheless, the idea of developing standards for national level programmes is likely to become increasingly important, especially if it is confirmed that REDD will be a national level scheme.

The initiatives linked to the voluntary carbon market that address co-benefits are focused on projects. They make use of minimum standards that must be met. The standards themselves are much more specific than are used in other initiatives. In some cases they involve a combination of a general objective (e.g. there should be a net environmental gain) with specific prohibitions, that limit the trade-offs that can be made. There is evidence that certification from these schemes provides a financial premium although it is not yet clear how strong an incentive this provides to project proponents in practice. It is also the case that such projects currently and probably in the future are likely to represent only a very small fraction of the forests covered by REDD. Nevertheless, potentially they provide important lessons on mechanisms to promote co-benefits at the project level.

These different initiatives cover a range of different benefits and harms. The provisions in the UNFCCC discussions and in the international initiatives are typically general and cover both harms and benefits. Measures in initiatives linked to

the voluntary carbon market are much more specific and detailed – as is appropriate for projects. In general there is most emphasis on biodiversity performance rather than other environmental benefits. And most attention is paid to the benefits and harms that may arise from the core REDD activities of reducing deforestation and degradation, rather than those that may be associated with the REDD+ activities.

The measures for addressing co-benefits are typically consistent with the provisions of relevant international conventions and agreements. Many of the measures are consistent with both the general goals of the Convention on Biological Diversity and with some of the specific Decisions adopted by Parties. This includes the Decision on Biodiversity and Climate Change which welcomes the development of REDD and notes its capacity to provide biodiversity benefits (CBD Decision IX/16). There is also compatibility with the goal of the United Nations Forum on Forests (UNFF), which states that ‘UNFF encourage and assist countries, including those with low forest cover, to develop and implement forest conservation and rehabilitation strategies, increase the area of forests under sustainable management and reduce forest degradation and the loss of forest cover in order to maintain and improve their forest resources with a view to enhancing the benefits of forests to meet present and future needs’

Overall, the initiatives that address co-benefits show use of non-binding recommendations, of support for capacity building, and minimum standards. There is limited use of direct incentives to address co-benefits, although the initiatives linked to the voluntary carbon market are intended to facilitate the use of such incentives. In all cases there is, as yet, limited evidence available for how successful these measures have been.

## 7. Options and opportunities

The two UNFCCC COP Decisions made in Bali in 2007 initiated the current phase in the development of REDD. Most of the initiatives surveyed here have been developed during this period. This phase is likely to come to an end soon. It is to be expected that, either in Copenhagen, or at some point later in 2010, there will be agreement on the framework for the REDD mechanism, with the detailed elements within the framework to be worked out later. This section discusses some of the options and opportunities for addressing environmental co-benefits within the outline agreement under the UNFCCC and in the other types of REDD initiative that have been reviewed here.

### *The UNFCCC REDD mechanism*

The starting point for the negotiations on REDD in Copenhagen is the text of Non-paper 39 (5/11/09).

The draft text in Non-paper 39 already seeks to establish a framework of guiding principles to inform the overall direction of the REDD programme. Broad guiding principles which are of potential positive value in managing environmental co-impacts include Paragraph 3(d) 'Be consistent with national sustainable development goals' and Paragraph 3(l) 'Promote [sustainable forest management]/ [sustainable management of forests]'. However, the most important guiding principle for managing environmental co-impacts is likely to be the current Paragraph 4(f).

The wording in Non-paper 39 is:

4(f) [Promote] actions that are consistent with the conservation of biological diversity [, and do not provide incentives for conversion of natural forests][, including safeguards on the conversion of natural forests] and enhance other social and environmental benefits[, including [environmental][ecosystem] services], complementary to the aims and objectives of relevant international conventions and agreements.

With regard to this paragraph, some of the key points include:

- How the safeguard on the conservation of biological diversity is formulated and, in particular, whether the verb 'promote' is used or replaced with 'ensure';
- Whether the safeguard on the conversion of natural forests is included and how this is framed;
- Whether there is explicit reference to enhancing ecosystem services. On some interpretations 'environmental services' refers to those services that are supplied even if the ecosystem is degraded, whereas 'ecosystem services' refers to those services that require a well-functioning ecosystem.

Paragraphs 5 and 6 of Non-paper 39 refer to the possible development of national action plans or strategies for REDD. There is a proposal in Paragraph 5 that in developing such action plans or strategies, Parties should take into account guidance adopted by the Conference of the Parties. It is possible that such guidance, which

would be developed at a later date, would include guidance on how to address environmental co-benefits.

In a related way, Paragraph 20(c), dealing with the financing of REDD, refers to the development of guidance and criteria on which actions can be funded. It is conceivable that such guidance could include reference to environmental co-benefits.

Finally, the section in Non-paper 39 dealing with measurement, reporting and verification refers only to greenhouse gas emission reductions and removals. Some have argued that there should also be provisions for the monitoring of performance on co-benefits.

#### *International initiatives*

International initiatives that provide support to capacity building in REDD countries, whether they develop from existing initiatives or involve new institutional arrangements, will play an increased importance in the initial phases following agreement on the framework for REDD. The focus of such capacity building is likely to be at the national level. It will be significant whether these initiatives promote capacity building to address environmental co-benefits.

If these initiatives do encourage action on co-benefits, the use of non-mandatory guidance and support mechanisms is likely to predominate. In addition to adequate financing, support to recipients might include provision of access to expert advisors, training materials and practical workshops for local staff, the dissemination of recommended best practice guidelines, methodologies and diagnostic tools and assistance with the design of procedural standards. Initial capacity-building may focus on:

- Integrating environmental co-benefit planning into national level REDD planning to ensure that the environmental safeguards included in the outline agreement of REDD are met;
- Increasing national capacity to determine the likely environmental benefits and harms resulting from different REDD implementation options and to address trade-offs between the mitigation benefits of REDD and the environmental co-benefits, and between different environmental co-benefits, while avoiding serious harms;
- Enhancing to monitor performance on co-benefits and establishing effective feedback mechanisms;
- Identifying possible sources of finance (international, national or sub-national) to reward performance on co-benefits and establishing mechanisms to allow those who bear the costs of supplying those co-benefits to be appropriately compensated.

#### *National standards for REDD implementation*

The CCBA initiative on the development of social and environmental standards for national REDD implementation is the only initiative that is currently focused on such standards. This emphasis on the national level is very important, given that REDD will be a mechanism oriented around national accounting of emission reductions and removals and that decisions at the national level will play a major part in determining

performance on co-benefits. National standards for social and environmental performance could be important in:

- Directing and guiding national implementation of REDD
- Demonstrating consistency with the safeguards incorporated in the UNFCCC outline agreement on REDD
- Demonstrating performance on co-benefits at the national level to potential additional sources of funding

Nevertheless, while this focus on the national level appears sound, it remains to be seen what role standards, per se, play in guiding performance on co-benefits. It is possible that a similar function could be played by other policy instruments.

#### *Voluntary carbon market initiatives*

Forestry projects undertaken under voluntary carbon standards are expected to continue as the UNFCCC REDD mechanism develops. The voluntary carbon markets represent a channel of private-sector funding for REDD and responds to ongoing demand from the corporate and retail sectors. The phased implementation of REDD implies that further private-sector involvement in funding of REDD is unlikely to be significantly developed before the full implementation of REDD and even then will depend on the role of the (compliance) carbon market in the financing of REDD.

Two aspects of these types of initiative can be noted. First, they provide an important source of learning with regard to co-benefits. Voluntary carbon standards incorporate the most specific substantive standards for REDD projects at site level and the ability of voluntary market approved projects to deliver anticipated outcomes in each national context should be monitored and assessed.

Second, it will also be important to consider how interactions between national REDD planning and voluntary carbon market projects will be managed. This might include, for example, deciding whether the presence of voluntary carbon market projects in a particular country should impact on the level of support provided for capacity-building and whether voluntary market co-benefits should be included in national performance measurement for REDD funding.

#### *Other initiatives*

There is a need to explore other means of providing funding to support the delivery of environmental benefits from REDD. Some of the possible options are discussed by Ebeling & Fehse (2009), including the linkage of REDD to regulated carbon markets and mechanisms for linking international biodiversity funding to REDD funding.

It is possible that if, in the future, REDD funding is derived from the regulated carbon market, some countries would seek to establish minimum standards for environmental co-benefits which would need to be met by projects in order for related REDD credits to be used for compliance purposes (following the example of, say, EU ETS minimum standards for sustainability for large hydro projects established under the EU Linking Directive.).

Another option is the provision of specific biodiversity funding to states or projects to support enhanced delivery of environmental co-benefits outside of REDD funding mechanisms.

## **Conclusions**

This report has four conclusions.

First, the survey of existing initiatives shows that most of the measures for addressing environmental benefits from REDD take the form of non-binding recommendations, support for capacity building and minimum standards. The use of minimum standards is found most frequently in initiatives linked to the voluntary carbon market, but may also be incorporated into the UNFCCC outline agreement on REDD. The extent to which proponents of REDD activities are faced with strong financial incentives to address co-benefits is not clear.

Second, for all the existing initiatives there is, as yet, limited evidence available for how successful they have been in promoting environmental benefits and avoiding harms from REDD. This lack of evidence is primarily due to the fact that most of these initiatives are of recent origin. Nevertheless, it will become increasingly important to learn from these and other experiences. Addressing co-benefits should be an iterative process that builds on earlier initiatives.

Third, in the immediate future the key issue concerns what safeguards for environmental co-benefits are built into the outline agreement on the REDD mechanism. In addition, this agreement may leave open options for the subsequent incorporation of more detailed provisions relating to co-benefits, including provisions on monitoring.

Fourth, national level preparation and implementation of REDD will become increasingly important for the co-benefits issue. National policies on REDD will play a central role in determining the extent to which co-benefits are promoted and harms avoided. International initiatives will need to build capacity to address co-benefits at the national level.

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## **Annex**

# **Measures to address environmental benefits and harms from REDD**

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
<b>UN-REDD PROGRAMME</b>					
Support	Consultations with pilot countries on their priorities and information needs; development of framework for understanding factors determining land use and land-use change and consequences for biodiversity; spatial analyses of relationship between carbon storage in forests, biodiversity and ecosystem services; development of tools for promoting synergies, addressing conflicts and managing trade-offs; international consultative workshop on co-benefits; regional training events on use of tools for assessing co-benefits (UN-REDD, 2009b)	Procedural	Avoids harm and promotes benefits	Harm and benefits to biodiversity and ecosystem services (particularly climate regulation, water regulation, timber and non-timber forest products) (UN-REDD, 2009b)	Tools and methods are being developed in order to allow for monitoring of environmental co-benefits (UN-REDD, 2008b)
Minimum standard	Countries are required to assess the key relevant environmental issues and how the Joint Programme will address them (UNDG, 2008)	Procedural	Unspecified	Unspecified	Unspecified
<b>GLOBAL ENVIRONMENT FACILITY (GEF) TROPICAL FOREST ACCOUNT</b>					
Support	Support provided for projects that remove knowledge barriers, develop institutional capacities, and establish forest policies and frameworks that integrate biodiversity conservation and sustainable use into the forest sector (GEF-4 SFM Strategy, 2007)	Procedural	Promotes benefits	Benefits - biodiversity conservation, sustainable use of forests	There are 'provisional indicators' for each expected outcome to allow for systematic monitoring, but they are detailed under different focal areas (GEF-4 SFM Strategy, 2007)
Support	Support provided for PES schemes (GEF-4 SFM Strategy, 2007)	Substantive and procedural	Avoids harm and promotes benefits	Unspecified	

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Support	Support provided for improvements to forest certification standards (GEF-4 SFM Strategy, 2007)	Procedural	Promotes benefits	Benefits – sustainable management of components of biodiversity	
Support	Support provided for prevention, control and management of invasive alien species in forests (GEF-4 SFM Strategy, 2007)	Substantive	Avoids harm	Harm - impacts of invasive alien species	
Support	Support provided to alternative livelihoods in production forests to take the pressure off biodiversity in protected areas, as long as the production forest incorporates environmental sustainability criteria (e.g. FSC certification) and biodiversity in the protected area is not undermined (GEF-4 SFM Strategy, 2007)	Substantive	Avoids harm	Harm – pressures on biodiversity	
Minimum standard	Funding not provided for reforestation/ restoration of habitat following logging operations (GEF-4 SFM Strategy, 2007)	Substantive	Avoid harm	Harm – destruction of ecosystems	Unspecified
<b>WORLD BANK FOREST INVESTMENT PROGRAM (FIP)</b>					
Minimum standard	Proposals must set out how sustainable development will be integrated into projects, by assessing and addressing environmental impacts, and how biodiversity protection and enhancement and strengthened resilience of ecosystems and associated ecosystem services will be catalysed, supported, measured and monitored (World Bank, 2009)	Procedural	Avoids harm and promotes benefits	Harm – environmental impacts Benefits – safeguarding natural forests, particularly those with high conservation value (HCV) (World Bank, 2009)	Yes – proposals must use “participatory and independent approaches to monitoring and evaluation”, including biodiversity and ecosystem benefits amongst others (World Bank, 2009: 19), to adhere with a FIP principle

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Non-binding recommendations	Countries should adhere to FIP principles i.e. generate benefits to sustain biodiversity and ecosystem services, complement the CBD, contribute to multiple benefits such as biodiversity conservation (World Bank, 2009)	Substantive	Promotes benefits	Benefits – sustenance of biodiversity and ecosystem services	of promoting measurable outcomes and results-based support
Support	Support and promotion of forest conservation, promotion of payments for environmental services and other equitable benefit-sharing arrangements, restoration and sustainable management of degraded forests and landscapes, afforestation and reforestation on previously deforested land, restructuring of forest industries and promotion of company-community partnerships, forest protection measures, improved land management practices, promotion of certification, investments outside the forest sector necessary to reduce pressure on forests (World Bank, 2009)	Substantive and procedural	Avoids harm and promotes benefits	Harm – pressures on forests, impacts of forest industries Benefits – promotion of forest ecosystem services, improved land management, certification	
Support	Investments in institutional capacity, forest governance and information	Procedural	Unspecified	Unspecified	
<b>WORLD BANK FOREST CARBON PARTNERSHIP FACILITY (FCPF)</b>					
Support	Selection criterion which focuses on “innovative and/or advanced concepts of monitoring, reporting and remote sensing of forest degradation, biodiversity protection and social benefits” (FCPF, 2008: 16)	Procedural	Avoids harm	Harm – inadequate/lack of protection of biodiversity	Yes – it is one of the selection criteria for choosing projects to support. However, the inclusion of indicators of additional benefits will depend on national priorities.
Non-binding recommendation	“The Facility is expected to achieve benefits that go beyond climate change mitigation, including...biodiversity promotion” (FCPF, 2008: 4)	Unspecified	Promotes benefits	Benefit – promotion of biodiversity	
<b>INTERNATIONAL TROPICAL TIMBER ORGANISATION (ITTO) THEMATIC PROGRAMME ON REDUCING DEFORESTATION AND FOREST DEGRADATION AND ENHANCING ENVIRONMENTAL SERVICES IN TROPICAL FORESTS (REDDES)</b>					



Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Support	Build capacity of member countries to maintain and enhance their forests' environmental services, having carried out an assessment of policy, legal and institutional frameworks to promote biodiversity conservation, carbon storage, watershed conservation and other environmental services through sustainable forest management and rehabilitation of degraded forests (ITTO, 2009a)	Procedural	Promotes benefits	Benefits – maintenance and enhancement of biodiversity, improvement of soil and water conservation, disaster prevention and flood control, sustainable forest production, other environmental services (ITTO, 2009a)	Yes – there will be assessment of the value of biodiversity and surveys conducted on land with potential for biodiversity PES schemes in order to monitor changes (ITTO, 2009a), and an assessment of the policy, legal and institutional frameworks promoting conservation
Support	Selection criteria include conformity with the REDDES programme objectives (in which enhancement of environmental services is a key aim) and consideration of environmental effects (ITTO, 2009a)	Procedural	Promotes benefits	Benefits – enhancement of environmental services	Yes – projects must provide clear qualitative and quantitative indicators to evaluate progress towards the programme's objectives (ITTO, 2009a)
<b>FUNDO AMAZONIA</b>					
Support	Support given to projects that involve the management of public forests and protected areas, environmental control, monitoring and inspection, sustainable forest management, economic activities using forests sustainably, ecological and economic zoning, territorial arrangement and agricultural regulation, preservation and sustainable use of biodiversity, and the recovery of deforested areas (Amazon Fund, 2009)	Substantive and procedural	Avoids harm and promotes benefits	Harm – unsustainable economic activity, pressures on forests Benefits – sustainable use of forests, preservation and sustainable use of biodiversity, recovery of deforested areas	Yes – monitoring biodiversity is an eligible activity to get funding for (Amazon Fund, 2009)

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
<b>CONGO BASIN FOREST FUND (CBFF)</b>					
Support	Grants support activities that ‘provide support mechanisms which conserve the forests’, maintain benefits to local communities and ensure future sustainable forest management (AfDB, 2008)	Unspecified	Promotes benefits	Benefits – forest conservation	Unspecified
<b>PROGRAMA SOCIO BOSQUE</b>					
Support	The “most important areas for carbon storage and other ecosystem services” are prioritised as part of direct annual monetary incentives per hectare given to individual landowners or indigenous communities for volunteering to protect their native forest (Socio Bosque, 2009a; Socio Bosque, 2009b)	Substantive	Avoids harm	Harm – pressures on forests and forest ecosystem services	Unspecified
<b>REDD+ SOCIAL AND ENVIRONMENTAL STANDARDS (CCBA AND CARE INTERNATIONAL)</b>					
Minimum standard	The REDD+ program must be coherent with national sustainable development policies and strategies and those at other relevant levels, including any existing biodiversity strategies (CCBA, 2009c)	Procedural	Unspecified	Unspecified	Yes – it must be indicated how the program will contribute to the implementation of any existing biodiversity strategy (CCBA, 2009c)

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	Biodiversity and ecosystem service values must be maintained and enhanced, through identification and mapping of biodiversity and ecosystem services affected and subsequent measures to maintain and enhance them (CCBA, 2009c)	Procedural and substantive	Promotes benefits	Benefits – maintenance and enhancement of threatened and endemic species, and of ecosystem services important to stakeholders (as identified in existing national biodiversity strategies and action plans, CBD 2010 targets, KBAs, HCVs)	Yes – through evidence of program objectives making significant contributions to this aim, and increased financing to fulfil it (CCBA, 2009c)
Minimum standard	There must be assessment of the positive and negative impacts of the programme on biodiversity and ecosystem service values (CCBA, 2009c)	Procedural	Avoids harm and promotes benefits	Harm and benefits to biodiversity and ecosystem services	Yes – monitoring plan and indicators defined for measurement; assessment of both predicted and actual impacts (CCBA, 2009c)
Minimum standard	The programme must comply with local and national laws and international treaties and agreements ratified or adopted by the country. Where there are inconsistencies a review process must be undertaken to resolve them (CCBA, 2009c). <i>This is relevant where environmental co-benefits are addressed in particular laws and treaties e.g. environmental laws, CBD etc.</i>	Substantive and procedural	Unspecified	Unspecified	Yes – relevant stakeholders must have the capacity to implement and monitor legal requirements; where the program does not or may not comply with certain areas, these are monitored (CCBA, 2009c)
<b>CLIMATE, COMMUNITY AND BIODIVERSITY (CCB) STANDARD</b>					

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	Provision of information on original environmental conditions, including current biodiversity and threats to it, existence of any High Conservation Values (HCVs)* and how the ‘without project’ scenario would affect ecosystem services (water, soil, other locally important services) and biodiversity (habitat availability, landscape connectivity, threatened species), in order to establish a baseline (CCBA, 2008)	Procedural	N/a	N/a	Yes – if information isn’t provided in the first instance the project will be rejected
Minimum standard	The project must generate net positive impacts on biodiversity within the project zone and lifetime, maintain and enhance HCVs (CCBA, 2008)	Substantive	Promotes benefits	Unspecified	Yes – there must be a monitoring plan (which is a minimum standard in itself) to quantify and document changes in biodiversity resulting from project activities, inside and outside project boundaries. This should be against the baseline established, through validation after initial application, and verification at least every 5 years thereafter (CCBA, 2008).
Minimum standard	Maintenance and enhancement of HCVs, with no negative impacts (CCBA, 2008)	Substantive	Avoids harm and promotes benefits	Unspecified	
Minimum standard	There should be no increase in invasive species populations as a result of the project, either directly or indirectly	Substantive	Avoids harm	Harm – increase in invasive species populations	
Minimum standard	There should be no use of genetically modified organisms (GMOs)	Substantive	Avoids harm	Harm – use of GMOs	
Minimum standard	An evaluation and mitigation of likely negative impacts on biodiversity outside the project zone from project activities	Substantive and procedural	Avoids harm	Unspecified	
<b>CARBONFIX</b>					
Minimum standard	The land must not be forested before the project start, and planting must result in the creation of forest (CarbonFix, 2009a)	Substantive	Unspecified	Unspecified	Yes – through field visits and regular certifications in years 0, 2 and 5 then every

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	Planting area is not eligible if it is wetland, planted on permafrost ground or on agricultural land that would threaten the local production of staple food through conversion (CarbonFix, 2009a)	Substantive	Avoids harm	Harm – conversion of other important ecosystems	5 years thereafter (CarbonFix, 2009d)
Minimum standard	The project must have a clearly defined and visible nature conservation area (CarbonFix, 2009a)	Substantive	Avoids harm and promotes benefits	Unspecified	
Minimum standard	There must be net positive ecological impacts (CarbonFix, 2009a)	Substantive	Promotes benefits	Benefits to soil, water and biodiversity	
Minimum standard	All endangered and critically endangered species on the IUCN Red list must be identified and protected (CarbonFix, 2009a)	Substantive	Avoids harm	Harm – pressures on endangered and critically endangered species	
Minimum standard	Use of chemical products should be minimised, and used responsibly when they are (CarbonFix, 2009a)	Substantive	Avoids harm	Harm – use of chemicals	
Minimum standard	Waste must be disposed of in an environmentally appropriate way (CarbonFix, 2009a)	Substantive	Avoids harm	Harm – waste disposal	
Minimum standard	Buffer strips must be implemented along water courses, using native species, and no flooding irrigation or drainage should be introduced (CarbonFix, 2009a)	Substantive	Avoids harm and promotes benefits	Harm – decline in water quality Benefits – use of native species	
Minimum standard	There must be minimal soil disturbance, no area-wide ploughing, and mechanised ploughing limited to planting (CarbonFix, 2009a)	Substantive	Avoids harm	Harm – soil erosion	

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	There must be no use of genetically modified organisms (GMOs); only native species should be planted in mixed stands, or it should be justified why not; all species must be site-adapted to climate change (CarbonFix, 2009a)	Substantive	Avoids harm and promotes benefits	Harm – use of GMOs, threats to species from climate change Benefits – use of mixed, native species, optimising biodiversity	
<b>PLAN VIVO</b>					
Minimum standard	Projects must promote sustainable land use (Plan Vivo, 2008)	Substantive	Avoids harm and promotes benefits	Harm and benefits to soils, watercourses and biodiversity	Yes – projects are validated through a field visit by an expert reviewer to confirm the project is doing what it says it is; after receiving certification, projects must submit annual reports including field assessments, monitoring and qualitative data (Plan Vivo, 2008). Projects work
Minimum standard	Activities must promote or restore native ecosystems (Plan Vivo, 2008)	Substantive	Promotes benefits	Benefits – promotion/restoration of native ecosystems	
Minimum standard	Only native and naturalised species can be planted (and naturalised ones only under strict provisos) (Plan Vivo, 2008)	Substantive	Avoids harm and promotes benefits	Benefits – promotes biodiversity Harm – impacts of invasive alien species	

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	The project should seek to maximise environmental benefits (Plan Vivo, 2008)	Substantive	Promotes benefits	Benefits – increased resilience and ability to adapt to climate change, conservation of threatened ecosystems and native species, strengthening of protected areas, biodiversity maintenance and improvement, watershed protection, soil stabilisation, regulation of regional micro-climates	towards verification, which evaluation and improvement of a project's systems and practices, done at a time when they can afford it (Plan Vivo, 2008)
Minimum standard	Wider ecological impacts must be identified and considered, and are 'likely to be positive' (Plan Vivo, 2008)	Unspecified	Unspecified	Unspecified	
Minimum standard	There should be no negative impacts on water quality or water tables (Plan Vivo, 2008)	Substantive	Avoids harm	Harm – negative impacts on water	
<b>SOCIALCARBON</b>					
Minimum standard	It must be 'geared towards analysis of local ecosystems and their biodiversity potential' (SocialCarbon, 2009c)	Procedural	N/a	N/a	Yes – information must be provided on these issues and monitored over time (SocialCarbon, 2009c)

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	It must detail and provide indicators (usually taking the form of different scenarios to progress through) to measure the project's benefits and impacts on natural resources, environmental services and biodiversity resources in order to improve over time (SocialCarbon, 2009c)	Substantive and procedural	Avoids harm and promotes benefits	Harm – pressures and threats to ecosystem services and biodiversity, impacts on soil, water and air quality Benefits – soil protection, maintenance of hydrological cycle, pollution sinks, pest control and pollination, maintenance of species, ecosystems and genes, integrity of natural communities, conservation, existence of high priority areas	Yes – annual monitoring is recommended though longer periods may be accepted, using satellite imagery analysis, surveys of vegetation structure and species composition, collection of physical and chemical data on water, field surveys, interviews (SocialCarbon, 2009c). <i>Note: there is flexibility in accepting projects that do not perform highly in social and environmental issues, as long as they demonstrate improvements during the crediting (SocialCarbon, 2009c)</i>
<b>VOLUNTARY CARBON STANDARD (VCS)</b>					
Minimum standard	Requirement for all AFOLU projects to identify potential negative environmental impacts and take steps to mitigate them before generating Voluntary Carbon Units (VCUs) (VCS, 2008)	Substantive and procedural	Avoids harm	Unspecified	No (only on leakage and GHG emissions)
Minimum standard	Requirement for projects to demonstrate that the project area was not cleared of native ecosystems, such as forests, grasslands, scrublands or wetlands, to create VCUs (VCS, 2008)	Procedural	Avoids harm	Harm – conversion of other ecosystems	



Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
<b>FORESTRY STEWARDSHIP COUNCIL (FSC)</b>					
Minimum standard	Assessment of environmental impacts with adequate integration into management systems**	Substantive and procedural	Unspecified	Unspecified	Yes – there are audits of forest management units, and annual reports, which describe non-conformities requiring corrective action (FSC, 2009e). One of the standards is that there should research and data collection necessary to monitor the condition of the forest, the composition and observed changes in flora and fauna, and the environmental impacts of harvesting and other operations (FSC, 2009f)
Minimum standard	Recognition and maintenance/enhancement of the value of forest services and resources in forest management operations	Substantive and procedural	Promotes benefits	Benefits – maintenance/enhancement of watersheds and fisheries	
Minimum standard	Existence of safeguards to protect rare, threatened and endangered species and their habitats	Substantive	Avoids harm	Harm – threats to rare, threatened and endangered species and their habitats	
Minimum standard	Establishment of conservation zones and protection areas**	Substantive	Avoids harm and promotes benefits	Harm – pressures on and threats to biodiversity Benefits – enhancement of biodiversity and ecosystems	
Minimum standard	Control of inappropriate hunting, fishing, trapping and collecting	Substantive	Avoids harm	Harm – hunting, fishing, trapping and collecting activities	

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	Maintenance, enhancement or restoration of ecological functions and values	Substantive	Promotes benefits	Benefits – forest regeneration and succession, genetic, species and ecosystem diversity, and maintenance of natural cycles	
Minimum standard	Protection of representative samples of existing ecosystems within the landscape in their natural state with recording on maps**	Substantive and procedural	Avoids harm	Harm – pressures on ecosystems	
Minimum standard	Preparation and implementation of written guidelines to control erosion, minimise forest damage during harvesting, road construction, and other mechanical disturbances, and protect water sources	Substantive and procedural	Avoids harm	Harm – erosion, forest damage, road construction, disturbance, decline in water quality	
Minimum standard	Promotion of non-chemical methods of pest management and efforts to avoid use of chemical pesticides. Proper equipment and training should be provided if chemicals are used.	Substantive	Avoids harm	Harm – use of chemicals	
Minimum standard	Environmentally appropriate waste disposal of chemicals, containers, liquid and solid non-organic wastes including fuel and oil at off-site locations	Substantive	Avoids harm	Harm – inappropriate/ inadequate disposal	
Minimum standard	Documentation, minimal use, monitoring and strict control of biological control agents, in accordance with national laws and international protocols; prohibition of the use of GMOs; careful control and active monitoring of the use of exotic species	Substantive and procedural	Avoids harm	Harm – impacts of species acting as biological control agents, use of GMOs, use of exotic species (threat of invasion)	

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	There should be no forest conversion to plantations or non-forest land uses, except where it is a very limited portion of the forest management unit, it is not in a HCV forest area and it enables conservation benefits across the unit (plantations should complement the management of, reduce pressures on and promote the restoration and conservation of natural forests)	Substantive	Avoids harm and promotes benefits	Harm – threats to biodiversity/ecosystem services Benefits – promotion of conservation	
Minimum standard	Maintenance/enhancement of HCV forest attributes through management activities	Substantive	Promotes benefits	Benefits – HCV forest maintenance/enhancement	Yes – in HCV forests annual monitoring is required to assess the effectiveness of measures employed to maintain/enhance the conservation attributes (FSC, 2009f)
Minimum standard	Consideration of decisions in the context of a precautionary approach	Procedural	Unspecified	Unspecified	
Minimum standard	Assessment to determine the presence of high conservation value (HCV) forest attributes**	Procedural	Promotes benefits	Benefits – identification of HCV forest	
Minimum standard	Inclusion and implementation of specific measures that ensure the maintenance/enhancement of the applicable conservation attributes	Substantive and procedural	Promotes benefits	Unspecified	
<b>PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION (PEFC)</b>					
Minimum standard	Forest management must be compatible with sustainable forest management objectives, based on a ‘dynamic acquisition of knowledge on ecology’ (PEFC, 2008)	Substantive and procedural	Unspecified	Unspecified	Yes – there are yearly surveillance audits, and a full re-assessment every 5 years (PEFC, 2007)
Minimum standard	Minimisation of harvesting impacts on biodiversity	Substantive	Avoids harm	Harm – harvesting impacts on biodiversity	

Type of measure	Description of measure	Substantive or procedural?	Avoids harm or promotes benefits?	Particular harm or benefits specified?	Is there explicit provision for monitoring?
Minimum standard	Minimisation of harvesting impacts on water, soil and slopes	Substantive	Avoids harm	Harm – harvesting impacts on water and soil	
<b>FONDO NACIONAL DE FINANCIAMIENTO FORESTAL (FONAFIFO)</b>					
Minimum standard	Presentation of a sustainable forest management plan, including information on topography, soils, drainage and carrying capacity, and plans for preventing fires, illegal hunting and illegal harvesting (Pagiola, 2007)	Procedural	Avoids harm	Harm – fires, illegal hunting and harvesting	Yes – monitoring schedules must be submitted as part of the management plan, and annual payments are made after verification of compliance (based on a sample which is audited) (Pagiola, 2007)
Support	Reforestation projects will be prioritised based on the following criteria, in order of priority: - those with high productive potential for plantation development - those incorporating threatened or endangered species - those using improved genetic materials - those complying with approved management plans (FONAFIFO, 2009b)	Substantive	Promotes benefits	Benefits – incorporation of threatened or endangered species	
Support	Forest protection projects that are not adequately represented by the existing protected areas network will be prioritised (FONAFIFO, 2009b)	Substantive	Unspecified	Benefits – protection of ecosystems that are not well represented in protected areas	
Support	Projects that are important for the sustainability and protection of water resources will be prioritised (FONAFIFO, 2009b)	Substantive	Unspecified	Benefits – water protection	

\* According to CCBA (2008) HCVs related to environmental co-benefits include significant concentrations of protected areas, threatened species, endemic species, areas that support significant concentrations of a species during any time in their lifecycle (e.g. migrations, feeding grounds, breeding areas), large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance, threatened or rare ecosystems and areas that provide critical ecosystem services (e.g. hydrological services, erosion control, fire control)

\*\* Appropriate to the scale and intensity of forest management and uniqueness of the affected resource

