



# Climate, Carbon, Conservation and Communities

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The growing market for carbon offers great opportunities for linking greenhouse gas mitigation with conservation of forests and biodiversity, and the generation of local livelihoods. For these combined objectives to be achieved, strong governance is needed along with institutions that ensure poor people win, rather than lose out, from the new challenges posed by climate change. This briefing paper explores the opportunities from and limitations to carbon-based funds for conservation and development. It highlights mechanisms that may help secure benefits for climate, conservation and communities.

### Carbon: linking climate and conservation

With climate change riding high on the political and economic agenda, more and more attention is being paid to different mechanisms for offsetting, reducing and preventing carbon releases into the atmosphere. The UK's 2006 *Stern Review on the Economics of Climate Change*<sup>1</sup> estimated that land use change – and deforestation in particular – is responsible for 18 per cent of global emissions.

Yet so-called “avoided deforestation” or “reduced emissions from deforestation and degradation” (REDD) projects are not yet recognised under the Clean Development Mechanism (CDM) of the United Nations Framework Convention on Climate Change (UNFCCC) during the first commitment period (2008-2012) of its Kyoto Protocol.

The exclusion of standing forests from the CDM stemmed from a number of concerns, including:

1. the risk of deflecting attention from the need to curb industrial emissions
2. technical issues relating to whether forests can deliver robust carbon benefits. For example, forest carbon stores can succumb to disease, fire or logging, making them less than permanent, with a risk that emissions from forest conversion are often displaced to other locations.

Discussions on the development of a new post-2012 Kyoto framework have reignited debate on whether to include REDD projects. This is in large part due to the increasing recognition of the significance of emissions from deforestation and also to the technical improvements in monitoring carbon stocks – for example through better satellite imagery. There is growing international consensus that any future agreement under the UNFCCC to combat climate change must include measures seeking to reduce deforestation in tropical countries. Limiting global warming to 2°C above pre-industrial levels will mean that all major sources of potential reductions in emissions,

including those from deforestation and land degradation, will need to be considered.

The WWF Energy Task Force concluded that curbing emissions from land use change is a key part of tackling climate change while the *Stern Review* stated that “curbing deforestation is a highly cost-effective way of reducing greenhouse gas (GHG) emissions and has the potential to offer significant reductions fairly quickly”. In addition to deforestation, the UNFCCC Subsidiary Body for Scientific and Technological Advice acknowledged that forest degradation needs to be addressed when developing mechanisms to reduce emissions from land use.

Along with climate change, biodiversity loss is another environmental issue of international concern. The Millennium Ecosystem Assessment (MA) highlights how biodiversity underpins the delivery of a range of “ecosystem services” on which human well-being depends but is being degraded at an unprecedented rate. Although the complex links between biodiversity loss and climate change are not yet well understood, there are some clear overlaps:

1. Land conversion contributes to GHG emissions and has been identified by the MA as a major driver of biodiversity loss.
2. The MA estimates that by the end of the century, climate change will be the main driver of biodiversity loss.

Efforts to tackle climate change are thus becoming increasingly entwined with efforts to address biodiversity loss. A common solution appears to lie in efforts to curb carbon emissions through forest conservation. This should be good news for biodiversity conservation. For a number of years, conservation organisations have been lamenting the decline in available funding. Carbon funds, however, are growing at a phenomenal rate, and offer the potential to make up some of the shortfall.

### KEY MESSAGES:

- The new generation of carbon funds must address the need for a sustained reduction in carbon emissions, while also building good governance and strengthening the resilience and adaptive capacity of ecosystems and local communities in the face of increased vulnerability to climate change.
- To tackle climate change effectively, we need to “join the dots” between biodiversity loss, local livelihoods and land use changes such as deforestation.
- There is a strong need for credible standards that link curbing emissions with forest conservation to ensure they provide robust carbon benefits while incorporating biodiversity conservation and benefits to local communities.
- Conservation-based strategies that address carbon emissions, which include afforestation, reforestation and curbing deforestation, must be made robust.
- Forest carbon stores are vulnerable to disease or fire, and carbon-emitting activities can be displaced elsewhere.

Forest carbon thus provides a tool for mitigating climate change and financing forest conservation.

It is vital, however, not to overlook local development issues. An effective, sustainable approach demands an examination of the overlap between the *three* areas. For instance, can forests provide robust carbon benefits? Will the growing volume of carbon funds invested in land use improvements for climate purposes take biodiversity conservation into account? **And what are the implications for local communities living in and around areas earmarked for carbon sequestration?**

### Different mechanisms for linking carbon emissions and biodiversity conservation

#### Carbon trading

Under the Kyoto Protocol, industrialised countries in Annex B to the Protocol are able to address emission reduction obligations through three mechanisms:

1. trading carbon credits with other Annex B countries (emissions trading)
2. offsetting emissions through investment in emission-reduction projects in other Annex B countries (Joint Implementation)
3. offsetting emissions through investment in emission-reduction projects in developing countries (CDM).

In addition to these so-called “compliance” mechanisms, a “voluntary” carbon market has emerged through which individuals and organisations can choose to offset their carbon emissions for various purposes, often linked to individual or corporate responsibility. These include:

1. government-led mechanisms such as the New South Wales GHG Abatement Scheme
2. schemes run by specialist carbon brokers and/or retailers.

Carbon funds operate like any project-based investment fund: a set of partners invests in the fund, the fund invests in a portfolio of emissions-reducing projects (for example, renewable energy and energy efficiency projects) and the fund manager or broker sells the carbon credits generated, with profits going to investors.

3. individual carbon-offset projects run by NGOs.

This voluntary market is growing rapidly, is largely unregulated and is often confused with official “compliance” mechanisms by consumers. Although many schemes purport to offer sustainable development benefits in addition to carbon offsetting, some have been criticised for lack of transparency, accountability and rigorous carbon measurement systems. There is a strong need for voluntary emission reductions to be verified against clear standards to ensure that they provide a robust carbon benefit, alongside any additional co-benefits they promote.

A number of means exist through which investments in these compliance or voluntary mechanisms can link payments for carbon emissions with biodiversity conservation:

1. Individual projects can be designed to meet CDM criteria, registered with the CDM and sold on the international market. Sellers include government agencies, conservation organisations and community groups. CDM projects are intended to secure firm carbon reductions and also contribute to sustainable development, and have to meet certain standards to be eligible.
2. Outside the CDM, retailers may invest in a portfolio of projects for sale to individuals or organisations on a “pay as you go” basis – for example, planting trees to offset emissions from air travel.
3. The Climate, Community and Biodiversity Alliance – a partnership convened under the Center for Environmental Leadership in Business – has developed a set of standards for land-based carbon projects that simultaneously address climate change, support local communities and conserve biodiversity. WWF helped develop the Gold Standard to measure sustainable development benefits (including biodiversity) of offset projects,

but this does not currently include forestry projects. Both are applicable to the compliance and the voluntary markets.

4. The World Bank BioCarbon Fund is an example of a carbon fund specifically aimed at projects in forests and agro-ecosystems, with a view to securing climate and biodiversity co-benefits.

#### Conservation funds

Because of concerns over biodiversity loss, conservation organisations have long invested in projects that tackle tropical deforestation through the various sources of funding available to them. These include official development assistance, corporate donations, contributions from philanthropic foundations and member donations. Funding for conservation is likely to increase significantly if projects that reduce emissions from deforestation and degradation are accepted under the second commitment period of the Kyoto Protocol, which is expected to start by 2012.

Estimates of likely revenue streams vary widely, depending on which costs and benefits are included and which carbon pools and mitigation options are assessed. One review noted that as much as US\$43 billion could flow into developing countries for conservation if REDD projects are approved.<sup>2</sup> A recent World Bank report<sup>3</sup> estimated that forested land could be worth between US\$1,500 and US\$10,000 per hectare if returns to forest land were funded through the carbon market. The top-end value is based on a price of US\$20 per tonne of carbon, which was the price within the Emissions Trading Scheme at the time the report was written.

Meanwhile, substantial conservation funds are already beginning to emerge alongside the carbon market. For example:

- As part of its £800 million Environmental Transformation Fund, the UK Department for International Development recently announced a £50 million UK contribution to a new fund to help conserve the Congo Basin rainforest.
- The World Bank is developing a Global Forest Alliance to address key international forestry challenges, including climate change mitigation. Linked to this, a new funding mechanism – the Forest Carbon Partnership Facility – is proposed to generate payments for efforts to reduce emissions from deforestation and to build national capacity to establish baselines, analyse drivers and monitor impacts of measures to reduce emissions from deforestation and degradation.

Other proposals also exist for various forms of conservation trust funds. The Brazilian government, for example, has called for the establishment of an international trust fund to which industrialised countries make voluntary contributions and which can be used to provide compensation for slowing or preventing deforestation.<sup>4</sup>

#### Conservation-based strategies to address carbon emissions

A wide range of forest-based projects can help reduce, prevent or offset carbon emissions. These include:

##### Afforestation

- large scale commercial plantations
- smaller scale tree planting schemes
- agroforestry
- community woodlots

##### Reforestation

- large scale plantations on deforested land
- tree planting on degraded land
- forest restoration

##### Slowing or preventing deforestation

- establishment, expansion or enforcement of protected areas
- sustainable forest management.

To date, afforestation and reforestation projects have attracted relatively little investment, with the bulk of carbon funding going towards industrial and energy projects. Under the CDM, for example, only one such project has been registered. This is largely

to do with problems of guaranteeing the “permanence” of forest stock and of “leakage” or “displacement” – that is, displacing the carbon-emitting activity elsewhere.

Dialogue within the UNFCCC is beginning to move away from the term “permanence” towards “time bound sequestration agreements”, whereby a resource owner commits to maintaining carbon stocks for an agreed period. Issues around displacement can be reduced through setting national and, where appropriate, regional targets (rather than a project-based approach) and gaining broad participation of countries with significant forest areas to avoid the potential risk of displacement between neighbouring countries. “Additionality” refers to the requirement that activities under the CDM project should be additional to those which would have happened without the carbon finance. This is a problematic concept with all CDM projects and is not specific to forests.

One criticism of many forestry projects is that the biodiversity value is the primary reason for the project and that, therefore, the activity would have taken place even without carbon finance. Projects can demonstrate “additionality” if they face barriers that cannot be overcome without carbon finance or when the activity without carbon finance is not financially the most attractive and, therefore, will not happen on its own.

Under the current CDM, assessment of “additionality” generally focuses on establishing whether a reforestation activity is economically viable without the CDM. The issue of economic viability is relevant to REDD projects, as the economic incentives to convert forests are often greater than the incentives to conserve or manage them responsibly. However, this is a complicated area. Overcoming concerns relating to “additionality” requires careful control to ensure that only projects proven to meet these requirements receive finance.

#### **Who benefits from conservation-carbon projects?**

Conservation-carbon projects have different implications for different stakeholders – national governments, conservation NGOs, private companies and local communities. Overall, the carbon trading market is dominated by large-scale projects with little community ownership and benefit. Large-scale monoculture plantations are an efficient way of sequestering carbon, due to their rapid growth rates and minimal management regimes, but they have negative impacts on biodiversity and ecosystem functioning. They present high barriers to entry for poor producers because they are capital intensive and scale dependent. These producers may also lose access to land that is designated for a plantation or other carbon-related activity. As noted by the Center for International Forestry Research (CIFOR), “A number of countries have targeted ‘degraded areas’ for CDM plantations. In many cases, however, these may be lands held under traditional common property systems that are used by local people for a variety of purposes.”<sup>5</sup>

With potentially high rates of return from carbon offset projects, opportunities are being seized by powerful elites, while local communities often lack the secure tenure and resource rights to stake their claim. In Uganda, for example, a project entailing the planting of trees for carbon offsets in Mount Elgon National Park has been criticised for ignoring local people’s land rights and exacerbating the conflict between the park authorities “guarding” the trees and adjacent communities claiming rights over the land.<sup>6</sup>

Projects aimed at reducing deforestation appear to have greater long-term potential for attracting investment, but again the likely distribution of costs and benefits raises concerns. It is estimated the largest income flows would accrue to only a few countries. The *Stern Review* reports that eight countries are responsible for 70 per cent of emissions from land use change (Bolivia, Brazil, Cameroon, Democratic Republic of Congo, Ghana, Indonesia, Malaysia and Papua New Guinea), with Brazil and Indonesia

accounting for 20 and 30 per cent respectively.<sup>7</sup> A framework which also includes incentives for maintaining low levels of deforestation would expand the number of countries that could benefit from a forest carbon market, such as India, and also reduce the risk of transnational displacement.

Concerns have also been raised that benefits are likely to be captured by government ministries, private companies and conservation NGOs. Local communities will likely bear a disproportionate share of the cost in terms of restrictions on resource use while reaping little of the benefit. Simply increasing investment in forestry through funding for carbon storage and sequestration is unlikely to generate more sustainable forest management or greater benefits to biodiversity and poverty elimination, without first addressing critical governance issues.<sup>8</sup> A few of the common pitfalls are outlined below.

Reducing emissions from deforestation, by reinforcing protected areas without the full participation of local communities, could be a form of “protectionism by the back door” and reopen decades of discussion on the livelihood and poverty impacts of protected areas. For these schemes, the Overseas Development Institute highlights two key concerns for local, forest-dependent people:<sup>9</sup>

1. How will incentive or payment schemes be targeted to ensure that the benefits reach those whose livelihoods are affected by changes in land use practice?
2. How will displacement be addressed and what are the implications for local resource rights and livelihood needs?

These concerns are echoed by the Forest Peoples Programme (FPP), which fears states may use REDD funds to reinforce state and private sector control over forests and revert to a “guns and guards” approach to forest protection. FPP also highlights the risk of REDD funds fuelling land speculation and the appropriation of community land – either by external actors or by more powerful individuals within a community.<sup>10</sup>

#### **Connecting carbon, conservation and community benefits**

While there are certainly risks to local communities from the rapidly growing interest in carbon conservation, there are an increasing number of fledgling schemes that could benefit local communities and generate income streams in areas with very little alternative economic potential, particularly where explicitly designed to do this.

Little attention has been paid to such “bottom-up” approaches to date, but some good examples exist of projects which provide both carbon and biodiversity benefits.<sup>11</sup> The BioCarbon Fund portfolio includes a number of community-based projects. In Niger, for example, local communities enter into a partnership agreement with a private company to grow *Acacia senegalensis* for the production of gum arabic.

Plan Vivo is a good example of a scheme specifically designed with community benefits in mind, and supports small-scale initiatives with local communities that can be used to generate tradable carbon credits. One is a Community Carbon Project in the N’hambita community in the buffer zone of the Gorongosa National Park, Mozambique. The project improves the livelihoods of this very poor community by introducing agroforestry systems that provide income from carbon finance and a range of other benefits such as fruit, timber, fodder, fuelwood and improved soil structure. The community also benefits from improved organisational capacity, education and awareness about forest stewardship and conservation, and the introduction of novel income through beekeeping, cane rat production and craft making.

The Forest Stewardship Council (FSC) provides accreditation for sustainably managed forest products, which takes into account the

rights of indigenous people, local communities and workers. FSC requires that:

1. The legal and customary rights of indigenous peoples to own, use and manage their lands, territories and resources are recognised.
2. Forest management operations enhance the long-term social and economic well-being of forest workers and local communities. FSC's principles and criteria provide an example of how local community benefits can be linked to forest conservation.

### Next steps: Beyond carbon conservation?

The urgent need to reduce carbon emissions is generating exciting new initiatives. While these offer a big increase in investment flows for conservation, there are a number of critical concerns. Our preliminary review suggests the need to understand the role of biodiversity and impacts on local communities of carbon management within these initiatives: in their prioritisation of projects, and in the process of agreeing to include "avoided deforestation" as a legitimate carbon reduction approach. These new mechanisms have yet to include the lessons from the past few decades of biodiversity conservation and sustainable forest management. As yet, they pay scant attention to governance issues, and the rights of poor local people, particularly those with limited livelihood diversification options and those critically dependent on forest resources.

It is vital that biodiversity, social and cultural values are taken into account in the design and implementation of afforestation/ reforestation (A/R) and REDD projects. The concept of High Conservation Value Forests (HCVFs) aims to ensure that forests of outstanding and critical importance are maintained, given their high environmental, socio-economic, biodiversity or landscape values. The aim is to identify HCVFs and ensure that management decisions are consistent with maintaining those attributes of high conservation value. The concept was originally developed within the Forest Stewardship Council certification process, but is increasingly being used by timber purchasers, land-use planners, conservation advocates and within policy debates. It would provide useful elements to incorporate in standards for A/R and REDD projects to ensure that these values were respected and maintained.

Encouraging innovation through a "seed-bed" approach by supporting small-scale projects is part of the answer, as is greater attention to rights, equity and livelihoods within all initiatives. Equally important is to recognise that sustainable resource management mitigates climate change through reducing carbon emissions, and also helps local communities adapt to the effects of climate change.

In Vietnam, for example, tropical cyclones have damaged the livelihoods of those living near the coast, and climate change is likely to increase the frequency and severity of such tropical storms. Since 1994, the Vietnam National Chapter of the Red Cross has worked with local communities to plant and protect mangrove forests in northern Vietnam. Nearly 12,000 hectares of mangroves have been planted, and the benefits have been remarkable.

Although planting and protecting the mangroves cost US\$1.1 million, it has saved US\$7.3 million per year in dyke maintenance. During the devastating Typhoon Wukong in 2000, project areas remained unharmed while neighbouring provinces suffered huge loss of life, property and livelihoods. The Vietnam Red Cross estimates that 7,750 families have benefited from mangrove rehabilitation. The mangroves are also a reservoir for carbon sequestration and family members can now earn additional income from selling crabs, shrimp and molluscs while increasing the protein in their diets.<sup>12</sup>

In Sudan, local farmers harvest gum from gum arabic trees. The trees seed themselves naturally on farmland, and the farmers leave the seedlings to grow for five years until they can be tapped for gum. Local people are also selecting varieties with greater resistance to drought and hotter temperatures, both associated with climate change. These activities enhance livelihoods, help local people adapt to a changing climate, sequester carbon in tree growth and support good land management and biodiversity conservation.<sup>13</sup> The UNFCCC Adaptation Fund will expand the number of such projects.

The wise development of carbon funds offers a major opportunity to respond to climate change in ways that blend mitigation and adaptation. However, for these new carbon funds to succeed, they must bridge local and international interests, and engage with local people to ensure these partnerships for sustainable forest management are transparent and accountable. They need to deliver tangible livelihood benefits, maintain biodiversity and ensure long-term gains from forests, rather than rapid disbursement of funds.

### Footnotes

- 1) HM Treasury (2006) *Stern Review on the Economics of Climate Change*. See: [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/stern\\_review\\_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm).
- 2) Avoided deforestation could help fight third world poverty under global warming. See: <http://news.mongabay.com/2006/1031-deforestation.html>.
- 3) Chomitz, K.M. (2007) *At Loggerheads? Agricultural expansion, poverty reduction, and environment in the tropical forests*. World Bank, Washington DC.
- 4) Griffiths, T. (2007) *Seeing RED? Avoided deforestation and the rights of indigenous peoples and local communities*. Forest Peoples Programme, Moreton-in-Marsh, UK.
- 5) Smith, J. and Scherr, S. (2002) *Forest Carbon and Local Livelihoods: Assessment of opportunities and policy recommendations*. CIFOR, Bogor, Indonesia.
- 6) Human rights abuses, land conflicts, broken promises – the reality of carbon offset projects in Uganda. FERN press release, 12 January 2007.
- 7) This list varies slightly from the FAO's list of 10 countries with the largest annual net loss of forest. The differences between the two are potentially due to the Stern Review looking beyond net forest loss. Both lists indicate that deforestation and associated emissions are largely accounted for by a small number of countries.
- 8) Griffiths, T. (2007) *Seeing RED? Forest Peoples Programme*.
- 9) Peskett, L., Brown, D. and Luttrell, C. (2006) *Can Payments for Avoided Deforestation to Tackle Climate Change Also Benefit the Poor?* Forestry Briefing 12. ODI, London.
- 10) Griffiths, T. (2007) *Seeing RED? Forest Peoples Programme*.
- 11) Reid, H. (2004) 'Climate change – biodiversity and livelihood impacts'. In D. Roe (ed.) *The Millennium Development Goals and Conservation*. IIED, London. pp 37-54.
- 12) International Federation of Red Cross and Red Crescent Societies (2001) *Coastal Environmental Protection: A case study of the Vietnam Red Cross*. IFRC, Geneva.
- 13) Personal communication, Dr Sumaya Ahmed Zaki-Eldeen, Sudanese Environment Conservation Society, June 2007.

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