

Green Carbon



Forests and REDD+

REDD+

Reducing Emissions from Deforestation and forest Degradation in developing countries, + other forest-related mitigation activities

Global Biodiversity Agenda

The Role of Forests

The carbon stored by living terrestrial vegetation and soil can be thought of as 'green carbon'. It is removed from the atmosphere by plants through the action of photosynthesis. Forests therefore play an important role in the global carbon balance by acting as a carbon sink. When trees decay, or are burnt, the carbon is released back into the atmosphere. Forests currently cover approximately 4 billion hectares of the earth's surface, which equates to 31%, half of which are in developing countries (FAO 2010).

The forests in developing countries encompass a wide range of ecosystems, from dry forests to tropical rainforests. These forests contain precious biodiversity, and provide society with valuable ecosystem services, directly benefiting billions of people and their livelihoods.

However, forests in developing countries have come under increasing pressure from land use change, mainly in the form of clearance of forest land for agriculture (FAO 2010), thus leading to deforestation, forest degradation, and subsequently, carbon dioxide emissions. The rate of deforestation is not insignificant; it is estimated that between 12% and 17% of global greenhouse gas emissions come from deforestation and forest degradation, including peatland emissions (van der Werf *et al.* 2009 and IPCC 2007). This is similar to emissions from industry (19%) (IPCC 2007). Globally the rate of deforestation is slowing, however it is still considered to be 'alarmingly high' (FAO 2010).

Forest degradation will therefore have implications on the global carbon balance in the years to come.

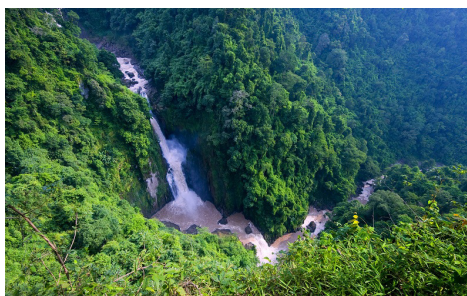


Image © Chirask Tolertmongkol 2013



Incentivising Forest Emission Reductions

The United Nations Framework Convention on Climate Change (UNFCCC) has agreed to take action on forest carbon emissions. The REDD+ process is one way of incentivising retention of forests and thus protection of stored carbon. REDD+ focuses on forests in developing countries, and include both tropical and temperate climatic zones. The basic mechanism proposed involves developed countries providing funds to developing countries linked to forest carbon emission reductions.

The concept of REDD (Reducing Emissions from Deforestation and forest Degradation in developing countries) was initially suggested by environmental scientists in the 1980s and REDD specifically was introduced into the climate change negotiations in 2005 and then included in the 2007 Bali Action Plan, formulated at the 13th meeting of the Conference of the Parties (COP) for the UNFCCC. Over time, the scope of the mechanism has expanded from the initial

concept to include other activities that may help conserve, sustain or enhance carbon stocks of forests. These additions resulted in REDD+ in 2011 although the formal mechanism is still the subject of negotiations at the annual UNFCCC COP. The details are still under discussion, for example, to what extent will the process be market-based or fund-based. The REDD+ activities are; reducing emissions from deforestation and forest degradation, conservation and enhancement of forest carbon stocks and sustainable management of forests.

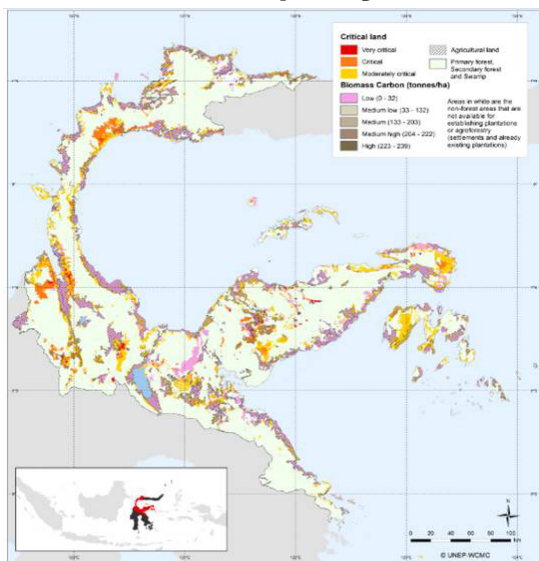
By using incentives for countries to maintain and carefully manage forest carbon stocks the international community can make an important contribution to global climate change mitigation. Social and environmental safeguards have been put in place that countries have agreed to promote and support the process. Discussion is proceeding on ways to incentivise developing countries to undertake these activities.

The UN-REDD Programme

The UN-REDD is one of a number of initiatives supporting countries to develop capacity to prepare for REDD+. UN-REDD is a collaborative partnership between the Food and Agriculture Organization of the United Nations (FAO), United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP).

Recent work undertaken by UNEP-WCMC, on behalf of the UN-REDD programme, includes working with countries to help them identify, prioritise and value the benefits from REDD+. Examples of support include development of land use planning maps and the identification of the additional costs associated with REDD+ implementation that achieves multiple benefits (see box for detail on multiple benefits).

An example of decision support mapping is work done under Indonesia's UN-REDD National Programme, based in the Central Sulawesi region. Regional datasets were used to create a total carbon map which includes biomass carbon (different vegetation types store varying quantities of carbon) and soil carbon. The total carbon map was then overlaid with spatial information about land-uses and designations to illustrate where different REDD+ interventions could be carried out. For example, sustainable forest management techniques could be applied in existing logging concessions to reduce the carbon emissions of this activity. Datasets on biodiversity and ecosystem services were then used to identify areas with a high potential for multiple benefits from these interventions. Types of overlaid data included commercial activities such as mining and timber concessions, population density, erosion risk and other themes relevant to robust REDD+ planning.



In the image above, a base map of total carbon has been overlaid with important areas for watershed management. This map demonstrates synergistic approaches to forest management where restoration activities under REDD+ provide both watershed regulation and optimum carbon stock enhancement.

Multiple Benefits of REDD+

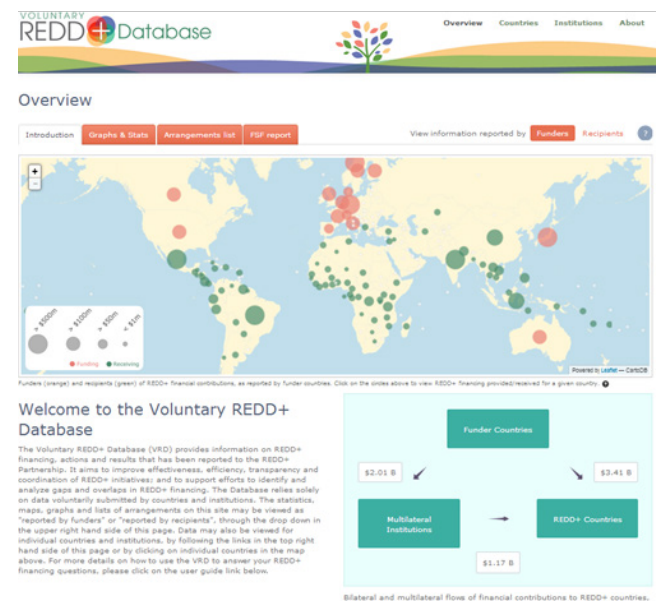
A key feature of the REDD+ mechanism is that it helps in the delivery of benefits that are additional to the primary aim of climate change mitigation. Examples of social and environmental benefits are forest biodiversity conservation and maintenance of ecosystem services.

Forest ecosystem services could include:

- Soil retention;
- Local and regional climate regulation e.g. forests affect local rainfall patterns and deforestation can lead to reductions in rainfall which causes a reduction in energy generation from hydropower (Stickler 2013);
- Genetic resources for research; and
- Edible Non-Timber Forest Products (NTFPs) such as fruits, berries, and bush meat. (Dickson & Osti 2010)

Voluntary REDD+ Database

UNEP-WCMC is involved in helping to track international public finance flows for REDD+ through the Voluntary REDD+ Database. The database gathers voluntarily submitted data from governments and institutions on the current scale of funding commitments for REDD+. The resulting data gathered enables insights into the trends in the geographical coverage, timing and scope of international REDD+ finance. Gaps and overlaps can thus be identified. Red dots on the map below represent funding and green dots represent receipt of funding.



<http://reddplusdatabase.org>

For full document references see:
www.proteuspartners.org

How are Businesses Involved?

The private sector is pioneering REDD+ approaches under the voluntary carbon market, outside of the UNFCCC mechanism. Such projects and approaches can be used to demonstrate lessons learned for the eventual UNFCCC mechanism. The voluntary carbon market is currently worth USD237 million (Forest Trends 2012). The private sector are involved in trialling approaches that will benefit the climate while also having social and environmental gains.

Voluntary carbon markets can be attractive for business because they provide a quantitative and

certified method of offsetting emissions associated with commercial activities. REDD+ activities can represent additional positives because they provide multiple benefits beyond protecting carbon stocks. These additional benefits can contribute to many aspects of corporate social responsibility targets.

Public-private partnerships can also contribute to REDD+ as it reaches the implementation stage and payments for verifiable emissions reductions, under voluntary carbon markets, come into play.

For further information email:
proteus@unep-wcmc.org

Date of Publication
May 2013