

Financing REDD

Linking country needs and financing sources

Michael Dutschke and Sheila Wertz-Kanounnikoff

with Leo Peskett, Cecilia Luttrell, Charlotte Streck and Jessica Brown

Key points

- A financing mechanism for reducing emissions from deforestation and forest degradation (REDD) is under negotiation, to take effect after 2012. The mechanism will draw on various public and private financing sources to respond to the diverse needs of different developing countries.
- Financing for upfront capacity building ('readiness') is likely to rely on public funds, while financing for ongoing emission reductions is likely to come from funds and/or carbon markets (both voluntary and compliance-oriented).
- Financing gaps are likely to arise, first in supporting the REDD demonstration period prior to 2012, and second in countries with weak capacity and governance, and thus higher investment risks.
- The most promising avenues for addressing financing shortfalls are market-linked mechanisms that tap carbon markets via auctioning emission allowances, fees and taxes on carbon transactions.
- The governance context of many tropical forest areas requires substantial prior investments in land tenure clarification and improved law enforcement before market-based finance becomes feasible.

The challenge: creating an effective and flexible mechanism that is responsive to diverse national circumstances

Reducing greenhouse gas (GHG) emissions from forests is an option with high potential at low costs, if seized today (Stern 2006). The cost of halving net global carbon dioxide emissions from forests by 2030 is estimated at USD 17–33 billion annually, if forest carbon is included in global emissions trading (Eliasch 2008). The Thirteenth Conference of the Parties to the United Nations Framework Convention on Climate Change in 2007 laid the foundations for the post-2012 climate protection regime to include REDD in developing countries. Developed countries are encouraged to help finance these activities.

Different countries have divergent needs, both in capacity building and in realising emissions reductions, if they are to effectively engage in REDD. These needs depend on national circumstances, including the drivers of deforestation and degradation. In addition, countries with weak implementation capacity and governance structures need different types of investments and financing sources than countries with stronger institutions.

Multiple financing sources for REDD are currently available or likely to become available. The amounts and their composition depend on the design of the REDD mechanism, and will change over time. Most of the current REDD financing is earmarked for capacity building, or 'readiness'. Although the nature of the REDD mechanism is still under discussion, and the outcome will affect the financing needs and financial flows, we present a preliminary exploration of the potential financing streams for different country contexts and identify possible gaps in financing.

What are the financing needs?

Regardless of the REDD mechanism's final design, two main types of financing needs arise (Eliasch 2008): (1) upfront capacity building and (2) ongoing emissions reductions (see Table 1).

- **Upfront capacity-building (readiness) costs:** Countries need to fulfil minimum readiness requirements, such as emissions reduction accounting infrastructure (monitoring, reporting and verification), clarification of land tenure and institutional capacities for law enforcement. Hoare *et al.* (2008) estimate the total capacity-building for 40 forest nations over a five-year period to cost up to USD 4 billion. Amount and type of costs will vary significantly among countries.
- **Ongoing emission reduction costs:** These refer to two cost categories: forest protection costs and opportunity costs (Eliasch 2008).
 - » **Forest protection costs** refer to the costs of implementing policies and measures—both inside and outside the forest sector—that are needed to reduce forest emissions, including recurrent monitoring costs. Examples include tenure reform, forest law enforcement, taxation of forestland, restrictions on road building and agricultural zoning. Costs vary, and some measures, such as removing subsidies, may bring in revenue rather than incur costs.
 - » **Opportunity costs** refer to the costs of lost profit opportunities from not deforesting or from adopting more sustainable forms of forest use. These costs vary across space and time: where markets are accessible, opportunity costs tend to be higher than in remote areas; where agricultural intensification increases in response to

expanding forest protection (e.g. REDD activities), the opportunity costs also rise. However, low opportunity costs do not imply cheap REDD activities, since countries where opportunity costs are the lowest are often those where policy, administration and monitoring challenges are greatest (Eliasch 2008).

The forest context affects financing needs

Pressures on forests vary across countries and regions, and over time. Human pressure on forests is shaped by, among other things, market access, the nature of forest usage and tenure security. Chomitz *et al.* (2006) have provided a stylised three-part typology of tropical forests: forest-agricultural mosaic lands, frontier and disputed areas, and areas beyond the agricultural frontier (Table 2). In essence, these forest types correspond to the three stages of the forest transition curve (Figure 1). Forest frontiers, where deforestation is concentrated, are currently distributed almost evenly across all regions (Figure 2). Forest degradation appears to be concentrated in African and Latin American savanna biomes, notably in forest mosaic lands, and in Asian forests (Chomitz *et al.* 2006).

Different policies may be needed to address the governance challenges and associated deforestation and degradation in different forest types. For example, important policies for improved forest management in forest mosaic lands—where degradation is concentrated—may include enforcement of property rights and creation of new markets for environmental services (Table 2).

Table 1. Summary of REDD financing needs

	Upfront capacity building	Ongoing emissions reduction	
	Readiness costs	Forest protection costs	Opportunity costs
Objectives	Upfront investments in REDD infrastructure (monitoring systems, forest and carbon density data), stakeholder participation	Implementation of policies and measures that enable and promote REDD investments	Compensating forgone profits from reducing forest emissions
Features	<ul style="list-style-type: none"> • Upfront financing • Little direct effect on land use emissions • Upfront transaction costs 	<ul style="list-style-type: none"> • Upfront financing • Costs and benefits depend on policy • Recurrent transaction costs 	<ul style="list-style-type: none"> • Upfront financing • Continuous financing • Costs vary across space and time
Financing needs (examples)	<ul style="list-style-type: none"> • Set up monitoring system (USD 0.5–2 million, in India and Brazil)^a • Set up forest inventories (USD 50 million for 25 nations)^b • Capacity-building (USD 4 billion for 40 nations over 5 years)^a • Land tenure reform (size-dependent, USD 4–20 million over 5 years for one country based on estimates from Rwanda, Ghana and Solomon Islands)^a 	<ul style="list-style-type: none"> • Recurrent costs of forest inventories (USD 7–17 million per year for 25 countries)^b • Monitoring legal compliance 	<ul style="list-style-type: none"> • Opportunity costs of halving deforestation (USD 7 billion annually over 30 years for eight countries)^c

^a Hoare *et al.* 2008; ^b Eliasch 2008; ^c Grieg-Gran 2008

Table 2. Three stylised forest types

	Forests beyond the agricultural frontier (~49 per cent of tropical forests)	Forest frontiers and disputed areas (~37 per cent of tropical forests)	Forest mosaic lands (~14 per cent of tropical forests)
Features	<ul style="list-style-type: none"> • Remote from markets; low deforestation • Low population, but high proportion of indigenous and poor 	<ul style="list-style-type: none"> • Protecting indigenous rights • Rapid agricultural expansion and high deforestation • Rapidly increasing land values (frontiers) • Forest use conflicts (disputed areas) 	<ul style="list-style-type: none"> • Protecting indigenous rights • Depleted, fragmented forests; slower deforestation but higher degradation • High land values and high population densities with a substantial portion of forest dwellers
Policy needs	<ul style="list-style-type: none"> • Protecting indigenous rights • Averting disorderly frontier expansion by equitably assigning rights • Regulated infrastructure expansion 	<ul style="list-style-type: none"> • Policing and law enforcement, e.g. to prevent resource grabs • Equitable settlement of claims • Control of road expansion 	<ul style="list-style-type: none"> • Enforcement of property rights over natural resources • Developing markets for environmental services • Reforming regulations to encourage forestry

Source: Chomitz *et al.* 2006

Table 3. Existing and potential finance sources for REDD

PUBLIC FINANCE	
Traditional ODA for forestry	<ul style="list-style-type: none"> • Increasing; rose 47.6 per cent since 2000 and totalled almost USD 2 billion in 2005–07 (World Bank 2008) • Provides grants, concessional loans, shorter-term financing for specific projects and longer-term programme financing or budget support • Also interested in co-benefits related to poverty reduction, biodiversity conservation and improved governance
New ODA for REDD	<ul style="list-style-type: none"> • Recent emergence of new REDD-related finances that draw all or part of their revenues from international public finance sources • Includes finance aimed at ‘pump priming’ the private sector, such as the World Bank’s Forest Carbon Partnership Fund, and sources aimed at building public-sector capacity, such as the Congo Basin Fund
Domestic	<ul style="list-style-type: none"> • Limited domestic public financing for forestry from taxes and royalties • Typically used for subsidies and other incentives • Sponsoring of environmental services in forests
PRIVATE FINANCE (includes Annex I government purchase of REDD credits as offsets on carbon markets)	
Existing carbon market	<ul style="list-style-type: none"> • Two components: voluntary and compliant (current compliance market excludes REDD) • Compliance market restricted to afforestation/reforestation under the Clean Development Mechanism, which may or may not become part of a future REDD mechanism • Voluntary market dominates in forestry, making up 18 per cent of all projects globally in 2007 (Hamilton <i>et al.</i> 2008)
Future carbon markets	<ul style="list-style-type: none"> • Three main avenues under discussion: <ol style="list-style-type: none"> i) integrating REDD into a global compliance carbon market ii) allocating auction proceeds iii) allocating revenues from other fees, fines and taxes • Regional and domestic markets may also consider using REDD crediting for compliance: e.g. the European Union emissions trading scheme
Foreign direct investment	<ul style="list-style-type: none"> • May constitute an important source, but investment is unevenly concentrated in low-risk countries with profitable forest industries • Flows to forest sector have increased by 29 per cent from USD 400 million in 2000–02 to USD 516 million in 2005–07 (World Bank 2008)
Domestic	<ul style="list-style-type: none"> • Public–private partnerships or microcredit schemes but are unlikely to be significant, especially in least developed countries, due to low level of resources, lack of expertise, and difficulty raising finance from risk-averse domestic banks
Non-profit	<ul style="list-style-type: none"> • Represents growing proportion of international private finance • Typically small, narrowly targeted grants; may not have wide REDD applicability • Non-profits are interested in REDD and may be less risk-averse than profit-making enterprises

Table 4. Matching financial sources to forest types

	Forests beyond agricultural frontiers	Forest frontiers	Forest mosaic lands
Public finance	High need from both international and domestic sources	Important for enabling REDD investments	Need depends on governance context
Private finance	Less likely, as clear land tenure required for REDD-payments	Likely, if enabling environment for REDD investments is secured	Highly likely, if enabling environment for REDD investments is secured

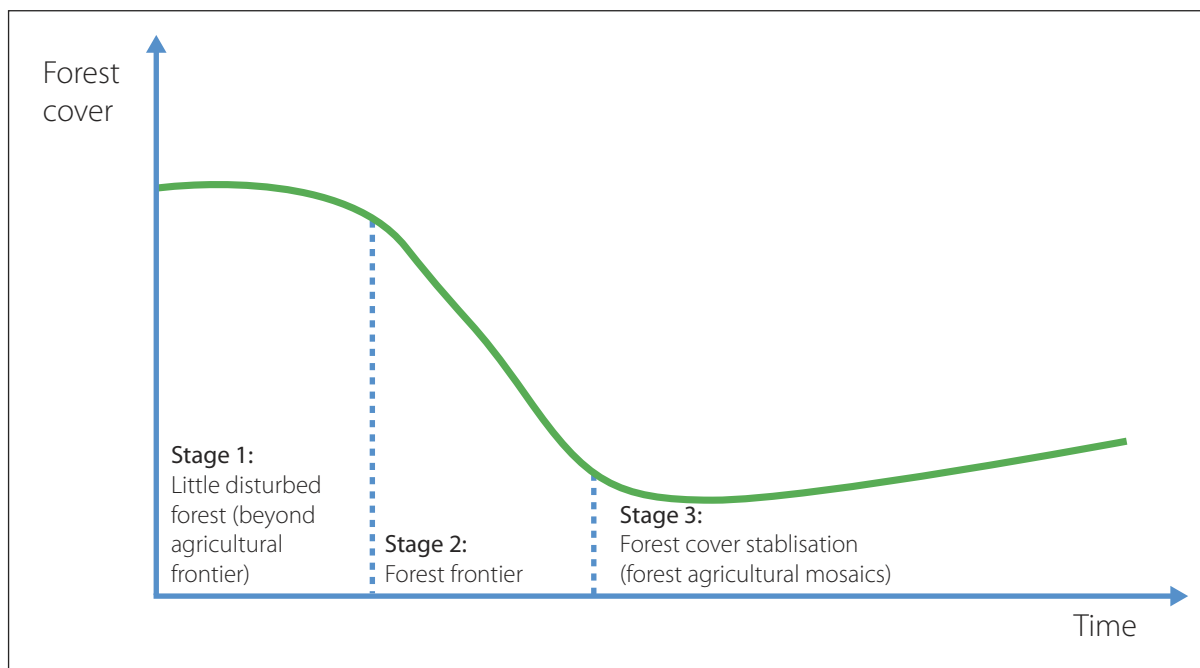


Figure 1. The forest transition curve

Matching needs and finance

Existing and potential finance for REDD activities span a breadth of public and private sources (Table 3). However, different sources are adequate and suitable to finance different needs (Table 4). For example, according to Organisation for Economic Co-operation and Development rules, public spending to acquire carbon credits cannot be considered as overseas development assistance (ODA), as these credits would have to be accounted as ODA reflows (Dutschke and Michaelowa 2006). Direct carbon credit-generating activities will therefore largely rely on private-sector finance and purchase of REDD credits by Annex I governments for offsetting their national GHG emissions targets.

Mapping the needs of the three ‘forest types’ suggests that public finance is highly relevant for forests ‘beyond the agricultural frontier’ and in forest frontiers in cases of comparatively weaker land tenure and governance structures. On the other hand, private sector finance is likely to play a greater role in forest mosaic lands in situations of comparatively stronger land tenure and governance (Table 4). However, forest mosaics currently constitute the smallest share of tropical forests.

Public finance

Public finance is most needed upfront for capacity building and achieving readiness, and for leveraging private-sector finance, thus establishing the enabling policy environments for delivery of effective REDD outcomes. These investments are especially needed in weak governance contexts. ODA finance will be crucial to cover these capacity-building costs as few developing countries have shown the ability or political will to self-finance REDD investments. The Eliasch Review argues

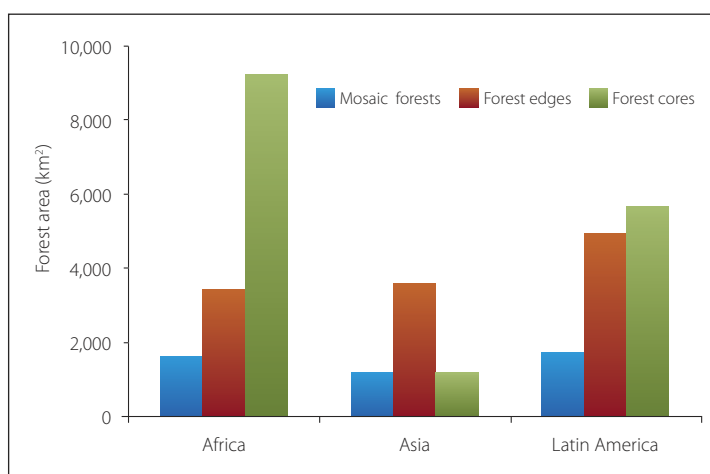


Figure 2. Indicative regional distribution of forest types (rough proxies are used because it is impossible to map the stylised forest types ; for the mosaic lands, only data on the forest portion was used) [from Chomitz *et al.* (2006) using global land cover data from 2000 (ECJRC 2003)]

that even if REDD were integrated into the global carbon market, an additional USD 11–19 billion each year until 2020 would need to be financed from other sources — most likely ODA — to halve emissions by 2020 (Eliasch 2008).

As a result of increasing donor interest in REDD, the amount of ODA available for supporting carbon forestry is growing. Programmatic or budget support is likely to play a role in strengthening government institutions and increasing ownership of REDD systems; loans may be suitable for financing aspects with guaranteed carbon returns; and support for capacity building may be more

suiting to direct technical assistance. ODA is, however, arguably a short-term solution, and the volumes fall well short of the estimated costs. The recent increase in forestry-related ODA, to almost USD 2 billion (2005–07), represents only a tiny fraction of the USD 11–19 billion recommended in the Eliasch Review.

ODA thus must be used strategically to stimulate and complement private investment by helping to provide basic readiness requirements and reinforcing the enabling environment for investment. Such pump-priming investments (by which public funds are used to leverage private investments) are especially needed in high-risk countries, where little private-sector finance is available. However, ODA has a tendency to gravitate towards safer environments, with more donor financing currently flowing to South and Southeast Asia and Central and South America than to Africa, which as a whole has low levels of ODA financing for forestry (World Bank 2008).

The likely dependence of REDD on ODA in many situations, especially in light of the creation of new international funds to support REDD, raises some concerns about how such efforts should be structured. These include the:

- potential lack of harmonisation among initiatives that may create added burdens for resource-stretched governments;
- lack of alignment with government systems and the low absorptive capacity of governments to use the funds efficiently; and,
- risk of diverting ODA from other areas such as health and education.

These concerns mirror those across the aid sector that led to the Paris Declaration on Aid Effectiveness (OECD 2005), which committed countries to harmonisation and alignment to national systems in ODA spending.

Private sector finance

Private finance, especially when incentives are provided through the carbon offset markets, is likely to mobilise significantly higher and more sustainable volumes than forest-sector ODA. We define 'private sector finance' to include funds from the compliance market which may include public finance. The level of private financing depends on the following factors, all of which affect the market:

- Long-term GHG emissions reduction commitments.
- Inclusion of carbon credits from subnational approaches in the REDD scheme.
- Early action to generate REDD credits that can be banked towards compliance with post-2012 targets.

Fungibility (interchangeability) of REDD carbon credits on other carbon markets is an important issue. Full fungibility raises fears of flooding markets, and therefore reducing the incentive for further REDD activities. Various proposals have been put forward to deal with this issue, including the adoption of deeper emissions

reduction commitments and controlled fungibility of REDD credits in form of a 'dual market' (Ogonowski *et al.* 2007) or the creation of a new trading unit (Hare and Macey 2007).

Private-sector investments are more likely in countries with stronger governance structures and better defined tenure systems. The existence of a national verification system or the use of certification schemes may also help in attracting investment.

The voluntary carbon market offers a useful testing ground for different approaches to REDD but it is unlikely to generate financing at a scale sufficient to support large REDD initiatives. Emerging financial sources, such as Forest Backed Bonds (tradable financial instruments backed by forest-related assets) may also provide new forms of capital suitable for riskier and longer cycles (Petley 2007).

Addressing the financing gaps

Exploiting the full potential of REDD requires funding at unprecedented levels and is among the main challenges in the REDD debate. A half-hearted adoption of REDD in the market is likely to create a general financing gap, but whatever the case, financing shortfalls are likely to arise in two main areas: (1) the demonstration period for the international REDD mechanism prior to 2012, and (2) financing in countries with weaker forest governance and thus higher-risk investment environments—as is the case in the majority of tropical forestlands (see Table 2).

To increase international distributional equity, ODA could support countries with restricted access to the REDD market. Financing gaps may also be addressed through the design of the mechanism, such as rewarding early action, which will be crucial for attracting early, and at times high-risk, private investment, or allowing for the crediting of policies and measures. These measures may also help reduce perverse incentives, which might encourage countries to increase deforestation rates before 2012.

Alternative financing sources could substantially increase the amount of finance available to address needs not financed directly by markets or ODA. These include proceeds from auctioning allowances in emission-trading schemes by Annex I countries and the allocation of revenues from other fees, fines and taxes. These may qualify as either ODA or some other public funding stream, depending on how these funds are channelled. The European Commission, for instance, is considering earmarking five per cent of auctioning proceeds from the European Union Emissions Trading Scheme after 2012 for global efforts to combat deforestation, generating an estimated USD 2.0–2.7 billion a year by 2020 (EC 2008). However, it remains uncertain how much of this sum would be channelled to REDD, as there will be competing claims from other sectors and mechanisms, such as technology transfer and adaptation.

Whatever the scenario, it will be necessary to find ways to make up the shortfall in financing from both public and private sources. Above all, a future REDD mechanism should demonstrate openness to flexible and creative financing approaches in order to adapt to countries' changing needs and experiences.

References

- Chomitz, K.M., Buys P., de Luca, G., Thomas, T.S., and Wertz-Kanounnikoff, S. 2006 At loggerheads? Agricultural expansion, poverty reduction, and environment in the tropical forests. Policy Research Report. World Bank, Washington D.C.
- Dutschke, M. and Michaelowa, A. 2006 Development assistance and the CDM - how to interpret 'financial additionality. Environment and Development Economics 11(2): 235–246.
- ECJRC (European Commission Joint Research Centre) 2002 Global land cover 2000 database. <http://www.gvm.jrc.it/glc2000>
- Eliasch, J. 2008 The Eliasch Review – climate change: financing global forests. Commissioned by The Office of Climate Change, UK. <http://www.occ.gov.uk/activities/eliasch.htm>
- EC (European Commission) 2008 Addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Com(2008) 645/3, Brussels.
- Grieg-Gran, M. 2008 The cost of avoiding deforestation. Update for the Eliasch Review of the background paper prepared for the Stern Review of the economics of climate change, London.
- Hamilton, K., Bayon, R., Turner, G. and Higgins, D. 2007 State of the voluntary carbon markets 2007. Picking up steam. The ecosystem marketplace and new carbon finance. Washington D.C.
- Hare, B. and Macey K. 2007 Tropical deforestation emission reduction mechanism. A discussion paper, Greenpeace International.
- Hoare, A., Legge, T., Nussbaum, R. and Saunders, J. 2008 Estimating the cost of building capacity in rainforest nations to allow them to participate in a global REDD mechanism. Report produced for the Eliasch Review by Chatham House and ProForest with input from ODI and EcoSecurities. <http://www.occ.gov.uk/publications/index.htm>
- OECD 2005 Paris Declaration on aid effectiveness, ownership, harmonisation, alignment, results and mutual accountability. OECD, Paris. www.oecd.org/dataoecd/11/41/34428351.pdf
- Ogonowski, M., Helme, N., Movius, D. and Schmidt, J. 2007 Reducing emissions from deforestation and degradation: the dual markets approach. International Future Action Dialogue, Center For Clean Air Policy, Washington D.C.
- Petley, S. 2007 Forest backed securities: alternative finance for tropical natural forest. Presentation to the Asia-Pacific Tropical Forest Investment Forum, August, 2007. http://www.itto.or.jp/live/Live_Server/3289/PetleyITTOBangkokREV.JG.pdf
- Stern, N. 2006 The Stern review: the economics of climate change. Cambridge University Press, Cambridge, UK.
- World Bank 2008 Climate investment funds: mapping of existing and emerging sources of forest financing. First Design Meeting on the Forest Investment Program, Washington, DC, October 16-17. http://siteresources.worldbank.org/INTCC/Resources/Mapping_study_Final_for_FIP_Design_Meeting_Oct_16-17_08.pdf

For further information, please contact:

Michael Dutschke michael@biocarbon.net
Sheila Wertz-Kanounnikoff S.wertz-kanounnikoff@cgiar.org
Leo Peskett L.Peskett@odi.org.uk
Cecilia Luttrell c.luttrell@cgiar.org
Charlotte Streck C.Streck@climatefocus.com
Jessica Brown J.Brown@odi.org.uk

A full length version of the paper can be found at:
<http://www.cifor.cgiar.org/globalredd/>

For general inquiries contact cifor@cgiar.org



Project funding was received from the David and Lucile Packard Foundation

Center for International Forestry Research (CIFOR) advances human well-being, environmental conservation, and equity by conducting research to inform policies and practices that affect forests in developing countries. CIFOR is one of 15 centres within the Consultative Group on International Agricultural Research (CGIAR). CIFOR's headquarters are in Bogor, Indonesia. It also has offices in Asia, Africa and South America. CIFOR works in over 30 countries worldwide and has links with researchers in 50 international, regional and national organisations. www.cifor.cgiar.org