

# Forest Investment Review

July 2009

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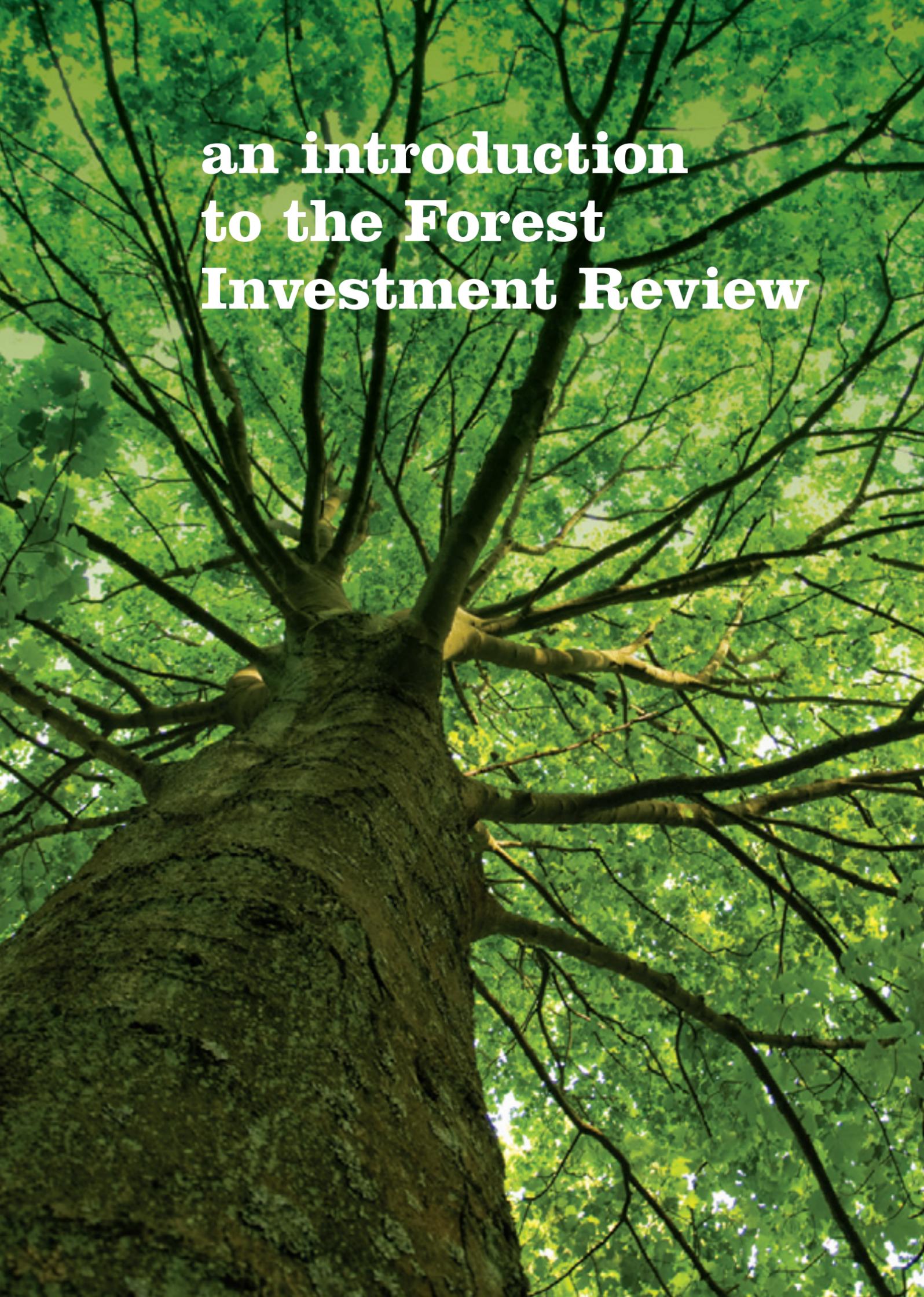


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**an introduction  
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## About the author

### Alice Chapple

Alice Chapple, author of this introductory chapter, heads up the financial services sector work at Forum for the Future. She works with others in the sector to develop innovative financial instruments, more effective valuation techniques and enlightened strategies so that capital can increasingly be allocated to activities that support sustainable development.

Since joining the Forum in 2006, she has worked in a range of areas including forest investment, cleantech investment, microfinance, insurance, the carbon markets and sustainable private equity. Before joining Forum, Alice worked at development finance institution CDC in various roles, including financial analyst, fund manager, and social and environmental advisor.

# 1 scope & purpose of the review

*Forests are a critical component of the fight against climate change. Deforestation and forest degradation account for around 18% of all global greenhouse gas emissions. But there are currently strong economic reasons for deforestation. These differ between regions – in some places, the main driver is clearance of land for subsistence farming, while in others forests are cleared to make way for intensive agriculture. If we are to curtail deforestation, we need to find ways to finance the conservation of forests whilst generating sustainable economic development. To achieve the necessary scale, a combination of public and private sector interventions will be required.*

The *Forest Investment Review* was commissioned by DFID and DECC to explore how best to stimulate private sector investment alongside public money to reduce deforestation in the developing forest nations. Specifically, it examines ways of achieving this through public policy, and public-private collaboration.

Forum for the Future convened a team of experts in finance and forests to assess the different areas where private sector finance could be mobilised, and they have contributed chapters to this report. The team has benefited greatly from the ongoing work of others in this complex area, including the Prince's Rainforest Project and Project Catalyst. We hope that this report adds a further useful dimension to the discussions.

This introductory chapter sets the findings of the Forest Investment Review in context and summarises the individual chapters. It outlines why reduced emissions from deforestation and degradation (REDD), together with other activities to enhance forests through afforestation, reforestation and sustainable forest management (REDD+) are so critical in the fight against climate change. It then explores the need for public and private sector finance in achieving REDD+, considers how appropriate private sector investment could be mobilised, and assesses the potential contribution it could make. Finally, it recommends actions for the government to take to support appropriate private sector activity in pursuit of REDD+.

The REDD+ finance being considered in this report is not predicated on the emergence of a fully functioning forestry carbon market. Rather, it looks at the finance that could be available in advance of that market emerging.

The 'private sector' encompasses a wide range of international and local participants, including institutional investors such as pension funds and insurance companies; large, medium-sized and small companies; communities; and individuals.



## 2 key conclusions/findings

### 2.1 Forests are a critical component of the fight against climate change

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change<sup>1</sup> concluded that we need to keep concentrations of greenhouse gases in the atmosphere below the threshold of 450ppm if we are to reduce the likelihood of dangerous climate change. Estimates by McKinsey<sup>2</sup> show that, to get onto a pathway that could conceivably take us to 450ppm by 2030, the world needs to reduce annual greenhouse gas emissions by 2020 by 17 gigatonnes of carbon dioxide equivalent (GtCO<sub>2</sub>e), relative to our current 'business as usual' pathway. Forestry could play a major part in this. McKinsey has assessed the costs associated with different solutions to combat climate change. Of the interventions that could help to make these reductions by 2020, McKinsey has estimated that 6Gt could come from energy efficiency, 4Gt from low carbon energy, 3Gt from agriculture and 6Gt from forestry.

The Eliasch Review,<sup>3</sup> completed in 2008, estimated that the global economic cost of climate change caused by deforestation could reach \$1 trillion a year by 2100. The Review estimated that the finance required to halve emissions from the forest sector to 2030 could be around \$17–33 billion per year, based on various estimates from the literature and from work commissioned by the Review.

Almost three-quarters of forestry sector emissions occur through the deforestation of tropical forests (with the remainder being due to the drainage and burning of peat lands). To stand any chance of avoiding dangerous climate change, we therefore need to find ways to maintain and enhance 'forest carbon' in developing forest nations.

In theory, there are four areas in which to prevent depletion of, and to enhance, forest carbon:

- (1) avoided deforestation (REDD) – avoiding a net decrease in forest area or volume – (an estimated 65% of the potential abatement by 2030)
- (2) afforestation of marginal pasturelands and croplands (13%)
- (3) reforestation of degraded lands which have very limited food or feed value (18%)
- (4) forest management measures, such as fire suppression, fertilisation and fencing to restrict grazing (4%).

McKinsey's analysis shows that much of the potential abatement from REDD (3.6GtCO<sub>2</sub>e per year) could come from activities that yield 'little economic value, including slash-and-burn agriculture and conversion to pasture'.<sup>4</sup> There is also considerable scope for afforestation and reforestation, which could deliver abatement of around 2GtCO<sub>2</sub>e per year. Clearly, for the people who are choosing how to use the land, the economic decisions to cut down or degrade the forest currently make sense. For these individuals to change their behaviour, an alternative source of revenue will be required.

Reduced conversion of forests to intensive agriculture could potentially deliver a further 1.2GtCO<sub>2</sub>e per year: this is a relatively high-cost option because the opportunity cost relates to the high income per hectare that can be achieved from planting commodity crops such as palm oil and soy.

These figures show that, from the global perspective of the fight against climate change, REDD and measures to enhance forest carbon through REDD+ represent good economic value relative to other abatement strategies.

<sup>1</sup> IPCC Fourth Assessment.

<sup>2</sup> McKinsey Project Catalyst analysis.

<sup>3</sup> Office of Climate Change (2008) Climate Change: Financing Global Forests. The Eliasch Review.

<sup>4</sup> McKinsey (2009) Pathways to a Low-carbon Economy.



From the perspective of people in the developing forest nations, seeking to generate and fund economic development, there will often be rational economic drivers for deforestation. To reap the benefits of reduced emissions from the forest sector, the world has to secure the co-operation of developing forest nations and find ways to steer the path of economic development away from that which involves extractive forestry, and make payments – or create other incentives – not to deforest.

## 2.2 The causes of deforestation vary between and within countries

Deforestation is a dynamic process, caused by a wide range of different factors. Most of the causes have an economic base, ranging from large-scale deforestation to create land for plantations for commodity crops – such as palm oil and soya – to subsistence usage of forests for fuel or for small-scale farming.

**Table 1: Types of forest land and strategies to address deforestation**

Type of forest	Characterised by	Action required
Forest core	<ul style="list-style-type: none"> <li>• Not currently threatened by deforestation; low population density</li> </ul>	<ul style="list-style-type: none"> <li>• Protect indigenous rights</li> <li>• Control infrastructure expansion</li> <li>• Pay communities for protection of forests</li> </ul>
Forest edge	<ul style="list-style-type: none"> <li>• Rapid agricultural expansion, high rates of deforestation</li> </ul>	<ul style="list-style-type: none"> <li>• Policing and law enforcement to prevent forest clearance</li> <li>• Revised programme of concessions</li> <li>• Control road construction to deter migration</li> <li>• Wider economic opportunities for communities</li> </ul>
Mosaic forests	<ul style="list-style-type: none"> <li>• Forests and agricultural activities co-exist; relatively high populations</li> </ul>	<ul style="list-style-type: none"> <li>• Incentivise sustainable forestry activities</li> <li>• Develop markets for environmental services</li> <li>• Enforce property rights</li> <li>• Support wider economic opportunities that reduce pressure on the forest</li> </ul>

Different strategies will be required in each type of forest land in order to stabilise forest loss, because each has a different combination of drivers to be addressed (Table 1). Investment in REDD+ should aim to disincentivise further encroachment into the forest core, and restore degraded forest in the highly populated areas where forest and other activities co-exist (termed ‘mosaic forest’).<sup>5</sup>

## 2.3 A range of activities is required to address the causes of deforestation

### 2.3.1: Capacity-building

Each developing forest nation will need support in designing and implementing its own ‘green’ development path. This is critical if alternative economic activities are to replace those that rely on deforestation or degradation of forests. Both up-front and ongoing activities will require funding.

Up-front activities will include:

- development of a country plan which reflects the nation’s own strategic priorities and which can account with some certainty for a value placed on its REDD+ activities by the rest of the world

<sup>5</sup> Chomitz K.M. (2007) *At Loggerheads? Agricultural expansion, poverty reduction, and environment in the tropical forest margins*. World Bank Policy Research Report.



- development of a legal and governance framework, including the establishment of a suitable national institution that could act as a distributor of funds received for REDD+
- investment in capacity to monitor forest growth or degradation
- training for personnel in reporting and governance to international standards.

Ongoing activities will include:

- investment in forestry management training and skills development
- efforts to curtail the local and global demand for products from unsustainable forestry practices
- policing and containing illegal logging and other unsustainable forestry practices.

Global initiatives already exist to support 'REDD-readiness' – for example UN-REDD, the World Bank's Forest Carbon Partnership Facility and the Forest Investment Programme under the Climate Investment Fund. Appendix 1 of the full report outlines the status of these initiatives as of May 2009. These will need to be assessed to establish whether they have the right mandates and areas of focus, and to establish the volume of additional funding that will be required.

### 2.3.2: Payments for reduced deforestation and degradation

Payments will be required to provide an incentive to individuals within developing forest nations to reorient their economic activities or develop alternative livelihoods that support the sustainable use of forests. To create behaviour change, in principle the amount payable needs to be sufficient to compensate people for benefits foregone. It may also need to include a premium to incentivise people to change their behaviour.

A wide and diverse range of people depend on the forests for their income, so these incentives will need to be tailored to address local circumstances. In some cases, the incentives will need to be targeted at members of communities who clear forests for subsistence agriculture. In some cases, support will be required for communities who already use the forests sustainably. Where the drivers of deforestation are large agricultural producers or logging companies, the incentives required to shift behaviour may be far greater.

Bolsa Floresta in Brazil<sup>6</sup> provides an example where forests are protected through a combination of payments to the local community to protect their forest, and cash subsidies for sustainable alternative economic activities. Clearly, a different model will be required to incentivise a palm oil company to expand onto degraded land rather than into new areas of forest: this might take the form of a subsidy, accompanied by penalties for companies that continue to deforest.

Change will almost certainly only happen if the users who intend to convert land to an alternative use (who are not always the 'owners') are compensated for profits foregone, and clearly the motivation of these actors will be fundamental to success. Success will also depend on putting a relatively simple system in place as quickly as possible.

Efficiency would appear to suggest that the highest payments should go to the communities where the forests are most at risk. But there are a number of problems with this approach.

Firstly, higher payments would be made to communities that have historically been poor at managing their forests. Communities that have been protecting their forests would lose out. Many people would consider it to be perverse and unfair to make substantial opportunity cost payments to the economic actors who have been responsible for significant deforestation and not recognise others who have historically helped to protect forests.<sup>7</sup>

<sup>6</sup> Global Canopy Programme (2008) **Forests NOW in the Fight Against Climate Change. Forest Foresight Report.**

<sup>7</sup> International Institute of Environment and Development (IIED) (2009) **Tenure in REDD: Start-Point or Afterthought?**



Secondly, a payment system of this kind could result in a substantial share of REDD payments going to the large, relatively wealthy and sometimes illegal cattle ranchers, loggers and agribusiness interests. In some countries, this could help to perpetuate a system of concessions that has failed to serve communities.<sup>8</sup> Foreign ownership of concessions might mean that the incentive payments leak out of the country. In other countries with poor governance, there is evidently considerable scope for incentive payments to be misappropriated. It should therefore be recognised that a system of payments cannot be based on the opportunity cost alone, and the variations need to be carefully considered according to the circumstances in each country. As McKinsey notes in its recent report *Pathways to a Low-carbon Economy*,<sup>9</sup> there are 'practical, political and ethical reasons' why it is likely that compensation will not be linked directly to the opportunity cost.

Close scrutiny of why the funds are necessary and how they are used would result in more effective deployment. Payments to communities for protection of their standing forest could be made transparently through an appropriate national institution with a governance structure that included representatives of the local communities, NGOs, the government and the private sector. This body would make decisions on how to allocate payments for protection of standing forests and the appropriate form this should take.

Clearly, while in some countries there are already suitable national institutions with strong governance (for example, Brazil has demonstrated that it can mobilise national financial institutions such as BNDES to support REDD), in others it will take some time to establish appropriate structures. In this interim period, it will be important to monitor deforestation activities on a global basis, as there is evidently a danger that they might be displaced from one country to another.

### 2.3.3: Investment

There is a range of investment strategies that would help to deliver REDD+. Some of these could yield early returns on investment, while others will require patient capital and a longer-term approach.

Investment opportunities include:

- afforestation, reforestation and sustainable forest management projects. In some of these, it may be possible to generate cash flows in the early years, but with patient capital there will be more opportunity to establish a sustainable long-term business;
- value-added processing to make timber extraction more efficient by reducing wastage, and create more in-country employment: this can improve both sustainable forest management activities employing selective extraction and existing timber plantations;
- investing in alternative economic activities for local communities that currently derive income from deforestation;
- investment in enhanced farming techniques such as more intensive cattle ranching.<sup>10</sup>

Many of these investment opportunities would have an indirect rather than a direct impact on REDD. They could largely be undertaken by the private sector. The public sector can play a role in catalysing these activities and ensuring they achieve a sufficient scale to meet the challenge of REDD, thus helping the developing forest nation economies to move from business-as-usual and generate sustainable livelihoods offering job security away from the forest frontier.

<sup>8</sup> See, for example, *The Rainforest Foundation and Forests Monitor (2007) Concessions to Poverty: The Environmental, Social and Economic Impacts of Industrial Logging Concessions in Africa's Rainforests*.

<sup>9</sup> McKinsey (2009) *Pathways to a Low-carbon Economy*.

<sup>10</sup> Cattle produce the potent greenhouse gas methane, so other interventions may also be needed to manage the greenhouse gas effects of this activity.



## 2.4 Activities addressing the causes of deforestation will need support from a range of financing sources

Funds will need to be provided through a combination of grant funds, early stage and concessional investment, private sector investment and (eventually) the carbon markets. The appropriate balance of these sources of finance will depend fundamentally on the circumstances of the country concerned and will change over time. These are described in more detail below.

### 2.4.1: Grant funds from richer nations to pay for the up-front costs and to pay incentives to communities to protect the forest.

Up-front payments – probably channelled through governments and NGOs – will be required to improve the enabling environment and the basic infrastructure to support REDD. It may not be easy to link these payments to specific REDD outcomes (because by definition they have to happen before any REDD outcomes can be achieved). But performance can be assessed by reference to a number of parameters such as milestones towards a national implementation plan that outlines the specific activities to achieve REDD, and establishment of certain essential institutions.

Payment of incentives to communities to protect the forest can be made in arrears on the basis of success in achieving REDD. As discussed above, it will be critical to establish a transparent process, involving consultation with appropriate stakeholders, to determine the scale and distribution of these payments. Otherwise, delivery of REDD could be simply achieved in inappropriate ways – for example, through forcibly removing communities from their land and deploying the military to make sure that no-one encroaches and the land is conserved as natural forest.

In many countries, it will be important to try to distinguish between the indigenous communities who have historically lived in the forest and those who are recent entrants. A compensation scheme is likely to create tensions between different groups because there will often be difficult negotiations over entitlement and how to share out funds. This process will require detailed and sensitive processes.

Although these funds are characterised as ‘grant funds’ and are not generating financial returns for the donors, it is important to note that these are generating environmental and social returns for the taxpayer in terms of protecting vital natural capital and reducing the risk of climate change. These payments should be described as payments for services provided by the developing forest nations, rather than as grants. This repositions the debate away from traditional concepts of ‘overseas development assistance’ and towards terminology that more readily recognises the service that the forests provide, and the interdependence between developing forest nations and the developed world.

An alternative way to describe the grants would be as ‘investment in natural capital’ – in other words, investment in the ecosystems we all rely on. Current financial systems fail to recognise this type of investment, which is nevertheless vital to the public good. These investments are likely to be made by governments initially, but increasingly by the private sector, as players recognise the direct value to them. They will be critical in shifting the allocation of capital globally towards more sustainable activities.

For example, the Global Canopy Programme is currently engaged in research (with the Natural Environmental Research Council, the Department for International Development and the Economic and Social Research Council) to develop a payments mechanism based on rainfall patterns in the Amazon. Once the links between business and ecosystems are more closely established, the beneficiaries of the rainfall generated by the Amazon should contribute to the costs of keeping the forests intact. Over time, it is possible that the value of ecosystems services to various economic actors will become clear enough that they will pay for this service, enabling other economic actors to make a return on investment by protecting the forest.



### 2.4.2: Early stage and concessional investments (debt, equity and insurance)

Early stage and concessional investments to achieve scale are a critical component of the funding package. Many activities might become commercially viable over time, but need early stage seed funding, or risk-sharing mechanisms, in order to get off the ground.

The need for concessional investment alongside commercial investment will vary from country to country. In some, there will be a need for demonstration projects funded heavily by the public sector. In others, private sector investors may only need to have certain specific risks covered. Appropriate risk-sharing mechanisms could include loans at a low or zero interest rate, provision of equity (where public sector funding could be exposed to the first loss if an investment performs poorly) or insurance (where public sector funding could, for example, cover political risk insurance). These mechanisms will be a key part of a successful strategy to catalyse private investment at scale.

There are various ways in which these early stage and concessional investments could be delivered:

- one is through the multilateral development banks, such as the World Bank, the African Development Bank and the Asian Development Bank;
- a second is through the development finance institutions (DFIs) whether multilateral, such as the International Finance Corporation, or bilateral such as CDC (in the UK), KfW (in Germany) and FMO (in Holland). These DFIs would then co-invest alongside private sector investors in the developing forest nations, applying appropriate standards of governance and sustainability to their investments, and supporting investments that are in line with the national implementation plan for REDD+;
- a third is through local financial institutions, when these are in place and suitable. For example, many countries have local development banks. The Amazon Fund is managed through the Brazilian financial institution BNDES;
- and a fourth is through insurance facilities such as MIGA, a scheme under the World Bank, designed to support developmentally beneficial investment in poorer countries by providing coverage for non-commercial risks such as political risks, transfer risks, expropriation and breach of contract.

Challenge Funds, where public money is put forward to match private sector money on a pilot project, have proved successful in other sectors in the past. For example, the Africa Enterprise Challenge Fund<sup>11</sup> has put public money to work supporting farmers in Africa to improve their yields on agricultural products such as cocoa and sorghum. The farmers themselves match the funding provided by the Challenge Fund. This process could potentially be applied to support early stage and pioneering forestry projects.

### 2.4.3: Private sector investment

The scale of private sector funding potentially available for REDD+ is significant and needs to be mobilised if the targets for REDD+ are to be achieved. Private sector investment can come from financial institutions, from companies of all sizes, from communities and from individuals. It can be raised through international capital markets or at regional or local level. The possible mechanisms are explored in Section 2.7 below. Private sector involvement will vary, depending on the country and the timing. In some countries, private sector investors already have sufficient capacity, are comfortable with the risks, and will invest without additional support from the public sector. In others, the private sector will only be able to take action if some capacity-building and risk-sharing takes place. Over time, the private sector will be able to increase investment as the infrastructure and enabling environment improve. The appropriate financing vehicles will vary between countries and regions, but microfinance institutions and community investment schemes are likely to be an important component.



#### 2.4.4: Carbon markets

Under the Kyoto Protocol, governments agreed to legally binding commitments for their emissions of greenhouse gases. Developed world (or 'Appendix 1') signatories can use three 'flexible mechanisms' to achieve these reduction targets – emissions trading (allowing countries to transfer national allocations between countries), Joint Implementation (investing in emissions reductions in another Appendix 1 country) and the Clean Development Mechanism (investing in emission reductions in developing countries). The recognition behind these three mechanisms is that climate change is a global problem and the location of greenhouse gas reductions is irrelevant in scientific terms.

The first commitment period of the Kyoto Protocol excluded REDD from the Clean Development Mechanism. However, REDD is likely to be included in the compliance carbon market in some form in the future. The nature of this, and the timing for REDD carbon credits to become available, is still unclear. Private sector investors are therefore wary of making commitments based on it. But capacity-building and support in this pre-REDD stage will enable countries to tap into the REDD carbon markets if and when they emerge.

When forest carbon is included in international agreements (whether separate from the industrial carbon market or integrated in it), this will represent an additional income stream for investors. Under one scenario modelled by the Eliasch Review,<sup>12</sup> for example, \$7 billion could be generated for forestry by the carbon markets in 2020.

Some of the proposed interim mechanisms are based on payment for opportunity cost, and these would of course result in different distributions and volumes of payments compared with mechanisms based on carbon. This could create practical difficulties in any transition, with implications for the long-term sources of funds. Any interim finance for REDD, therefore, needs to support and not undermine the REDD carbon market when it does come on stream.

In the meantime, some funds are flowing to forests through the voluntary carbon market, although the numbers are not at a scale to make an impact on the need.

It is estimated that forestry carbon credits comprised 10% of the 54MtCO<sub>2</sub>e that traded on the over the counter (OTC) voluntary carbon markets in 2008.<sup>13</sup> Forestry carbon credits comprised 22% of the 69MtCO<sub>2</sub>e that traded on the Chicago Climate Exchange (CCX) in 2008. At a rough estimate of US \$5 per tonne (based on an estimate of around \$7/tonne in the OTC market, lower in the CCX), this total of 20MtCO<sub>2</sub>e would have generated approximately \$100 million.<sup>14</sup>

A range of different standards is applied for forestry projects in the voluntary market. Most seek to provide a clear and rigorous analysis of the carbon emissions reductions that are being delivered by the project. However, some focus on testing new project methodologies: in some cases this means some uncertainty over the exact amount of carbon reduction they deliver, but the testing process enables credible credits to be generated over the longer term. Others (for example, projects certified by the Climate Community and Biodiversity Alliance) have a particular emphasis on the co-benefits.

<sup>11</sup> See <http://www.aecfafrica.org/>.

<sup>12</sup> Office of Climate Change (2008) *Climate Change: Financing Global Forests. The Eliasch Review*.

<sup>13</sup> *Ecosystem Marketplace and New Carbon Finance (2009) Fortifying the Foundation: State of the Voluntary Carbon Markets 2009..*

<sup>14</sup> The numbers here depend on how many of the traded credits were 'retired' – ie taken out of circulation – and how many were re-traded.



Some proposals have suggested that it would be possible to raise funds now – ahead of the REDD carbon market coming into play – secured by future REDD credits. One idea is that this could be generated by issuing a bond guaranteed by Governments.

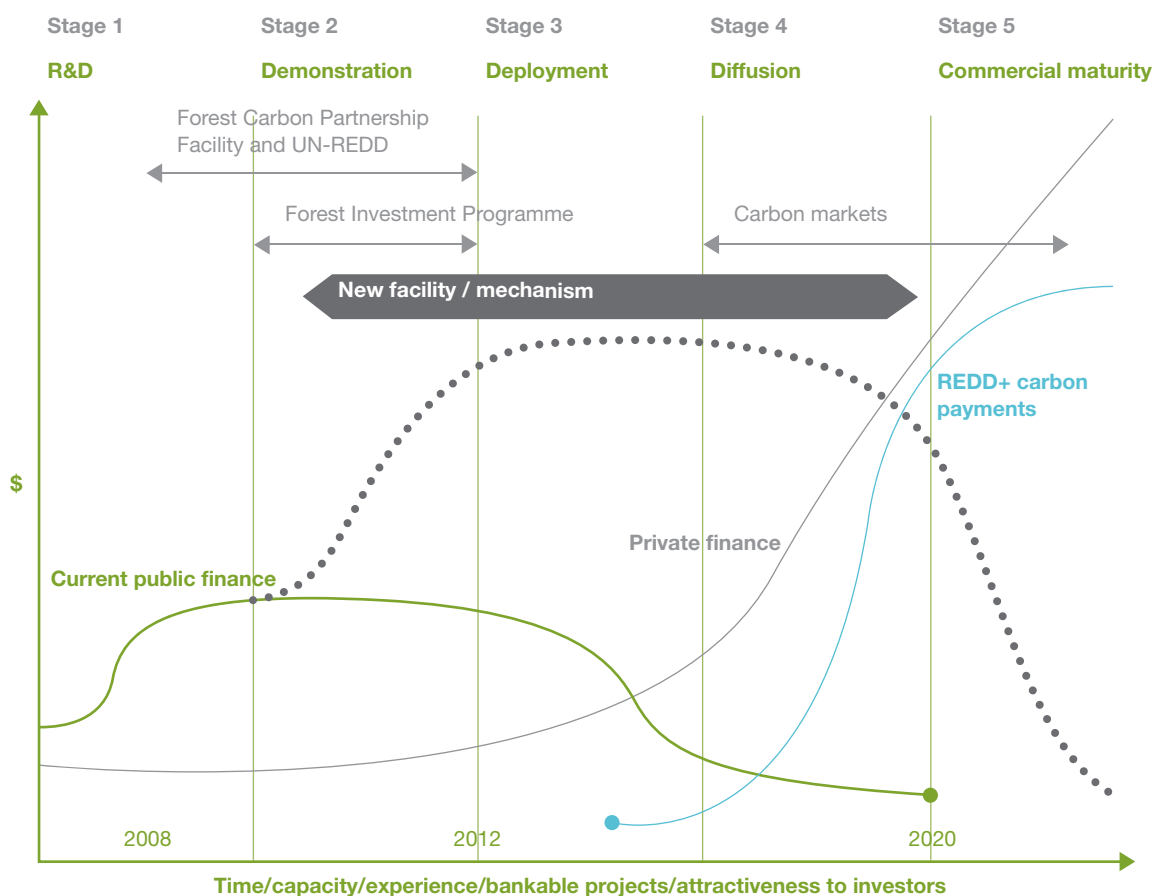
Broadly, interim finance for REDD+ could present an opportunity to position developing forest nations for REDD+ carbon markets, whilst enabling funds to flow to protection of standing forests in the short term.

## 2.5 Funding sources will need to be blended in a way which works for both developed countries and developing forest nations

There is no ‘silver bullet’ that will address REDD in all countries over all timeframes. A blend of funding sources will be necessary in order to meet each country’s individual requirements, given their unique economic profiles.

However, it is clear that a financing mechanism is needed now to create flows of funds into forests in a way that will work for both developed countries and developing forest nations. It will need to combine the strength of all of the different financing mechanisms outlined above. While much of the funding in the early years will need to be through grants, there will be scope for the private sector to play a greater part as time goes on. Figure 1 illustrates the phased approach that will be required.

**Figure 1: Phased approach to REDD+ funding**



The new facility in Figure 1 would need to be made up of a combination of grants and investments. We would therefore describe it as a blended finance facility. The size of the fund would need to be determined through individual countries’ assessment of their own need, based on:



- an estimate of the capacity-building costs for REDD readiness and in preparation for inward investment
- an assessment of the payments that would need to be made, to whom and for what, to incentivise economic activity away from the forests
- an assessment of the current appetite from the private sector to invest in activities that achieve REDD+
- an assessment of the interventions that could be made through concessional finance, co-investment and insurance to catalyse further private sector investment.

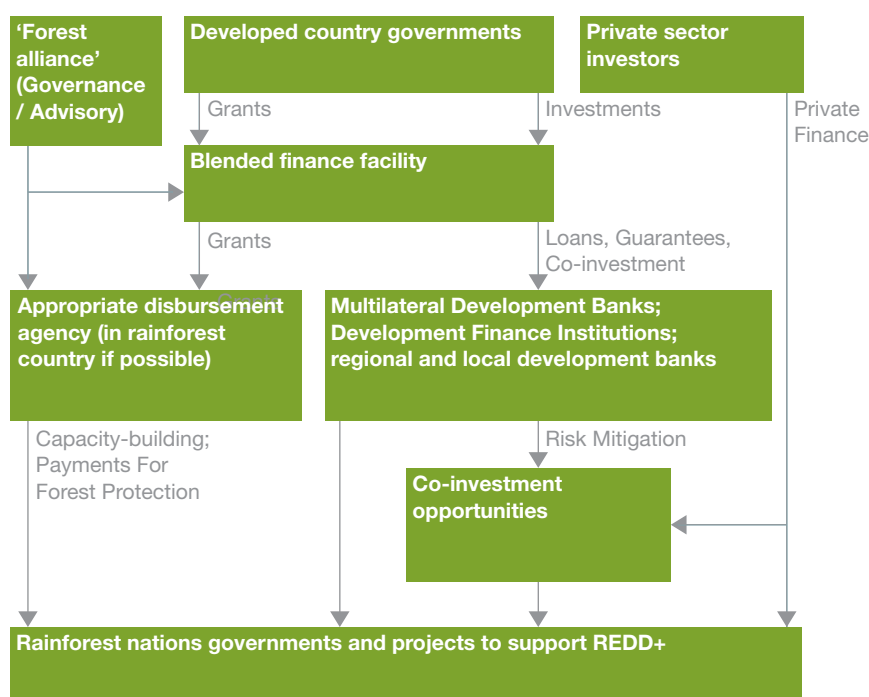
For example, a recent estimate by McKinsey of the costs of avoided deforestation in Brazil<sup>15</sup> has identified annual costs of \$1.1 billion in institutions-strengthening, \$0.5 billion in monitoring and enforcement, \$0.8 billion in incentives, and \$3.3 billion in economic and social development.

Some clarity could be achieved through establishment of a new facility that can pool all of the grant and investment funds and act as a centre of expertise. This could be supported by a 'forest alliance', similar in concept to the Global Alliance on Vaccinations and Immunisation (GAVI), which could have representation from all stakeholders, including developing forest nation governments, forest communities, developed world governments and NGOs, and could oversee the running of the facility. One particular role could be to ensure that the national agencies tasked with distributing carbon payments to communities themselves have appropriate governance structures in place.

A new facility and forest alliance of the kind proposed here would need to fit with the emerging model of post-2012 financial architecture. But we suggest that it makes sense to have institutions dedicated to forests, because of the range of stakeholders that will need to be engaged, and the unique nature of forests in the climate debate.

## 2.6 A possible model for the public-private funding structure

Figure 2: A possible model for public-private funding to address deforestation



<sup>15</sup> McKinsey (2009) Pathways to a Low-carbon Economy for Brazil.



## 2.7 Public sector finance can be enhanced by private sector participation

A range of different investment structures can act as the vehicles for private sector investment. Different investment vehicles will suit each category of investor, the country risk associated with the project and the stage of the project.

The Forest Investment Review contains five detailed chapters that investigate these investment vehicles in more depth, as summarised in Table 2. All of the chapters are written by independent experts.

**Table 2: Contents of the Forestry Investment Review**

Chapter	Title	Overview
1	The attractiveness of investments in REDD+ projects to the private sector	Provides an outline of the requirements of different types of investor
2	Exploring the characteristics of existing forestry investment vehicles	Provides details of the existing forestry investment vehicles in place, explores what would be needed to encourage greater investment, and highlights the need for care in encouraging forestry investment
3	Stimulating private capital investment to achieve REDD+	Looks at the different types of REDD+ investment
4	The potential of risk mitigation mechanisms to facilitate private sector investment in REDD+ projects	Considers the types of insurance that might be available to support private sector investment in forests.
5	The role of innovative financing in reducing the rate of deforestation in tropical countries	Assesses the part that innovative financing mechanisms might play in generating funding for forests

### 2.7.1: Institutional investors in the international capital markets

The international capital markets are a huge potential source of funding, but there is very little appetite for assets that fall outside the 'tried and tested' universe.

Some discussions with pension funds and insurance companies to date have revolved around the idea of a bond that raises finance for (a) capacity-building and (b) payments relating to REDD. This could involve an international finance facility where future payments are front-loaded and repayments guaranteed by either a government or a multinational agency such as the World Bank. In this case, the private sector would take on no forest risk.

Alternatively, a bond could be structured so that investors share some risk, with repayment linked to the performance of forestry-related or other green-related investments. Such a bond would be complex to execute and consequently investor appetite may be small.

Chapter 1, 'The attractiveness of investments in REDD+ projects to the private sector', looks at the characteristics that would attract investors to these bonds.

Institutional investment direct into forests is currently low, especially outside the developed world, as risks are perceived to be high. Chapter 2, 'Exploring the characteristics of existing forestry investment vehicles', argues that, currently, not only do institutional investors fail to recognise the potential for forestry as an asset class with low levels of correlation with other assets in their portfolio, they also have a poor understanding of forestry investment in general. This restricts the scope of institutional investment in forests.



Many of the forestry funds that are in place do not distinguish between different forms of forestry – for example, plantation investment and small-scale harvesting from natural forests – and cannot assess whether a project contributes to REDD or not. This is not straightforward, and needs careful analysis of the underlying factors. For example, while many large-scale plantations may have a negative impact on biodiversity, investment for afforestation or reforestation of mixed-species plantations can have a positive benefit. Similarly, selective harvesting of small volumes of high-value timber from natural forests, unless carefully managed, can potentially open up access to forests, lead to migration and thereby indirectly contribute to degradation.

There is potential for new tracking technologies – for example, Helveta, in which production of timber is monitored using a tag-based system and followed through the supply chain – to play a role in providing investors (and consumers) with greater confidence about the activities of certain forestry companies, and support for the roll-out of these technologies could be very valuable.

Institutional investors have also committed funds to securitisations such as those promoted by Blue Orchard and Developing World Markets for microfinance. There may be scope to use similar techniques to package future cash flows from forests for sale to investors, provided the underlying cash flows are sufficiently robust.

Investment through the channel of forestry funds could be an effective way to deliver private sector finance for REDD, provided that the funds have clear and robust criteria for sustainability. However, it is important to note that, without such criteria, increased institutional investment in forestry could exacerbate destruction of the forests.

### 2.7.2: Equity/loan investment in forests in-country

Equity/loan investment in forests in developing nations can be generated through international finance or through local finance. The range of possible investments includes:

- sustainably managed forests
- afforestation/reforestation projects
- community projects, including projects that focus on non-timber forest products, or provide alternatives to wood-burning or more efficient ways to generate energy
- investment in planted forests to increase efficiency and sustainability
- investment in standing forests/ecosystems services.

The arguments for including plantations and other carbon sinks as part of a country's REDD strategy fall into two main categories: first, that enhancement of all terrestrial carbon is essential in combating climate change; and second, that demand for timber products is unlikely to fall, especially in developing economies, and therefore development of sustainable supplies of timber, wood-based energy and other forestry products is essential to reduce pressures to extract natural forest.

Without investment in the forestry sector, the pressures of supply and demand will cause price increases for timber products, creating a greater drive for deforestation.

Uganda provides an example of how plantation forestry fits with a country's REDD strategy. In Uganda's initial analysis of the strategy to implement REDD ('Readiness Project Idea Notes'), charcoal production and collection fuel-wood are given as major factors contributing to the country's annual 100,000ha rate of deforestation. Uganda estimates that it requires 500,000ha of sustainably managed plantations to meet future demand for forest products. Investment in plantation forests is key for Uganda to be able to counter extractive forestry and stem forest loss.

Peru provides an illustration of trying to develop sustainable forestry management. A forestry law passed in 2002 regulates extraction volumes to ensure the sustainability of the Amazon



rainforest. In 2003, the government auctioned off around 8 million hectares of concessions, but many of the buyers were undercapitalised and could not therefore develop sustainable forestry activities. This potentially left concessions open to illegal logging activities. Increased availability of capital (and sustainable forestry management expertise) is critical to enable the more long-term perspective that is required.

As well as forest-related activities, investment in activities outside the forests that reduce pressure on them may also be very relevant to REDD. Chapter 3, 'Stimulating private capital investment to achieve REDD+', looks at these different types of REDD+ investment. Many of these private sector activities will generate employment and tax revenues for the developing forest nation.

### 2.7.3: Risk mitigation activities that support private sector investment in REDD+

Private sector investment may need to be supported through public sector interventions, particularly for high-risk countries and for activities that require early seed capital before commercial returns can be generated. This might be achieved through:

- early stage seed funding for higher-risk projects
- co-investment with development finance institutions
- concessional loans
- subsidised insurance.

Chapter 4, 'The potential of risk mitigation mechanisms to facilitate private sector investment in REDD+ projects', considers the types of insurance that might be available to support private sector investment in forests.

## 2.8 Innovative financing mechanisms could be used to generate funds for forests

Innovative financing mechanisms have been applied in other contexts, for example in the health sector, to generate funds either on a greater scale or more rapidly than would otherwise have been the case. For example, the International Finance Facility for Immunisation 'front-loaded' donor commitments on Overseas Development Assistance (ODA), raising a bond on the international capital markets backed by future ODA flows. The funds could therefore be used immediately to finance immunisations.

Innovative financing mechanisms can be applied to achieving REDD, building on experience in other sectors such as health. However, the scale of the funding required, and the concentration on a relatively small number of countries, creates particular challenges.

Given the global nature of climate change, it is important that innovative financing strategies are chosen that can accommodate the broadest group of nations. An International Finance Facility for Forests would represent a valuable tool for the European donors to accelerate the volume of Overseas Development Assistance, but will need to be combined with other solutions, given the need for long-term funding and the importance of countries outside the EU.

In addition, rainforests have strong emotional appeal to the general population in both developed and developing countries. Harnessing this support through voluntary schemes is likely to play a key role alongside direct multilateral government activities.

Chapter 5, 'The role of innovative financing in reducing deforestation in tropical countries' looks at this area in a little more detail.



## 2.9 Demand for sustainable products also has a critical role to play

Support for private sector investment in REDD+ needs to be accompanied by a strengthening in the market for sustainable products, and penalties for products that have led to forest destruction.

Private sector investment in REDD+ will also benefit from measures being put in place to create new markets for forest and agricultural products from sustainable sources, and to reduce demand for products from unsustainable ones. This will require regulation and ‘choice-editing’, and an increased drive to raise consumer awareness. This applies in both developed world markets and in developing forest nations.

## 2.10 It is clear that there are ongoing challenges associated with investment in REDD+, which need to be carefully assessed and managed as the mechanisms evolve

It is clear that there are ongoing challenges associated with investment in REDD+, which need to be carefully assessed and managed as the mechanisms evolve. The chapters in this report touch on these ongoing challenges:

- how to achieve the confidence required in monitoring, reporting and verification of the sustainability of forest activities, including carbon, biodiversity and community impacts
- how to ensure that the mechanisms developed for payments for REDD+ do not result in outcomes that disenfranchise local communities
- how to get the right balance between the need for developing forest nations to retain the necessary sovereignty over their development plans, and particularly their strategies for implementation of REDD+, while meeting ‘donor’ desires to monitor the use of funds
- how to achieve a level of consultation that allows all stakeholders to express views and concerns, while recognising that urgent action is required
- how to ensure that benefit-sharing and alignment of interests are at the heart of the mechanisms developed.

These issues are recognised in the recommendations below, but are not the focus of this report and will need further consultation with experts in the various areas.

# 3 recommendations

In terms of developing public–private collaboration and public policy to bring private sector investment to bear on REDD+, the project team agreed on eight principal recommendations for government:

- (1) Deliver early finance for capacity-building in developing forest nations:
  - where appropriate, support countries in the development of their national plans
  - help countries identify risk mitigation mechanisms for investors to catalyse appropriate private sector activity, as part of national plans
  - enhance countries’ capacity to manage inward investment in REDD+, through training and education in forestry and finance
  - provide early funding determined by the needs outlined in each country’s national implementation plan.
- (2) Deliver early finance to pay developing forest nations for protecting their forests:
  - assess country plans both on their effectiveness and efficiency (targeting the key drivers of deforestation and degradation) and on their fairness (ensuring that the distribution of payments recognises the roles and rights of forest communities). In some countries, there may be little conflict between these two objectives. In others, the role of large agricultural interests or the pattern of

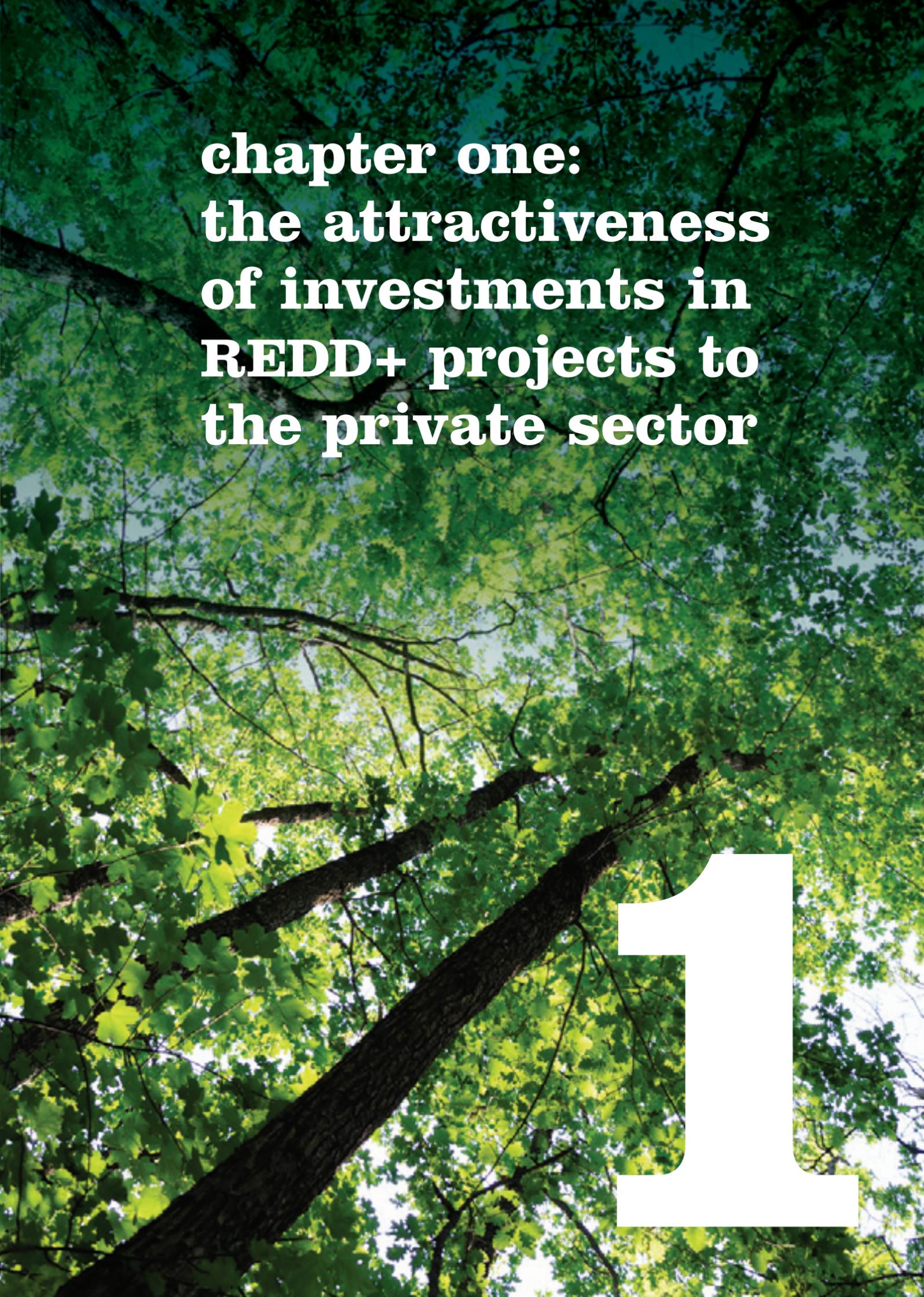


- ownership of concessions may mean a divergence between these two objectives;
- agree clear and transparent principles for disbursement of the funds, to enable developing forest nations to retain sovereignty and plan appropriately.
- (3) Promote markets for sustainable products:
- support an EU directive to require that EU imports of finished products containing wood are from appropriate sources
  - support the development and application of technology to track timber products
  - provide funding support for certification of sustainable products, which can be prohibitively expensive
  - support rainforest nations in activities to promote domestic markets for sustainable products
  - ensure that all investment support is aligned with sustainable production.
- (4) Establish a 'blended finance facility' and 'forest alliance':
- establish a 'blended finance facility' to take in grants and investments from developed country governments
  - establish an independent institution (a 'forest alliance') to oversee disbursements, with a governance structure that includes representatives from developing forest nations and contributing developed countries
  - generate consistent certified information on global opportunities such as mapping, soil types, land-use history, tenure and infrastructure
  - determine clear principles for the facility in terms of benefit-sharing, certification and independent monitoring
  - provide guidance on what qualifies as contributing to REDD+ (including a definition of sustainable forest investment).
- (5) Broaden access by private capital to risk mitigation and co-investment opportunities:
- make forestry-focused debt and equity facilities available, with dedicated personnel, to offer risk-sharing, particularly in the more 'difficult' countries
  - ensure that these facilities are accessible in particular to small- and medium-scale activities, possibly through local intermediaries
  - publicise the availability and capacity of existing risk mitigation facilities for risk insurance, provide additional resources and expertise for the insurance of forestry investments, and offer subsidised insurance for REDD+ investment
  - ensure that the principles for benefit-sharing, certification and independent monitoring are applied as preconditions of all funding support.
- (6) Implement measures to support greater institutional investment in REDD+ :
- provide funding for activities that improve developed world investors' understanding of sustainable forestry investment
  - award a mandate for a fund of funds that would select and invest in the best REDD+ funds in developing forest nations.
- (7) Continue to support a programme of research on carbon in forests:
- build on the great deal of excellent research going on in this area<sup>16</sup>
  - devote more focus to some key areas – for example, the role of community forest management in REDD+ and the long-term effectiveness of REDD+ strategies in different regions.
- (8) Continue to support research on the value of ecosystems services:
- support work into how investment decision-making by public and private sectors might take into account the impacts on ecosystems and the services they provide (natural capital), so that capital is allocated more effectively to deliver vital public goods
  - expedite work that considers how responsibility for funding might be transferred over time from the public sector to the private sector actors who benefit from the ecosystems services.

Some of the recommendations are explained in more detail in the individual chapters

<sup>16</sup> For example, The Prince's Rainforest Project, the Woods Hole Research Centre, WRI, the Natural Environment Research Council, the Terrestrial Carbon Group, the Ecosystem Climate Alliance and many others.





**chapter one:  
the attractiveness  
of investments in  
REDD+ projects to  
the private sector**

**1**

## About the authors

Alberto Thomas, Stuart Clenaghan  
and Jacopo Levi Morenos

Alberto Thomas, Stuart Clenaghan and Jacopo Levi Morenos are principals at Eco System Services Limited (ESS). ESS was founded in 2007 to focus on financing of sustainable tropical forestry and land-use projects. The company provides consultancy services alongside project investment by its principals.

ESS's principals are experienced early stage investors in sustainable forestry and carbon finance including: Green Gold Forestry Limited, a UK sustainable timber products company operating in Peru. New Forests Company, the largest reforestation company in Uganda; Carbon Capital Limited, which provides reforestation and renewable energy in China and SE Asia; MTM Capital Partners, a fund manager specialising in coal mine methane recovery in China (bought by the MAN Group).

ESS is a donor supporter of Iwokrama, a one million acre rainforest reserve gifted by the Guyana government to the Commonwealth, where Stuart and Jacopo served as advisers.

Stuart, Jacopo and Alberto have extensive banking experience, especially in fixed income structured finance and trading. They met when they worked together at UBS.

## highlights

- Drivers of private sector investment in REDD+ projects depend on the category of investors considered, the country risk associated with the project and the stage of the project.
- Public sector policies aimed at incentivising private investment must address the need to stimulate investment from the class of investors which is most appropriate given the stage of development of the host country and the stage of the REDD+ project.
- Much of the discussion around private sector investment in REDD has revolved around 'rainforest bonds'. In many of the proposals, the bonds have a guarantee from either a country or a multilateral organisation, so the investor is not in fact putting any money at risk in the rainforest.
- If developed world governments are looking to share with the private sector the cost and the risk of investing in rainforests, then alternative financing mechanisms are required.
- We have identified the following two focus priority areas: increase the liquidity of investments in REDD+ projects and increase capacity in the insurance sector (both public and private) in providing country risk insurance. Increased liquidity of forestry investments in rainforest nations is key to accelerate the pace of private capital inflows into REDD+ projects. As the liquidity of an investment instrument is inversely correlated with the country risk associated to it, progress on these two focus areas should be targeted simultaneously.



# introduction

- In Section 1 of this chapter, we look into the various categories of private investors (high net worth individuals, pension funds, mutual funds, venture capital funds etc.) and we explore:
  - what attracts each player to invest in a REDD+ project based on the stage of the project within its business cycle and the amount of political risk associated with the country that hosts the project. We introduce a graphic representation of the private sector players involved at the different stages of the business and country development cycle;
  - which public sector deliverables are able to catalyse private investment at each point of the business cycle.
- For each category of investors we analyse the factors that drive their investment and draw a set of recommendations (from increasing investments liquidity to reducing country risk) aimed at increasing investors' financial investment in REDD+ projects.
- In Section 2 of this chapter we look into the characteristics of an international finance facility (IFF) bond that would be invested in projects to stop deforestation in developing forest nations. We examine the pros and cons of an IFF versus 'rainforest bonds', whose repayment is linked to the performance of forest related investments. In the other chapters of this report, authors illustrate how these two instruments for the raising of front-loading finance serve different purposes and cannot be seen as alternative mechanisms to achieve the same goals but, rather, as complementary.

## 1 measures to stimulate private sector's investment in REDD+

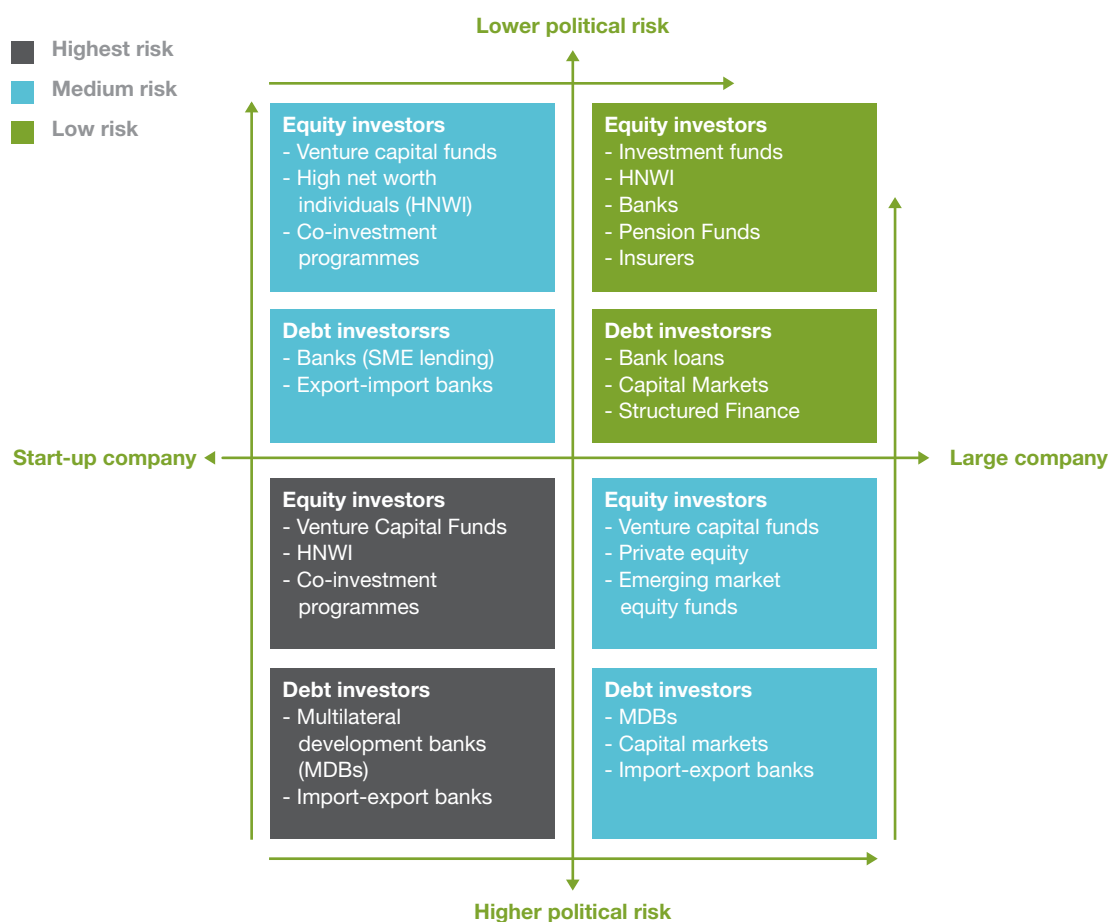
### 1.1 Private investment in REDD+

Each developing forest nation offers unique opportunities for investment, but with unique challenges too: political, climate, soil, rainfall, topology, topography, infrastructure and so on. Each of these factors will impact the development path of REDD+ enterprises.

Figure 1 (over page) represents the relevant segments of the private sector that invest in the debt and equity, respectively, of companies managing REDD+ projects based on the level of risk of the investment. In this diagram, the level of risk is determined by two variables: the size of the company and the amount of political risk associated with the investment. We have used a 'traffic light' colour coding system to rank the appetite to the private sector, with green representing the lowest level of risk associated with the investment, and red the highest.



**Figure 1: Segments of the private sector investing in the debt and equity of companies managing REDD+ projects (SME, small and medium enterprises)**



An investment in a country characterised by high political risk (eg land tenure issues, government instability, uncertain legal framework) would require high returns and would require de-risking mechanisms to attract broader interest from investors.

The investment cycle in REDD+ can be represented as in Box 1.

### Box 1: Investment cycle in REDD+

#### Quadrant 1: start-up, high political risk phase (bottom left)

Characteristics:

- start-up status of new forestry businesses implies need for seed-equity capital
- high political risk.

Drivers of private sector investment:

- high returns
- potential for capital appreciation, through exit from IPO,<sup>17</sup> company sale
- mainly domestic investors or investors with prior investment experience in the host country.

Public sector deliverables:

- expand mandate of the Multilateral Investment Guarantee Agency (MIGA)
- incentivise investment in VC4S<sup>18</sup> and private equity funds
- establish centralised unit for legal support for REDD+ businesses
- establish framework for improvement of governance in rainforest nations
- establish new or enlarge mandate of existing, co-investment programmes
- implement measures to create secondary market in forestry businesses.



### Quadrant 2: start-up, low political risk phase (top left)

#### Characteristics:

- start-up status of new forestry businesses implies need for seed-equity capital
- low political risk.

#### Drivers of private sector investment:

- high return prospects
- potential for capital appreciation through exit from IPO, company sale.

#### Deliverables from public sector:

- incentivise SME<sup>19</sup> lending by in-country commercial banks
- expand mandate of MIGA
- incentivise investment in VC4S funds
- establish centralised unit for legal support for REDD+ businesses
- establish new or enlarge mandate of existing, co-investment programmes
- implement measures to create secondary market in forestry businesses.

### Quadrant 3: growing business, high political risk phase (bottom right)

#### Characteristics:

- high political risk
- expansion
- capital equipment
- working capital
- staffing
- operating track-record.

#### Drivers of private sector investment:

- high returns prospects
- potential for capital appreciation, through exit from IPO, company sale
- dividends
- long-dated cash flows may attract pension fund investments, if political risk is mitigated.

#### Deliverables from public sector:

- incentivise SME lending by in-country commercial banks
- expand MIGA mandate
- develop co-investment programmes
- off-take guarantees.

### Quadrant 4: growing business, low political risk phase (top right)

#### Characteristics:

- low political risk
- expansion
- capital equipment
- working capital
- staffing
- operating track-record.

#### Drivers of private sector investment:

- long-dated cash flows attractive to pension funds
- dividends
- eligibility for most categories of investors
- portfolio diversification.

#### Deliverables from public sector:

- policies aimed at improving efficiency of capital markets in emerging markets (bond and equity markets).

<sup>17</sup> **IPO stands for initial public offering, which is the offering of listed shares of a company on a public stock market.**

<sup>18</sup> **VC4S means venture capital for sustainability. The term refers to venture capital specialised in sustainable development investments.**

<sup>19</sup> **SME stands for small and medium enterprises, which the EU commission (under recommendation 2003/361/EC) defines as those enterprises which have a turnover of less than €50 million per annum, a headcount of less than 250 and a balance sheet of less than €43 million.**



Initially, investment in new REDD+ businesses is likely to fall within quadrant 1 or quadrant 2. In both quadrants, focus from the public sector should be aimed at de-risking the investment in new businesses through such measures as political risk insurance, provision of debt and equity finance, off-take agreements, and co-investment programmes.

As the economic and legal frameworks in developing forest nation evolve, the country becomes more attractive to foreign private investment, and this accelerates the development of larger enterprises. It is likely that whilst perceived political risk may remain high, enterprises could nevertheless grow to be sizeable. Hence, start-ups that begin in quadrant 1 are likely to evolve through quadrant 3 before reaching quadrant 4.

As illustrated in Section 3.2, investment in larger, possibly listed, companies is accessible to a wider range of investors. The broader spectrum of investors will require lower returns, thereby reducing the requirement for risk mitigation or concessionary finance.

Different investor groups will participate at each stage of the life of a REDD+ enterprise – start-ups are likely to have different investors to enterprises with an established track record. Likewise, some investors will have greater appetite for investment in countries with perceived high risks, whereas others will accept lower returns in trade-off for lower perceived country risk.

It is necessary to deliver the appropriate incentives and risk mitigation measures at each stage of an enterprise's life and in line with requirements of business environment of the host nation. This highlights the importance of segmenting the investor community to identify the specific issues that need to be addressed to attract private sector investment in REDD+.

If strategies to stimulate investment in REDD+ are successful, there will be a migration towards Quadrant 4 where mainstream markets and institutions offer easier access to equity and debt finance with limited need for credit enhancement or other risk mitigation.

In Section 1.2 of this report we analyse the conditions that need to be fulfilled to attract investment from private sector into REDD+ businesses.

## 1.2 Which categories of private investors?

Private investment in tropical forest conservation currently represents a fraction of the \$15–30 billion estimated by the Eliasch Review to be needed annually. To widen the spectrum of investors in REDD+ and the size of the market, financial instruments have to:

- satisfy criteria that make the investment eligible under the specific regulations of the relevant category of investors
- mitigate the major financial risks associated with an investment in the projects, in particular political risk.

These are the aspects on which we will focus in this section of the report.



### 1.2.1: High net-worth individuals

Generally, private banks classify as high net worth individuals (HNWIs) those who hold financial assets in excess of \$1 million. It is estimated<sup>20</sup> that, in 2007, approximately 10 million people worldwide fell into the HNWI category, with an aggregate wealth of \$40 trillion.

Given the greater freedom with which individuals, relative to institutions, can allocate their assets, venture capital has flowed largely from wealthy private clients as opposed to stringently controlled institutional investors.

The combination of potentially high returns and social responsibility underpin the rising popularity of 'green investing' among HNWIs across the globe. For these same reasons, this segment should be a primary target for any global initiatives directed to increase the leverage on the private sector in forestry investments.

Roughly 12% of HNWIs and 14% of ultra-HNWIs around the world allocate part of their investment portfolio to green technologies and alternative energy sources. Regionally, the most environmentally attuned HNWI and ultra-HNWI populations, as measured by the percentage of affluent investors allocating to green investing, were found in the Middle East and Europe – with participation rates ranging from around 17% to 21% in 2007, all exceeding global averages. By comparison, only 5% of HNWIs and 7% of ultra-HNWIs in North America allocated part of their portfolio holdings to green investing. It is interesting to note that North America was the only region in which social responsibility was the primary driver of HNWIs' green investing. Among all HNWIs worldwide, approximately half pointed to financial returns as the primary reason for their allocations to green investing.

Concerning the forestry sector in particular, HNWIs are already providing equity to REDD+ projects which typically take the form of private equity investments. In order to be attractive, the investment has to provide comparable IRRs<sup>21</sup> to alternative opportunities ie in excess of 10–15%. (Recommendations are listed in Box 2).

#### Box 2: Recommendations

**In order to increase HNWIs' allocation to forestry investment it is necessary to:**

- (1) de-risk investments from political risk (see section 1.3.1 below)
- (2) raise HNWIs' and private banks' awareness of investment opportunities in REDD+, their return potential and their social aspects
- (3) increase the number and the size of the projects so that private banks can also invest via their 'discretionary management' mandates
- (4) incentivise the development of private equity funds, venture capital funds, exchange-traded funds and mutual funds specialised in the REDD+ sector (see Section 1.2.3 on collective investment schemes).

### 1.2.2: Pension funds

The potential allocation by pension funds to sustainable forestry as an asset class will probably be limited to the bucket of high-return, uncorrelated investments (Table 1). In the UK, the typical pension funds' portfolio allocation to private equity is 5% and to alternative strategies is 2–3%. Nevertheless, this amounts to a large sum when the size of the private pension funds industry is taken into account.

<sup>20</sup> Cap-Gemini Merrill Lynch (2008) World Wealth Report 2008.

<sup>21</sup> IRR stands for internal rate of return, and is a parameter widely used to indicate the return of a project or a financial instrument based on the projected cash flows.



Table 1: Assets Under Management (AuM) of pension funds

Country	AuM of pension funds USD billion <sup>22</sup>	1% allocation to forestry USD billion
USA	10,200	102
UK	2,000	20
Canada	1,500	15
The Netherlands	1,000	10
Australia	950	9.5
Scandinavia (Denmark, Finland, Norway, Sweden)	916	9.2
Switzerland	550	5.5
France	179	1.8
Germany	136	1.4
Spain	136	1.4
Total	17,600	175

As mentioned above, generally speaking there is not a set of investment guidelines or regulations applying to pension funds. Larger funds rely on their in-house investment expertise when deciding on the most appropriate investment strategies while smaller funds tend to rely on the advice provided by specialised advisory firms (eg Mercer, Watson Wyatt, Tillinghast Tower Perrin, Redington Partners).

It must also be noted that pension funds account for approximately 20%<sup>23</sup> of all assets under management (AuM) of the European asset management industry, both undertakings for collective investment in transferable securities (UCITS) and non-UCITS.

Policy interventions aimed at incentivising investment by collective investment schemes into REDD+ projects will therefore have also an impact on pension funds' indirect allocation to this asset class. (Recommendations are listed in Box 3.)

### Box 3: Recommendations

- (1) implement measures aimed at increasing the size of collective investment schemes (both those dedicated to retail investors and those reserved to sophisticated investors), specialised in investment in climate change and, more particularly, in REDD+ projects
- (2) promote independent study by leading pension consultants in analysing the appropriateness of forest-related investment for pension funds (eg correlation with other asset classes)
- (3) explore the possibility of adopting regulations that provide incentive for the allocation of funds to REDD+ projects via VC4S, for example (see below).

### 1.2.3: Collective investment schemes (thematic funds, UCITS/mutual funds, private equity funds, venture capital funds)

#### 1.2.3.1: Open-ended investment funds

The US mutual fund industry and the European UCITS industry are the two largest asset management markets in the world with \$9.6 trillion<sup>24</sup> and €6.1 trillion<sup>25</sup> at the end of 2008. The size of non-UCITS market was €1.5 trillion. Non-UCITS includes hedge funds and other specialised lightly regulated funds.

<sup>22</sup> Source: OECD, figures are as of end of 2007, except for the UK where the figures are as of end of 2006. AuM means assets under management

<sup>23</sup> Source: European Funds and Asset Management Association (2008) Annual Asset Management Report – Facts and Figures.

<sup>24</sup> Source: Investment Company Institute.

<sup>25</sup> Source: European Funds and Asset Management Association.



UCITS are open-ended collective investment schemes which must comply with the provisions set in European Directives in order to be 'harmonised', ie be awarded a passport for cross-border selling within the EU. UCITS are an important catalyst for increasing the private sector's investment in REDD+ as they provide liquidity, diversification in addition to satisfying set standards of transparency and surveillance. The same can be said about US mutual funds.

In the remainder of this section we focus on UCITS only.

In 2008, Eurosif's study on socially responsible investments (SRI) estimated the global market size (measured as AuM) at €5 trillion. The size of the European market at the end of 2007 was estimated at €2.665 trillion. Approximately 94% of investors in Europe are institutions and the remainder are HNWI and retail investors (ie individuals, families or other non-professionals). These aggregate statistics for the European market hide a wide spectrum of different behaviours: in Italy and Switzerland, retail investors account for the majority of the AuM, while in the Netherlands and the UK, the market is dominated by large institutional investors, typically pension funds. This reflects the fact that northern European markets tend to have larger pension funds schemes but also a different sensitivity of retail investors to sustainable investment across Europe.

The investment restrictions imposed on harmonised UCITS means that they can only invest in liquid securities, debt or equity. This means that, today, the investment strategies pursued by investment funds are focusing on screening equity and corporate debt investments on the basis of criteria such as engagement, integration and simple exclusion. In other words, they tend to focus on corporate governance (such as direct involvement as shareholders in filing shareholders resolutions or exercising of voting power) or exclusions of 'non-ethical' sectors (such as tobacco, weapons and pornography).

Direct investment in SME and new start-ups operating in the climate change sector tend to be the area of competence of dedicated venture capital trusts and private equity funds (see below).

Given the small size of REDD+ projects and the absence of large corporations in this sector, it is difficult to imagine the growth of AuM by UCITS and mutual funds in the short term. In the longer term, on the other hand, it is likely that, as the REDD+ opportunities increase, consolidations will take place creating large enterprises. Once they are listed on a stock exchange, UCITS and other open-ended investment vehicles can invest in such companies and provide additional capital for the development of the sector. (Recommendations are listed in Box 4.)

#### Box 4: Recommendations

- (1) to effectively leverage the private sector, it is important to implement a set of policies that take into account the different composition of the investment community in sustainable investment across countries. So, for example, in the Italian market, measures to further incentivise retail investment may be appropriate while, in other parts of the EU, the institutional investor community may play, initially, a larger role;
- (2) given the early development stage of the REDD+ market, it is unlikely that, in a first time, UCITS could play a significant role in allocating capital to REDD+ projects. We recommend that policy intervention be focused on closed-end funds<sup>26</sup> and venture capital funds.

<sup>26</sup> **Closed-end funds are collective investment schemes with restrictions on the ability of investors to liquidate their investment in the fund. Typically, the funds impose minimum holding periods and long notice periods in order to disinvest from the fund. They are reserved to sophisticated investors with a long-term investment horizon.**



### 1.2.3.2: Venture capital funds and private equity funds

According to Eurosif, as of 2006 there was €1.25 billion committed to venture capital specialised in sustainable development (VC4S). This represents approximately 2% of the European private equity market. Venture capital funds tend to be involved in the early stages of a company's life cycle by providing seed capital for the launch, early development or expansion of the business. Private equity funds, on the other hand, tend to invest in established business. Venture capital funds could become of crucial importance to channel private sector's investment in forestry projects for the following reasons:

- The small size of REDD+ projects – although it is difficult to establish proper statistics, the average size of these projects is probably between \$5 million and \$15 million. The average size of a venture capital investment per company in Europe is €6.5 million.<sup>27</sup>
- Most companies operating REDD+ projects are private companies, not publicly listed. As we have seen, this constitutes a major barrier for direct investment by private investors for two reasons:
  - (1) regulatory reasons – for what concerns institutional investors (pension funds, UCITS)
  - (2) lack of publicly available information on these companies – this is a problem for HNWI, for example.

According to ESIF, VC4S invest in various industry sectors, mostly linked to environmental issues. VC4S tend to co-invest in start-up companies, in order to share the risk.

The biggest challenges for VC4S are:

- (11) Raising capital from private investors. Most investors today are HNWI. European pension funds have, today, a very small allocation to venture capital, whereas in the US the typical allocation is 2–3%.
- (12) Low return – investors in VC4S seek similar IRRs to those provided by other venture capital funds. These range between 20% and 25%.

The preferred exit from a venture capital investment is either a trade sale or an IPO (initial public offering). The typical exit timeframe ranges between three and five years from the date of investment. (Recommendations are listed in Box 5).

### Box 5: Recommendations

**To develop VC4S investing in REDD+ companies, governments should adopt policies designed to achieve the following objectives:**

- 1) develop specialised co-investing programmes in the projects by widening, where possible, the mandate of existing agencies/funds such as the European Investment Scheme or JEREMIE (Joint European Resources for Micro to Medium Enterprises) in Europe, the Enterprise Capital Funds in the UK and the Small Business Investment Company scheme in the US
- 2) incentivise the private sector's investment in VC4S through tax breaks
- 3) implement measures to create 'secondary market' liquidity in REDD+ projects, to allow VC4S to exit from the investment within their target timeframe
- 4) create certified status for VC4S funds investing in REDD+ companies – this criterion could be used for providing incentive to institutional investors to allocate a portion of their portfolio to this asset class (see Section 1.2.2 on pension funds).

Developing venture capital market is one of the key routes to increase private sector's investment in REDD+ projects. The implementation of policies for the development of this sector could also be an efficient measure to accelerate the redeployment of specialised professionals who are exiting the banking industry as a result of the financial crisis.



## 1.3 Measures for satisfying the eligibility criteria listed above

### 1.3.1: De-risking measures

A recent survey of investors in REDD+ projects<sup>28</sup> has shown that political risk constitutes the largest risk factor preventing potential capital providers investing in REDD+ projects in developing forest nations. Forty-six per cent of investors surveyed listed this as the highest ranking risk factor (60% of inexperienced investors and 38% of experienced investors).

Currently, political and land tenure risks can be mitigated through specific insurance products offered by the World Bank (MIGA – the Multilateral Investment Guarantee Agency) and by some private insurance companies. However, the scale of existing MIGA insurance taken out to date is small relative to the size of the expected requirement for investment in REDD+.

#### 1.3.1.1: MIGA

MIGA is a member of the World Bank Group, with offices in Washington, DC. MIGA was created in 1988 to promote foreign investments into developing countries to support the World Bank's development objectives. MIGA does not have offices in any other city or country but relies on World Bank country offices to provide support on transactions in the respective country.

MIGA provides insurance against the main types of political risk (Table 2).

**Table 2: Types of political risk insured by MIGA**

War and civil disturbance/ terrorism and sabotage	Loss due to the destruction, disappearance or physical damage to tangible assets caused by politically motivated acts of war, civil disturbance, including revolution, insurrection, coups d'état, terrorism and sabotage. Includes events that result in the inability of the project enterprise to conduct operations essential to its financial viability.
Expropriation	Loss of the insured investment as a result of acts by the host government that reduce or eliminate ownership if, control over, or rights to the insured investment. Also includes partial losses, as well as 'creeping expropriation', a series of acts that over time have an expropriatory effect.
Currency transfer restriction	Losses arising from an investor's inability to convert local currency (capital, interest, principal, profits, royalties or other monetary benefits) into foreign exchange for transfer outside of the host country. The coverage also insures against excessive delays in acquiring foreign exchange caused by the host government's actions or failure to act.
Breach of contract (with a foreign government)	Losses arising from the host government's breach or repudiation of a contractual agreement with the investor. In the event of such an alleged breach or repudiation, the investor must be able to invoke a dispute resolution mechanism (eg arbitration) set out in the underlying contract and obtain an award for damages.

<sup>27</sup> Source: EVCA.

<sup>28</sup> Source: Clinton Foundation (2008) *Unlocking Climate Change Mitigation Potential Of Sustainable Commercial Plantations*.



MIGA's theoretical maximum exposure per country is \$700 million. For the rainforest nations, MIGA's net exposure (after re-insurance) at the end of June 2007 was:

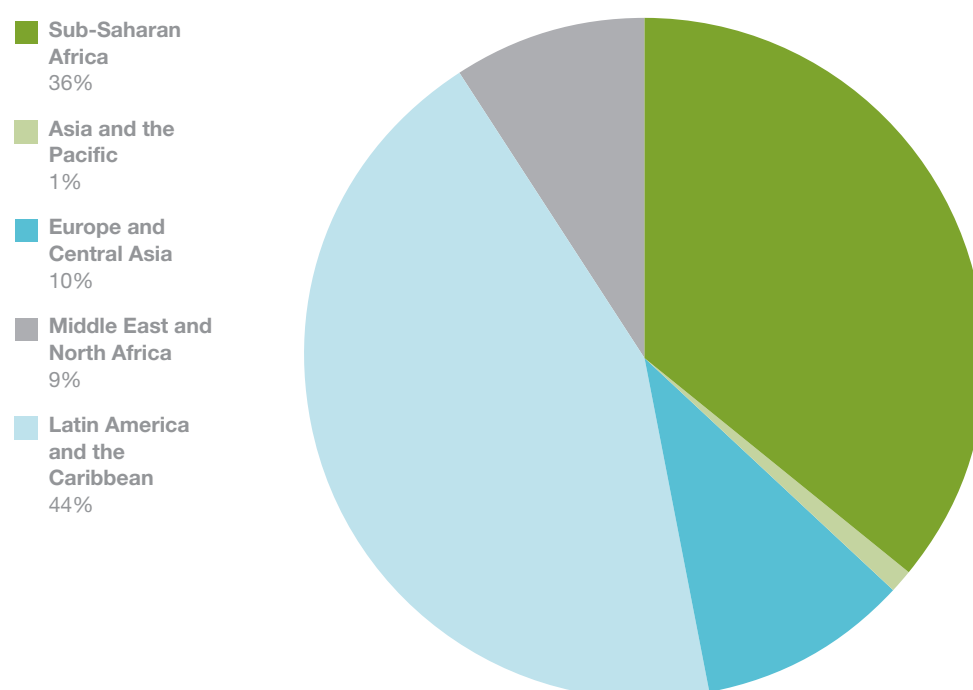
Brazil: \$140 million  
 DR Congo: \$3 million  
 Indonesia: \$3 million  
 Guyana: NA  
 Liberia: NA

Although the \$700 million capacity per country may have proved sufficient for MIGA to deal with the current volume of activity, this would constrain MIGA in providing political risk cover in the face of the scale of the investment required to achieve the REDD+ objectives used as assumptions for this report.

MIGA's gross exposure in agribusiness (which includes forestry) in June 2008 was \$800 million, broken down as shown in Figure 2. MIGA's strengths and weaknesses are listed in Table 3.

Recommendations are listed in Box 6.

**Figure 2: MIGA's gross exposure in agribusiness**



**Table 3: Summary of MIGA's strengths and weaknesses (source: DeRisk)**

**MIGA's strengths:**

- availability of coverage in countries that most commercial insurers perceive as too high risk
- track record in dealing with potential claims – ability to leverage on its link with the World Bank in dealing with dispute resolutions
- obtaining a MIGA insurance can help in fundraising for projects in risky countries
- discounted insurance pricing for investments of less than \$10 million.

**MIGA's weaknesses:**

- limited risk capacity
- limits in ability to obtain MIGA's insurance on existing projects
- long duration of underwriting process.



## Box 6: Recommendations

- 1) further investigation should be given to the amount of additional capital that would need to be raised by MIGA to increase the capacity to bring it in line with the expected capital flow into rainforest nations, in connection with the size of REDD+ opportunities available in each respective country.
- 2) streamline the insurance approval process by:
  - creating template contracts for forestry projects
  - MIGA conducting due diligence on each rainforest nation on an ongoing basis, with specific focus on forestry projects, in order to have risk assessment readily available, upon request by the applicants
  - delegating to World Bank country offices the decision power on new insurance contracts of small size.
- 3) MIGA to make available and publicise political risk assessment of each rainforest nation, in order to increase transparency and educate the investor community and bridge the gap between new and experienced investors on the perception of the risks, as evidenced by the Clinton Foundation report.

### 1.3.2: Liquidity measures

#### 1.3.2.1: Increase liquidity of plantation investments

The long duration of time required for forestry investments to yield significant cash-flows constitutes one of the biggest factors that limit the flow of private capital into commercial plantation projects. Tropical hardwood plantations can take 20–25 years to yield significant cash flows. Such a period significantly exceeds the 10–15-year horizon that is the maximum tenure for most investors. Long periods with negative, or little cash flow, make it difficult to secure debt financing due to the inability to support annual interest payments.

A set of measures designed to create a secondary market in forestry assets or provide maturity transformation (akin to interest rate swaps) would contribute to addressing this issue.

A secondary market for plantation assets at different phases in their lifecycles will give project investors greater confidence that they will be able to exit their investment and see returns sooner. Fairly liquid secondary markets already exist for temperate forests, with trading of plantation assets between timber investment management organizations (TIMOs).

#### 1.3.2.2: Incentivise growth of collective investment schemes

At a more macro level, additional liquidity in forestry investment could be created with the development of collective investment schemes that would support companies investing in REDD+ projects throughout their lifecycle:

- initially, venture capital funds, potentially co-investing alongside publicly sponsored institutions, provide seed capital to the newly established company operating the REDD+ project
- as the company's business starts to develop, private equity funds play a crucial role in providing capital for further expansion and offering investors a more diversified portfolio, by holding business with different cash-flow profiles, at varied degrees of development
- as companies grow in size, private equity funds typically exit the investment via IPOs and mutual funds/UCITS invest in the stock and/or listed debt of the companies.



## 2 private investment in an IFF bond

Much of the discussion around private sector finance for REDD+ has revolved around the concept of rainforest bonds. In this section, we explore the possible characteristics of these bonds and investor appetite.

### 2.1 AAA-rated supranational or implicit/explicit government guarantee

#### 2.1.1: Pricing

In order to be successfully placed with investors, the bond's pricing should be in line with that of other debt instruments with similar characteristics (ie maturity, credit quality, coupon, etc). Assuming that the bond will be issued by a multilateral bank, or implicitly or explicitly guaranteed by donor governments, appropriate terms of comparisons would be those listed in Table 4.

**Table 4: Borrowing costs of multi-lateral development bank (MDB)/supranational borrowers<sup>29</sup>**

Supranational issuers	Rating	Debt maturity	Current funding cost in local currency	Funding cost in US dollars
World Bank	AAA/Aaa	14 years	LIBOR <sup>30</sup> + 1.07%	LIBOR + 1.07%
EIB	AAA/Aaa	11 years	EURIBOR + 0.55%	LIBOR + 0.34%

Table 5 provides reference points for the comparison of the borrowing cost of AAA-rated IFF with those of sovereign borrowers of similar rating.

**Table 5: Borrowing costs of AAA/Aaa rated sovereign<sup>31</sup>**

Sovereign issuers	Rating	Debt tenor	Current funding cost in local currency	Funding cost in US dollars
US	AAA/Aaa	10 years	LIBOR – 0.019%	LIBOR – 0.019%
UK	AAA/Aaa	10 years	GBP LIBOR – 0.35%	LIBOR + 0.01%
Germany	AAA/Aaa	10 years	EURIBOR – 0.22%	LIBOR + 0.01%

<sup>29</sup> Source: Bloomberg, 17 June, 2009.

<sup>30</sup> LIBOR is the acronym for the London Interbank Offered Rate, and is the main money market index used by financial institutions to determine the interest rate at which they lend to each other. It is also used as a reference index against which the borrowing cost of lower/higher credit worthy institutions is measured.

<sup>31</sup> Source: Bloomberg, 17 June, 2009.



### 2.1.2: Liquidity

The importance of the development of secondary market liquidity for bond securities varies by investor type. Typically, banks, central banks and mutual funds/UCITS require that a certain degree of liquidity be present in order to invest in a new bond issue. A proxy measure for the liquidity of a particular bond is the size of the bond issue. The following measures will contribute to enhanced liquidity:

- issue size and denomination. Issue sizes of at least \$5 billion (or equivalent in other currencies) and denominations not exceeding \$100,000 (or other currency equivalent) provide a sufficient degree of confidence that a secondary market will be available during the bond's life
- fungibility. It is advisable that the bonds be issued in fungible format. Given the long duration of the bonds (20–30 years) and the plan to issue the bonds over five years, the fungibility should be easily achieved
- repo-eligibility with central banks. It is preferable for the bonds to be classed as eligible collateral with the European Central Bank and the Bank of England and for the discount window at the Federal Reserve. This will allow banks to use the International Finance Facility (IFF) bonds as collateral to obtain large amount of temporary liquidity to face their short term borrowing needs, when the conditions in the secondary markets may not be favourable.

### 2.1.3: Risk remoteness

Generally, investors express their limits or guidelines on their credit risk appetite in terms of rating. In order to appeal to as wide as possible spectrum of investors, the IFF bonds shall be designed to achieve the following objectives:

- be assigned a AAA rating, or equivalent, from the three major rating agencies (S&P, Moody's, Fitch Ratings)
- be guaranteed from donor countries.

### 2.1.4: Eligibility for target investors

In order to invest in an IFF for forestry, investors will require certain criteria which we summarise below.

- 1) Banks:
  - risk weighting: to minimise the impact on banks' regulatory capital, a 0% risk weighting should be obtained and confirmed by the Bank of International Settlements
  - interest rate: banks have demand for both fixed and floating rate bonds
  - currencies: although banks would be able to mitigate the foreign exchange risk embedded in an investment in foreign currency, the hedging instruments used have implications on credit lines and counterparty risk. Such issues would be eliminated if the IFF bonds were issued in tranches denominated in the major currencies: US dollars, euros. The size of each tranche shall be determined prior to the issue date of the bonds, via a standard syndication process, whereby a syndicate of banks will assess investors' appetite. The issuing entity would then be responsible for arranging the execution of any necessary foreign exchange hedging strategies to convert the funds to required currencies.
  - liquidity: see considerations above.



## 2) Pension funds

No formal investment regulations exist for pension funds. In the UK, for example, the average pension fund allocates approximately 24%<sup>32</sup> of its portfolio to fixed income assets, of which the largest proportion is allocated to sovereign debt. A AAA-rated MDB or implicit sovereign-guaranteed bond would generate the largest amount of interest from pension funds. In order to make the bonds attractive to pension funds, they need to satisfy the following criteria:

- fixed interest rate: pension funds are the largest category of investors in inflation linked bonds. Most sovereign borrowers issue inflation-linked bonds to tap this demand and manage efficiently their borrowing plans. In the context of the IFF, though, the issuance of a global bond which will be distributed in several countries would make this route impracticable. Nevertheless, a fixed rate bond would be capable of attractive significant interest from the pension funds industry;
- currency. Pension funds must buy bonds denominated in the domestic currency of the fund or, otherwise, the currency risk has to be fully hedged, typically via cross-currency swaps. For the same considerations mentioned for banks, it would be preferable that bonds be issued in US dollars, euros or British pounds.

## 3) Investment funds

A recent survey<sup>33</sup> has found that approximately 40% of all assets under management within the European asset management industry (including both regulated and unregulated funds) are invested in bonds. That equates to approximately €5.4 trillion. European regulated funds, or UCITS,<sup>34</sup> must comply with a set of investment guidelines. Table 6, we summarise the guidelines applicable to harmonised UCITS which represent the majority of the market.

Table 6: UCITS investment guidelines

Type of instrument	Limit applicable to the UCITS		
	Corporate issuer	Specific debt obligation	Sovereign issuer
Transferable securities	10%	25%	35%
Money market instruments	10%	10%	35%
Bank deposits	20%	20%	NA
Over-the-counter financial derivatives	10%	10%	NA
Maximum combined total exposure per issuer	20%	35%	35%

US mutual funds are subject to similar investment guidelines. In addition, in order to be eligible, bonds must be listed in a regulated market. The IFF bonds would therefore be classed as eligible investments for UCITS funds.

<sup>32</sup> Source: Office for National Statistics, 2007 figures.

<sup>33</sup> Source: European Funds and Asset Management Association (2008) Annual Asset Management Report – Facts and Figures.

<sup>34</sup> UCITS are investment fund schemes subject by pan-European regulations that restrict the instruments they can purchase, set minimum diversification criteria, establish certain governance principles that they must satisfy as well as marketing and transparency guidelines.



## 2.2 IFF – without supranational or implicit government guarantee

Certain mechanisms have been suggested for the issuance of ‘green bonds’ or ‘forestry bonds’. Under these mechanisms, the repayment of the bonds is linked to the performance of forestry related or other green related investments. For example, PRP suggests that a possible mechanism for the repayment of the bond may be via the return of a green technology fund.

Such proposals have several implications for the appetite and return profile of the bond:

- 1) bonds will have to provide a higher yield. The Clinton Foundation<sup>35</sup> investors survey, estimates that the rate of return currently demanded by new investors in REDD+ project ranges between 15% and 25%. This is significantly higher than the rate of return of commercial sustainable plantations, which typically range between 6% and 8% (US) and 10% to 15% (tropical developing countries). Even if the bonds were de-risked in respect of political risk, they would command a significant risk premium compared with AAA-rated sovereign or MDB guaranteed bonds;
- 2) the IFF bonds would have a higher risk-weighting than de-risked IFF bonds. This will reduce banks’ demand;
- 3) reduced liquidity – riskier bonds will appeal to a reduced universe of investors. This will impact the secondary market liquidity of the bonds.

Table 7: outlines the impact on risk appetite of the main categories of investors in a bond which is not fully de-risked.

**Table 7: Impact on risk appetite of the main categories of investors in a bond which is not fully de-risked**

Banks	Banks wishing to invest in a bond incurring higher capital requirements will require a higher rate of return. In addition, demand will be confined to those banks with dedicated principal finance or specialised investment units capable of analysing and monitoring the investments. Banks such as HSBC (UK) and CDC (France) already have portfolios of forestry investments of significant size; CDC, for example, has approximately €800 million of forestry assets under management
Pension funds	Pension funds will require a rate of return which is comparable with that of other ‘risky’ asset classes: equities, hedge funds, private equity funds. In addition, pension consultants would only recommend a marginal asset allocation to these securities.
Mutual funds/UCITS	Only investment funds with specific allocation to emerging markets or forestry as an asset class would be able to invest. This will reduce the appetite, and drive up required returns.

## 2.3 Conclusions

The greatest investor appetite would be for a fixed rate bond, with a final maturity of five years or longer, denominated in US dollars or euros, rated AAA/Aaa with a sovereign or supranational guarantee. The minimum size to attract broader investors’ interest would be \$1 billion but, for greater liquidity, an issue size of \$5 billion or more would be appropriate.

Although it would be possible to structure a bond with return based upon REDD payments or other green-related investments, it is expected that investors’ appetite would be low. Furthermore, a great deal of time would need to be spent to market the securities and the risk of failure would be high.

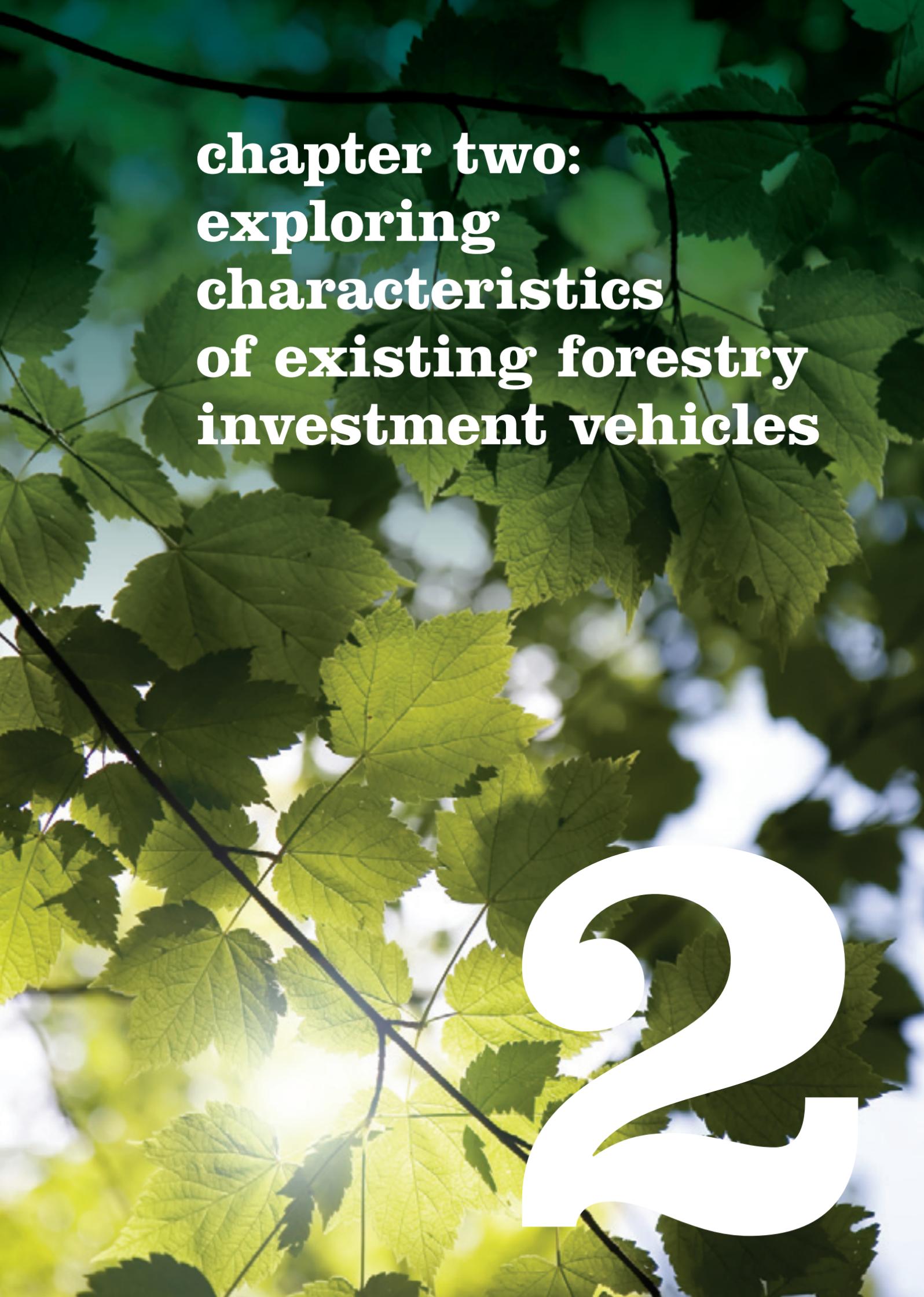
<sup>35</sup> Source: Clinton Foundation (2008) *Unlocking Climate Change Mitigation Potential Of Sustainable Commercial Plantations*.



## 2.4 Comparison table

	Pricing	Liquidity	Eligibility for target investors			
			Banks	Insurance companies	Pension funds	Mutual funds/ UCITS
<b>Risk-remote bonds</b>	Comparable to pricing of supra-national or other AAA-rated development agencies	High  The bonds would be eligible under the collateralised lending facilities/ discount window with central banks	Yes  Bonds would be held by bank treasury desk, as part of their liquidity portfolio	Yes	Yes	Most bond funds hold a significant portion of their portfolio in government bonds, hence bonds would fit in their portfolio
<b>'Forest-linked' bonds</b>	Depends on risk of the bonds. Would need to be comparable with that of emerging market debt issuers	Low  The higher risk profile of the bonds would limit the number of investors and, hence, the liquidity of the bonds	Yes  Bonds would be held only by dedicated principal finance desks, as part of their proprietary portfolio of investments	Depends on rating	Yes in principle, but only held within their alternative bucket, which is a small portion of their portfolio	Although the instrument could be designed to be eligible to harmonised UCITS and mutual funds, it will only appeal to bond funds with suitable risk profile.





**chapter two:  
exploring  
characteristics  
of existing forestry  
investment vehicles**

**2**

## About the author

Mark Campanale

Mark Campanale holds an MSc in Agricultural Economics from Wye College and since 1989, has worked as an equity analyst and business development manager for a series of sustainability focused investment funds, including those at Jupiter Asset Management, AMP Capital and Henderson Global Investors. Mark currently works at Four Elements Capital, a specialist clean tech and environmental markets investment boutique, and also as an advisor to Halloran Philanthropies.

## highlights

Forestry has the potential to be an important asset class for institutional investors seeking to diversity risk. However, it is not yet a recognised asset class in its own right in Europe, particularly the UK. A trustee guide, perhaps one focusing on its long-term nature or environmental benefits in addressing climate change (if properly managed) would probably be useful.

Work needs to be done to look at whether forestry – through the process of biological growth by trees – could in fact be part of a key asset-liability matching strategy for pension funds on a 30–40 year basis.

Investment return expectations appear to be quite high by investors, particularly given the historical returns achieved. This expectation is acute for investors looking at Latin America, Africa or SE Asia and natural (not plantation) forests due to risk. De-risking these countries as areas of investment ought to be encouraged – perhaps through insurance guarantees – but in return for this insurance, there should be a commensurate drop in the expectation of financial return to more modest, perhaps high single-digit levels.

Institutional investors extend their generally poor overall understanding of forestry as an asset class, into an even poorer ability to be able to distinguish between different types of forestry practice. For example, the simple one of plantation versus natural forestry. Some assistance here could be quite useful.

Government and institutions could kick-start forestry investment by awarding a mandate for a fund of funds for not just forestry investment in the southern hemisphere but also a manager that could select the best REDD or avoided deforestation funds. This approach would encourage new investment funds to apply for investment and then attract other private sector institutional investors.



# 1 forest sector characteristics

The forest sector has a unique investment profile that has attracted a steadily growing following from institutional investors. This is due to forests having attractive investment characteristics, such as strong physical asset backing in the form of land, standing timber and milling assets. Such assets typically show financial stability in times of stock market turbulence, as investment returns are uncorrelated with those of other asset classes. A portfolio of forestry can be diversified in terms of geography, timber type and stage of enterprise development, so as to reduce risk. An overall tightening of supply and an increase in demand has resulted in real timber price increases over the past 50 years. In recent years, recognition of the role of deforestation in the climate change debate has caused investors to re-evaluate this asset class as a new source of long-term investment returns.

Whilst direct forestry investment has some compelling investment characteristics, as a whole, it has yet to be recognised by traditional European pension investors as part of the asset allocation mix. Generally timber investments from pension funds will account for approximately 3–5% of their total portfolio. In the UK, which has (compared with other parts of Europe) a relatively well-developed pension fund marketplace, few asset consultants have forestry as a key investment component for their clients. Nonetheless, this is changing, as other asset classes have shown volatility of returns and institutions look to diversify away risk. An asset class such as forestry is now found to have other benefits, namely one where the long-term growth in value of the asset from physical growth broadly aligns with pension fund liabilities. The biological growth of the tree over 40–60 years demonstrates that it can, to quite an extent, grow in line with the growing liabilities of a pension scheme. The characteristics are not yet recognised by the actuarial or investment consulting profession. However, more recently, forests and investment schemes for their protection have become recognised as a core investment in climate change mitigation strategies, and the asset class has been sought out by some leading European pension funds.

Recognition of deforestation in climate change discussions has also meant that the overall shape of forest investment has begun to change. Some of this is structural. For example, the key output – timber (or wood pulp) – has gained scale at the plantation level due to demand from the housing and print industries. To some extent, returns have stabilised in plantations in the northern hemisphere in mid to high single digits. In the search for excess returns, investors are showing willingness in moving from the relatively stable conditions of the northern hemisphere to new regions, especially where high-quality timbers have higher return characteristics. Southern hemisphere emerging markets demonstrate competitive advantages in terms of timber production and manufacturing. Factors like high average temperatures and abundant rainfall result in substantially higher tree growth rates compared with most developed countries. Tropical plantations are more productive than temperate plantations, with growth rates up to 10 times higher. (Source: Global Solidarity Fund, Mozambique.) International market demand particularly for high-value tropical hardwoods increasingly exceeds supply. The combination of high growth rates and lower costs results in low delivered wood costs, and hence higher potential returns.

This background sets the scene for renewed interest by institutional investors in identifying investment opportunities in forestry in the southern hemisphere such as Latin America and to an extent, South-East Asia, which are commensurate with the associated risk.

As a group in the UK, neither institutional investors nor their advisors have shown much interest in distinguishing between different approaches to forestry – with relatively few able to articulate the differences in risk and returns from managing plantation forests versus natural forests. Forest professionals recognise that the management of plantation forests for the production of timber or pulp is a different business from the management of natural forests for high quality hardwoods. With natural forests, the broad nature of



the asset base in terms of biodiversity; the effects of timber harvesting on changing the biodiversity characteristics of the forest; the location of the resource in both politically and geographically challenging parts of the world, has so far kept away risk-averse investors. This, however, is showing signs of changing – for example, the growing number of tropical forestry investment funds being promoted to European investors with the title ‘sustainable’ in the fund title.

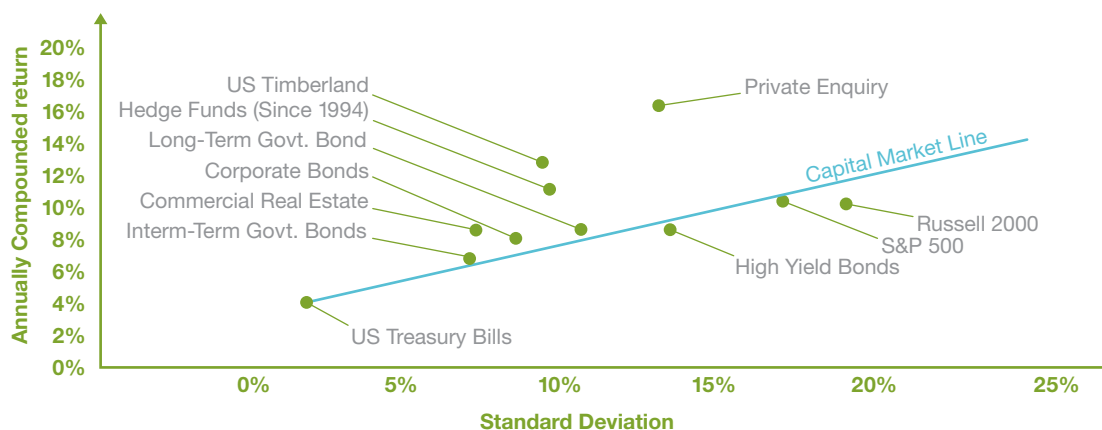
A sample of different forestry investment strategies – not all reviewed here – illustrates that there is little differentiation in approaches set out by some of these funds between harvesting from natural forests, or the promotion of plantations. Each approach attracts the description ‘sustainable’ forestry. Promotion of investment into mixed species, biodiverse plantations – particularly through programmes of afforestation or reafforestation – might have long-term ecological benefits. However, promotion of so-called ‘sustainable investment’ into natural forests, particularly closed-canopy forests, might not. A key message ought to be that investors need to be encouraged to look at sustainable forestry seriously, but the risks and the nature of the investment needs to be better understood.

This chapter now looks at return characteristics from forestry investment and also REDD, at forestry investor attitudes; then in more detail at forestry investment funds currently being promoted to European investors.

## 2 return characteristics

Over a 20-year period, forestland returns have outperformed the broader equity markets, and forestland also enjoys superior returns on a risk-adjusted basis by virtue of its relatively low volatility, as measured by standard deviation (Figure 1). Against a backdrop of volatility in the equity and debt markets, forestland, as an asset class, has continued to produce steady returns.

**Figure 1: Returns from forestland on a risk-adjusted basis**



Timber investments have begun receiving a growing amount of attention, particularly from a number of institutional investors from regions such as the UK, Scandinavia, the Low Countries and North America. The annual returns from US timberland over the last 21 years are, on average, 14.9% pa, superior to most other asset classes. However, the index includes appreciation in land values as well as forest assets, and we believe that rising land values account for about 9–10% of the return and the balance (5–6%) from gains in forest valuation. (Source: National Council of Real Estate Investment Fiduciaries, Blue Oar Securities, 2008.)

Forestry returns are typically divided into two components: income return and capital appreciation. Income return is characterised by the cash flow from the sale of harvested timber. This provides a fair amount of flexibility in terms of the management of the forest itself. If timber prices are not particularly attractive at a specific time, you simply leave the trees to grow. This increases the biological growth value and consequently the value of forests and the land, creating capital appreciation. Traditional additional income from forests includes non-timber sources of income such as the sale of recreational property and conservation easements. These have been largely associated with investments in the northern hemisphere. Easements refer to financial agreements with interest groups to keep part of the forest untouched.

More recent components of return may include ecosystem return and the utilisation of forestry waste products to generate revenues.

## 2.1 Weak correlation with other asset classes

Forestland has exhibited weak positive correlations with most other financial assets (one exception being government bonds) over the past 5–15 years. Despite evidence suggesting increasingly positive correlations in the nearer term, forestland remains an attractive long-term diversification tool for investors. Importantly, forestland has had a positive correlation with inflation (as represented by the CPI) over the medium to longer term, making it an effective capital preservation tool.

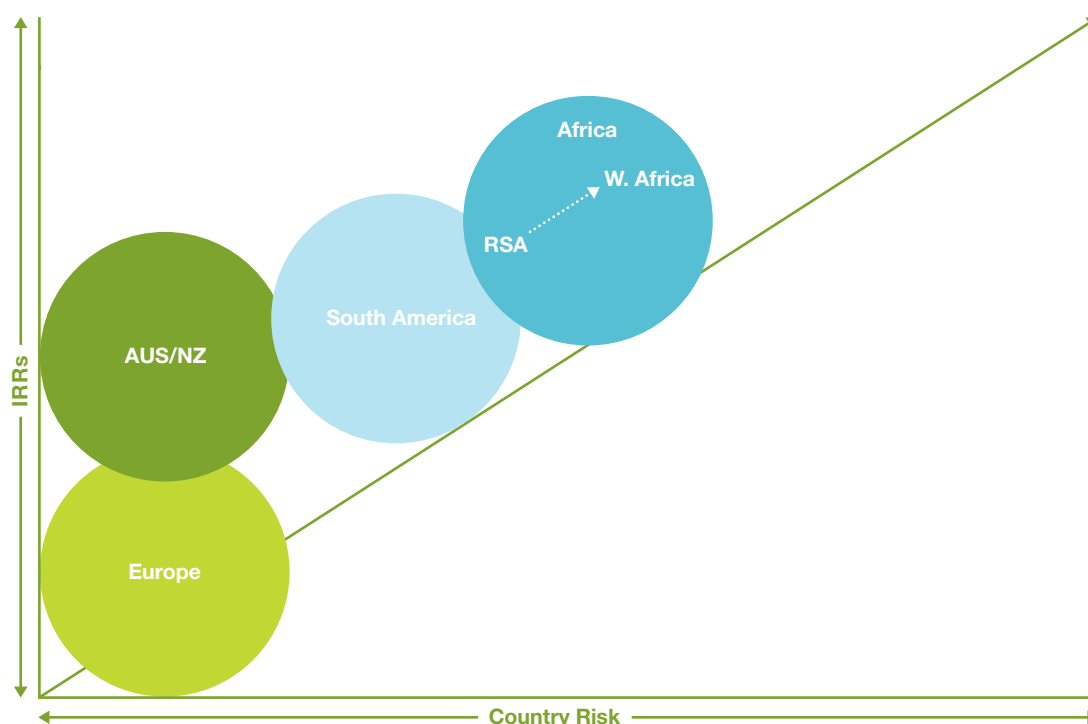
As an asset class, forestry has continued to produce steady returns in a period of volatile equity and debt markets.



### 3 investing outside of the US

Of the estimated \$20 billion held by institutional investors in timberland today, 90% is currently invested in the US according to the Cambium Placing Prospectus, February 2007. In the southern and northern hemisphere countries in which funds have traditionally invested (US, New Zealand, Australia, Chile, Uruguay, etc), there has been increasing liquidity and transactional evidence of investment performance (Figure 2).

**Figure 2: Return versus risk for investment in timberland outside the US**



Source: International Tropical Timber Organization

Africa has traditionally not seen a large amount of forestry investment. The International Tropical Timber Organization states that current evidence suggests that this trend is changing, with larger funds now looking elsewhere than the traditional timber investment countries (US, New Zealand, Australia, Chile, Uruguay etc). South Africa, Mozambique, Angola, Madagascar, Tanzania, Congo and Uganda have been amongst the countries that have been discussed as countries suitable for forestry investments, with two of these, Tanzania and Uganda, countries that have attracted significant institutional investment from European investors.

#### 3.1 Source of industry returns

**Table 1: Forest and processing sample figures for tropical hardwoods (value add chain)**

Natural forests and plantations	Sawmilling	Processing	Import and sales
\$500/m <sup>3</sup>	\$1,000/m <sup>3</sup>	\$1,500/m <sup>3</sup>	\$2,600/m <sup>3</sup>
ROCE 6–22%	15–20%	25%	12%

Source: *Forestry Investment In Latin American and the Caribbean*, John Clement, 2007/08 (unpublished)



### 3.2 Latin America

South America (Brazil in particular) is the major regional forest area, with a highly developed plantation sector alongside natural forestry in the larger and more advanced economies of ‘the big four’ countries, namely Brazil, Argentina, Uruguay and Chile (Table 2). Investor opportunities range from established plantations, through to secondary processing. Private equity/loan structures predominate.

Sector leading operators tend to be privately held, first- and second-generation family companies, distinguished by cheap long-term concession holdings and/or plantations, limited vertical integration, export-based/sawnwood business models outside of the ‘big four’, variable management, relatively advanced forestry/environmental legal/regulatory regimes and varying degrees of sustainability with steadily advancing certification.

**Table 2: The forestry industry in South America**

Company	Country	Principal products	Wood species	Forest areas under control	Estimated IRR
Forestadora Tapabucua	Argentina	Sawnwood, plywood, further processing	Eucalyptus	3,000ha	16%
Aseradero Ubajay	Argentina	Sawnwood, further processing	Eucalyptus	3,000ha	13.5%
Tecflor Ind. I/Aracruz	Brazil	Sawnwood, further processing	Eucalyptus	160,000ha	19.5%
CAF Santa Barbara Ltda	Brazil	Sawnwood, further processing	Eucalyptus	128,000ha	26%
Eucatex S.A.	Brazil	Sawnwood, Plywood, hardboard, solidwood	Eucalyptus, pine	52,000ha	19%
FLOSUL	Brazil	Sawnwood, further processing	Eucalyptus	9,500ha	22.5%
Triangulo Lta.	Brazil	Sawnwood, plywood, further processing	Mixed tropical hardwoods	111,000ha	21%
Otegui Group	Uruguay	Logs, poles, sawnwood,	Eucalyptus, pine	24,600ha	18%

Source: *Forestry Investment In Latin American and the Caribbean*, John Clement, 2007/08 (unpublished)



### 3.3 South-East Asia

The forestry industry is largely based on natural forestry. Sector leading operators tend to be large, state-connected/sponsored companies, distinguished by high levels of capitalisation, extensive forest assets, vertical integration and non-sustainable forestry models (Table 3). Publicly quoted.

**Table 3: The forestry industry in South-East Asia**

Company	Country	Principal products	Capital employed (\$ million)	Average ROCE % (2000–2005)	Average ROAM % (2000–2005)
Barito Pacific Timber	Indonesia	Logs, sawn wood, plywood and plyboard	185	17.2%	9.6%
Daya Sakti Unggul	Indonesia	Plywood, sawnwood	28	15.1%	10.1%
Sumalindo Lestari Jaya	Indonesia	Plywood, MDF, sawnwood	97	28.8%	15.5%
Surya Dumai Industri	Indonesia	Logs, sawnwood, plywood	155	16.2%	13.0%
Timberwell	Malaysia	Plywood	34	27.6%	11.9%
Jaya Tiasa Holdings	Malaysia	Logs, sawnwood, plywood, veneers	281	33.4%	33.6%
PanPacific Asia	Malaysia	Sawnwood, plywood	159	29.6%	22.0%
Ta Ann Holdings	Malaysia	Logs, sawnwood, plywood	22	51.1%	21.1%
SE Asia Wood Industries	Laos	Plywood	91	18.7%	9.6%

*ROAM, return on assets managed; ROCE, return on capital invested*



## 4 ecosystem services: sector overview

### 4.1 Returns from ecosystems services

Several attempts have been made to value ecosystems services and to establish systems of payments to create incentives for communities to preserve forests rather than selling or exploiting them. The majority of proposed ecosystems services schemes have centred around the concept of voluntary tradable ecosystems credits, which may be created by maintaining or avoiding the destruction of valuable ecosystems services and used for securing corporate social responsibility objectives or for compliance in a regulatory scenario. In this context, voluntary carbon and Kyoto CDM/JI projects involving forestry and biomass (and some fossil fuel switching) may be classed as ecosystems services projects.

### 4.2 Market size: voluntary

Systems for monetising, investing in, creating and trading non-carbon ecosystems credits are still in their infancy, despite the first schemes having been established in the mid-1990s. The vast majority of credits currently traded in the voluntary sector therefore relate to carbon reduction projects. The market for voluntary carbon credits is small but growing quickly, with a total of 65MtCO<sub>2</sub>e traded in 2007 (equivalent to \$331 million) compared with 25MtCO<sub>2</sub>e in 2006.<sup>36</sup> The average price of credits sold was \$5/tCO<sub>2</sub>. The voluntary carbon markets nearly doubled in size and more than doubled in value between 2007 and 2008, from 65Mt of credits traded worth \$331 million in 2007 to 123Mt worth \$705 million in 2008. The average credit price increased 20% to \$7.34/tonne on the over-the-counter (OTC) market, though credits still covered a wide range of prices from \$1.20/t to \$46.90/t. Asia sourced more traded credits on the OTC than any other region (45%). The US, however, supplied more credits into the OTC market than any other country (28%) – noting that most of these credits in the voluntary market were sourced from renewable energy projects, not forestry or ecosystem services. These accounted for just 7% of afforestation- and reforestation-based conservation credits, with avoided deforestation accounting for 1% of credits by value. (Source: Ecosystems Marketplace (2009) *State of the Voluntary Carbon Markets 2009*.)

The ecosystems share of voluntary projects is significant, with soil carbon making up 46% of credits traded between 2003 and 2007 on the Chicago Climate Exchange (CCX), and 18% forestry land-based projects in 2007 on the OTC market. However, forestry's share of credits traded is in decline (down from 36% in 2006), partly, according to New Carbon Finance, because forestry projects have become controversial. Issues such as permanence, leakage, investment risks, and accounting questions are helping to reduce demand for forestry and other land-based projects in voluntary (as well as Kyoto) markets.

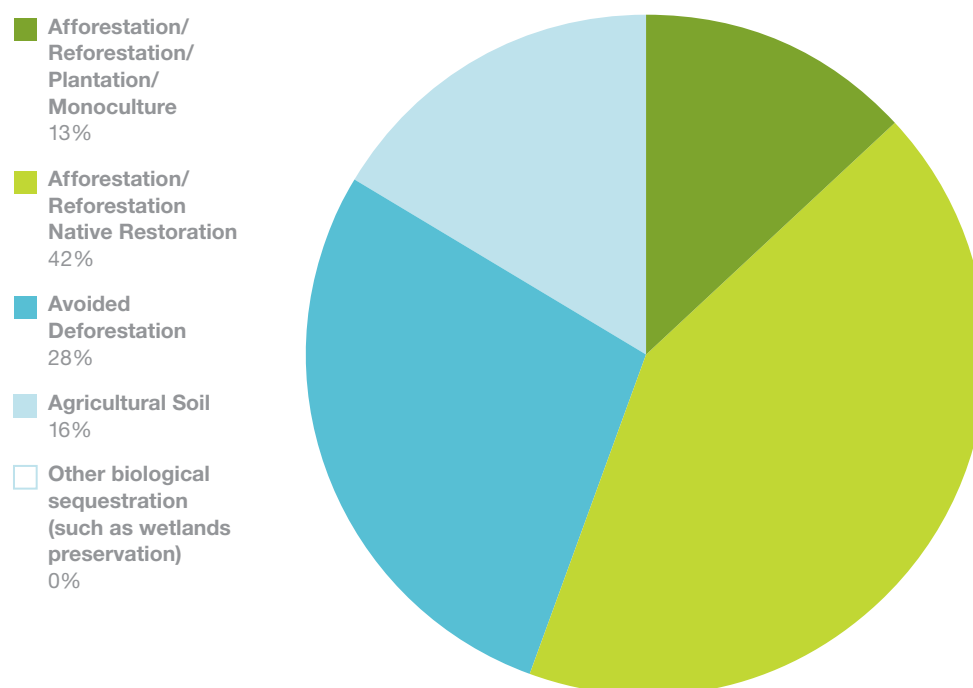
A total of 592MtCO<sub>2</sub>e of primary carbon credits were sold in regulated markets in 2007 (ie voluntary credits were 10% of total).<sup>37</sup> So far, \$14 billion has been raised to invest in carbon projects<sup>38</sup> – implying a current fund size of \$1.4 billion for voluntary projects.

<sup>36</sup> New Carbon Finance (2008) *State of Voluntary Carbon Market 2008*.

<sup>37</sup> World Bank (2008) *State and Trends of the Carbon Market 2008*.

<sup>38</sup> Caisse des Depots Group, quoted by Bloomberg, November 2007.



**Figure 3: The breakdown of voluntary OTC forestry – and land-related credits in 2007**

Source: Voluntary OTC forestry and land-related credits in 2007

### 4.3 Market size: compliance

Of the compliance volumes traded, only 0.1% came from agro-forestry, and 5% came from biomass projects. Clean Development Mechanism (CDM) investment in Africa has been very limited compared to the rest of the world. In May 2008 Africa made up only 3% of expected CDM credit production by 2012 worldwide, compared to 54% in China, 15% in India and 7% in Brazil.<sup>39</sup> Many have attributed this slow progress to a lack of institutional preparedness for CDM investment and a decline in interest in non-recourse project finance in LDCs in Africa.

Afforestation and reforestation projects constitute just 3% of African CDM projects – reflecting the unfavoured position these project types also hold in the global CDM sector – with biogas/biomass energy making up 6% (there are currently no African fuel-switching projects using biomass). As of May 2008 there are only 18 afforestation and reforestation projects in the global CDM pipeline, making up 0.3% of total credits by 2012. Biogas and biomass energy projects are much more common, with 749 projects worldwide comprising 23% of the global total. But the small average size of these projects means they are expected to deliver only 9% of total credits by 2012.

### 4.4 Fortifying the Foundation: State of the Voluntary Carbon Markets 2009

The most recent report on the *State of the Voluntary Carbon Markets*, produced by Ecosystem Marketplace & New Carbon Finance noted that that “Over the last decade,

<sup>39</sup> UNEP figures, May 2008.



land-based, carbon sequestration projects, especially from forestry, have gone from a mainstay of the market to a habitat for debate.” Some of the first carbon offsets were generated via reforestation, and this project type dominated the market for voluntary offsets until 2004. Over the past five years, there have been a large and growing number of entrants developing forest-based carbon projects. The report highlights that as the voluntary carbon markets have diversified into other project types and buyer preferences, the forestry market’s share of transactions continues to decrease.

Whilst the number of land-based voluntary carbon credits transacted on the ‘Over The Counter’ (OTC) markets increased, the market share had decreased to 16% (from 29%) in 2007 and in 2008, the overall volume of forestry-based VERs transacted in the OTC market increased to 5.7MtCO<sub>2</sub>e, but its market share fell to 11%.

The report notes that the decrease in forestry’s dominance is a result of the same issues that have kept forestry and other land-based projects from playing a major role in the Kyoto markets—issues such as permanence, leakage, and accounting uncertainty. However, the report then expresses the view that “barriers in the CDM have also meant that the voluntary markets have uniquely fertile ground for land based projects. In the past two years, the tide has turned for forests as stakeholders seeking a means of halting rapid deforestation have begun to aggressively influence policy and markets to incentivize avoided deforestation” (REDD).

Furthermore, “Changing attitudes about land-based credits may be influencing investment in forests but did not lead to an increase of land-based credits transacted. A recent study conducted by EcoSecurities, Conservation International, the Climate, Community and Biodiversity Alliance, and ClimateBiz.com surveyed corporate buyers on their attitudes toward carbon offsets from forestry projects. It reported that around 90% of respondents view avoided deforestation and native tree reforestation projects as the most desirable forestry projects, followed by agro-forestry (81%) and peat land conservation (75%). Despite such positive sentiments towards REDD and the fact that the only market for REDD is currently the voluntary market, REDD credits declined from 1.4MtCO<sub>2</sub>e in 2007 to 0.7MtCO<sub>2</sub>e in 2008.”

(Source: *Fortifying the Foundation: State of the Voluntary Carbon Markets 2009*, A Report by Ecosystem Marketplace & New Carbon Finance, Katherine Hamilton, Milo Sjardin, Allison Shapiro, and Thomas Marcello 20 May, 2009)

**Table 4: Land-based credits sold in OTC, 2007 versus 2008**

Project type	Volumes of land-based credits (ktCO <sub>2</sub> e)		Market share of land-based project type credits relative to the total	
	2007	2008	2007	2008
Afforestation/reforestation mixed	673	646	2%	1%
Afforestation/reforestation Monoculture	2,157	3,399	8%	7%
Avoided deforestation (REDD)	1,421	730	5%	1%
Forestry management	–	431	–	1%
Agricultural soil	820	267	1%	0.5%
Other land-based projects	–	130	–	0.3%
<b>Total</b>	<b>5,071</b>	<b>5,603</b>	<b>16%</b>	<b>11%</b>

Source: *Ecosystems Marketplace (2009) State of the Voluntary Carbon Markets 2009*



There are currently no incentives to pursue REDD in any of the market-based mechanisms of the Kyoto Protocol. Transactions have therefore been limited to the voluntary market, where a handful of projects are generating credits, which sell at a fraction of the regulatory market price. REDD activities can be broken down into three categories: project-based, policy-based and sectoral. Project-based REDD activities would generate credits based on the maintenance of carbon stocks in a localised area. Policy-based REDD activities would generate credits by reforming land use policies in a manner that would lead to reduced deforestation, such as reducing agricultural subsidies. Sectoral REDD activities would generate market-based credits by reducing net deforestation rates over an entire country.

Project-based REDD activities could be modelled after the forestry CDM, and we understand there are a number of project developers ready to begin investing in REDD projects. However, there are a number of technical challenges that must be overcome before a scheme is acceptable to the various Kyoto parties. These include minimising and accounting for 'leakage', permanence, establishing baselines, and minimising the impact on Certified Emissions Reductions (CER) prices and low-carbon technology transfer to least developed countries.

In Bali, the World Bank launched the Forest Carbon Partnership Facility (FCPF), a \$250 million fund focusing exclusively on REDD. In its first stage, the FCPF will help about 20 developing countries to build capacity to implement REDD activities. These capacity-building activities could include helping to assess national forest carbon stocks and sources of forest emissions, define past and future emission rates, calculate opportunity costs of REDD activities, and design REDD strategies. Australia launched a similar fund called the Global Initiatives on Forests and Climate (GIFC) that will focus on South-East Asia and the Pacific.

The United Nations Development Programme estimates CDM credits can add 2–7% to internal rates of return (IRRs) for forestry and biomass projects.<sup>40</sup> Risk is high in both the compliance and voluntary markets and regulatory risk in the compliance market is significant for the forestry sector since, thus far, few afforestation/ reforestation projects have been registered by the CDM Executive Board, with a China located project being one and the Cochebamba project in Bolivia also at registration. By nature of its size, the voluntary market also has high liquidity risk.

Returns in the voluntary sector may also be attractive to investors, with Plan Vivo forecasting project returns, which derive from voluntary carbon sales, to be 31% per annum, with business returns being even higher (incorporating additional ecosystems services revenues). Precious Woods' Amazon plantations are expected to benefit from increased revenues of 50% and triple profits (profit before interest and taxes) when additional value from carbon sales and energy sales from biofuel plants is included.<sup>41</sup>

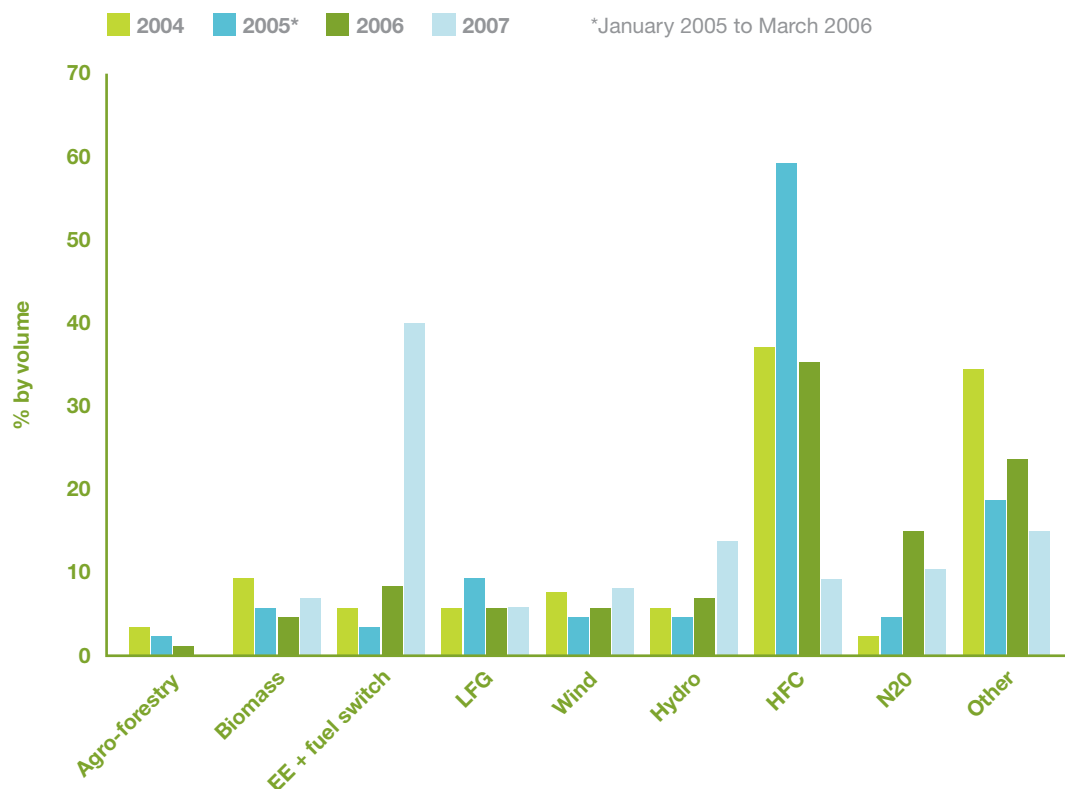
Only a small fraction of voluntary project volumes contracted relate to forestry and biomass projects, declining since 2004 from 2% to 0.1% in 2007. Primary CDM transactions by project type are shown in Figure 4.

<sup>40</sup> UNDP CDM financial analysis, March 2008.

<sup>41</sup> 'Forest trends': presentation to International Tropical Investment Forum, April 2006.



Figure 4: Primary CDM transactions by project type (% volume per annum)



## 5 promoting institutional investor understanding of forestry

The nature of investment returns from REDD projects, which is a new marketplace, is poorly understood by investors. The source of investment returns from commercial forestry is better understood, particularly by US-based pension funds and endowments. Most conventional, mainstream investors in Europe (either those making private equity investments, or investing in publicly traded securities) have not probed too deeply into the sector.



## 6 investor attitudes

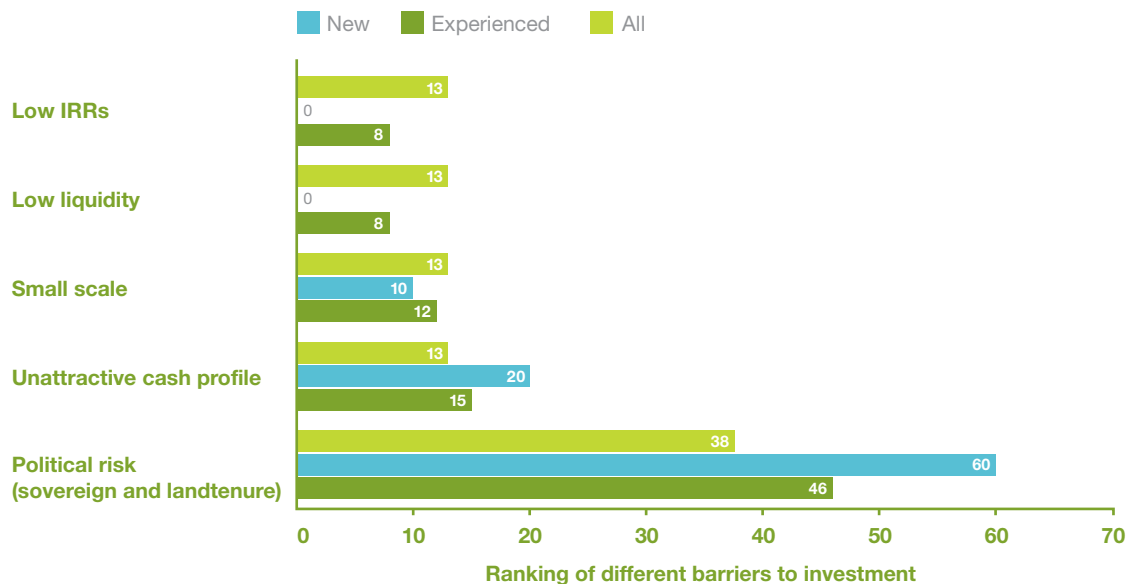
Some quantitative and qualitative research has been conducted looking into this, and McKinsey undertook a study on behalf of the William J Clinton Foundation, which was presented at a round table in New York in May 2008 (Figure 5). McKinsey composed a web survey with baseline questions on investment requirements for afforestation. McKinsey highlighted the following factors as potentially limiting investor interest in tropical forestry as an asset class:

- *political risk* – Experienced investors found this the most significant barrier to investment, with the lack of clarity about land ownership being a significant concern
- *marginal cash flow profiles* – Long holding periods and little opportunity for debt financing found to be concerns
- *small project scale* – High due diligence and transaction costs make small projects less attractive to investors. McKinsey found a median minimum investment size to be typically \$20 million.

In addition, it was found that new forestry investors were more concerned about:

- 1) *low liquidity* – The perceived lack of investment liquidity was highlighted as a concern for new investors in the study.
- 2) *low IRRs* – McKinsey found on average new forestry investors to have a hurdle rate of 15–20%, several percentage points higher than experienced investors in the space.

**Figure 5: Barriers to investment in tropical forestry**



Source: McKinsey, Vattenfall

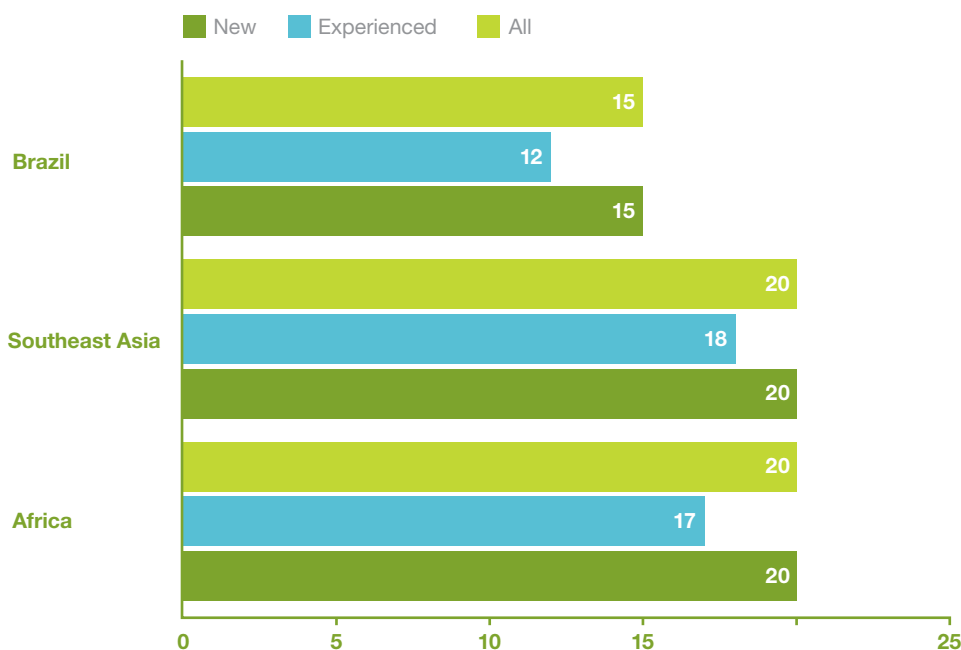


## 6.1 Investor return expectations

IRR expectations varied between new and experienced forestry investors, with Africa and South-East Asia requiring higher returns for the anticipated risk (Figure 6). The spread of required afforestation IRR for Africa over OECD IRR ranged from 3.5 to 13.5%, median of 7.5%. This was higher than South-East Asia, at median of 5.5% and Brazil at 3.5%, demonstrating that investors in African forestry require substantial uplift in returns to compensate for the perceived increase in risk.

**Figure 6: IRRs for tropical forestry**

Median IRR required by investors for afforestation projects in each region



## 6.2 Project characteristics

Some 82% of the investors surveyed by McKinsey were interested in investing in afforestation projects, and 70% were interested in sustainable timber.

The number interested in sustainable timber was higher than all other revenue streams proposed in the discussions. Other potential revenue streams were wood biomass/biofuel, compliance carbon, voluntary carbon and other (biodiversity, water). Wood biomass/biofuel was interesting to 56% of the investors surveyed.

## 6.3 Investor attitudes: UK telephone questionnaire

In 2008–2009 a total of 21 investors were contacted through a mixture of written questionnaires, calls and face-to-face meetings. The investors were categorised into three groups:

- 1) development finance institutions (DFIs). A group of investors across Europe providing long-term finance for private sector enterprises in developing and reforming economies
- 2) commercial investors. Institutional investors including pension funds and investment banks as well as their brokers and professional advisors
- 3) progressive investors. This group includes some high net worth individuals, family funds, sovereign wealth investors and foundations.



The investors were approached to gain a broad overview of their perspective of the asset class and the following questions were asked. Not all investors answered all the questions, however a selection of key responses are set out below.

- Have you or your clients invested in forests?
- What type of structure were these investments? (Listed, LLP, open ended)
- What typical investment size were you most comfortable with?
- Do you have any views/preference on the fund strategy? (Plantations, managed natural forests)
- Which region was the fund focused on?
- What sorts of forestry did you look at, liked/didn't like and why?
- Can you recall any specific positive/negative experiences?
- Has your opinion changed to the sector in the last 18 months?
- What research have you done on this space?
- What would persuade/dissuade you/your clients from investing in the space?
- Which sectors/sub-sectors (land/forestry/agribusiness/ecosystems/infrastructure/energy) are of most appeal? (Could you rank them, for instance?)
- What indicative returns are you seeking from forests?
- Duration of the fund?
- How important are ESG guidelines in the investment recommendation?
- Of the asset classes that you/your organisation have looked at recently, on a scale of 'hot, warm, cold' would you say your interest is in forests?

### 6.3.1: Development finance institutions

- DFIs had mixed levels of experience in forestry investments, some having a great deal of investments in agribusiness, others none at all.
- DFIs displayed interest in a variety of different investment structures, but a Limited Partner structure with a 10-year life and a private equity investment strategy was popular.
- The investment size was in the €5–40 million range (one DFI would commit not less than 10%, not more than 25% of a \$500 million fund).
- Investors tended to favour broad, forestry plus agribusiness and associated infrastructure investments, although one favoured timber only.
- Investors felt natural forest investments were difficult due to sustainability issues and thereby reputational risk, and would need to be carefully managed.
- Africa and forestry exposure is interesting but would require a strong track record in this asset class.
- DFIs were sceptical about biofuels and biomass investments from a political and land-use perspective, but felt food crops were an emerging popular theme.
- Investors were sceptical about the feasibility of combining forestry and agriculture due to their different risk and return profiles.
- Typical returns looked for were high teens to 25% pa.
- A 10–15-year fund life was considered credible.

### 6.3.2: Commercial investors

- The majority had either invested in or looked at a forestry deal, and done a great deal of research.
- Commercial investors were interested in a variety of structures.
- The investment size was in the \$10–50 million range.
- A mixture of natural and plantations, provided they prove sustainable.
- Should take advantage of ecosystems credits.
- Global interest.
- Slow progress, tax issues, too early for some.
- Most are responding to a growing interest in climate change by looking at forestry with a new emphasis.
- Most are comfortable with lower returns; stable, less risk.



- Agribusiness/bioenergy of as much/more interest than forestry, although broad sector of interest as a whole.
- Returns expected from African forestry ranged from high teens to 20% net pa.
- A fund life of 10 years was the overwhelming consensus, although one investor preferred five years.
- European standards and guidelines (ESGs) unanimously agreed as vital – reputational risk for investors very high and of immense importance.
- All but one of the investors contacted was ‘warm’ about the fund proposition.

### 6.3.3: Progressive investors

- The foundations contacted had little experience in forestry.
- One sustainable energy investor suggested the market had become ‘critical’ of forestry investments in 2008.
- The skills and expertise of the fund manager would be important, thus over-diversification could be problematic and a significant track record essential.
- The sector was described as popular but ‘fuzzy’, and the issue of excessive institutional involvement and politics was off-putting.
- Returns required were 6–7% above those of listed equities.

## 6.4 Development finance institutions

### 6.4.1: Scandinavian DFI

Interested in pure timber proposition that treated forests as a special asset class; view was that the capital is out there but is moving away from North America to other regions. Had issues about what land was available outside of state owned tracts.

### 6.4.2: UK-based DFI

Timber and other sources of returns such as ecosystems, co-generation and wood pellets, second-generation biofuels were of interest to them and their investors. View is that investors are accustomed to the North American timber model and are thus fairly conservative. Typical structure is a 10-year closed-ended fund with flexibility to either let the fund run for longer or close it earlier (if you generate good returns early and wish to distribute them).

Indicative returns: commercial investors will look for returns between 15 and 20%; DFIs will not have such high expectations. It is important not to have unrealistic return expectations and not to sell a product as a purely return-driven product, as timber is essentially seen as an inflation hedge and is attractive for that reason.

Potential add ons: land plays like biofuels, and could at a pinch be defined as timber, but you may scare some investors off. If you want to include biofuels it should be second-generation biofuels, as these use wood waste and thus are more aligned with forestry and timber as well as not having the negative perceptions that first-generation biofuels have. Ecosystem add ons can be good and innovative.

Land bank accumulation has a negative perception, and any land grabs can have extreme negative effects in the long term to a company’s branding.



### 6.4.3: UK-based, government-backed DFI

Would like to grow exposure to forestry and have a history in hardwood investments: for example, projects in Africa. On fund life, a fund life of less than 15 years is not credible due to the nature of the asset class. The DFI has an appetite for something that long, possibility for capturing cash flows earlier than that, but understand that in the first five years, potentially nothing. Forestry returns are modest – low teens acceptable.

On manager selection, the DFI would look for credible managers on the ground that understand forestry. With forestry opportunities the DFI has seen to date, typically these have been global propositions. Latin America as an emerging market is of less interest, and the market of interest, Africa, has seen few if any fund proposals that met the DFI's investment criteria. In terms of importance of secondary sources of returns, eg biomass or ecosystem services, the DFI was sceptical of forest waste being a significant part of an investment proposition. The DFI felt that anything new/untested in a fund proposition creates issues with assessing the associated risks. It would always invest as a limited partner. Not less than 10%, not more than 25% total fund.

### 6.4.4: International Finance Corporation (IFC)

The IFC committed \$6.5 million to the Fondo de Inversión Forestal Lignum, a \$39.4 million Chilean private equity forestry fund, launched on 12 April 2006. The Lignum Fund will acquire approximately 12,000ha of immature pine and eucalyptus forests, and plant approximately 15,000ha of land with pine and eucalyptus under long-term land-use right agreements with small and medium landowners. The IFC favours private equity structure. It is flexible in terms of investment size. In terms of strategy, the IFC expressed a preference for sustainable plantations, agribusiness (food crops) and associated infrastructure (eg logistics). It felt an even broader thesis – encompassing real estate – would be too diversified. But a timber-only fund was too restrictive. The IFC stressed that unsustainable natural forest logging would be impossible to support. The IFC stated that 20% pa minimum returns required.

### 6.4.5: European DFI

This DFI has extensive experience in forestry investments, including €140 million in 20 projects in China, involving erosion control, sustainable forestry management, reforestation. The majority direct investments, as it has an annual percentage limitation of commitments in other funds. Recently invested in Indian agribusiness fund, but this is an exception. The DFI provides mostly development loans, only small amounts of equity. In terms of size, direct investments in the range of €5–40 million (typically €10–20 million).

The DFI is keen on the concept of a sustainable land use, combining agribusiness and forestry, but less interested in natural forestry because of reputational risk and the long investment horizon (up to ten years before positive cash flows). The DFI has a new emphasis on forestry; as a carbon sink (climate/environmental benefit); and to generate shorter-term returns. It seeks a typical market-rate margin for loans. It expects 20–25% minimum annual equity returns, but noted that forestry tends to produce returns of 10–15%.



## 6.5 Foundations

### 6.5.1: Foundation advisor, London

It has only a limited exposure to date and has invested in one forestry deal in China, where the driving force was the client's interest in following the manager. It typically invests in funds, very rarely making a direct investment – when it do so, this is through a fund management partner. This advisor has not yet been convinced by the agriculture or forestry funds it has seen to date. When it comes to private equity returns, clients are looking for 6–7% IRR in excess of listed equities.

## 6.6 Commercial investors

### 6.6.1: German bank

This bank is currently evaluating forestry as an investment opportunity and, in particular, community forestry with its social investment team. This is a mixed revenues (logging, valued-added work) opportunity that may also have a carbon angle to it. The bank has also been promoting an American-focused forestry fund out of Germany, and has partnered with a UK-listed forestry fund. The challenge the bank has faced is whether to created a 'focused' fund just looking at, say, forestry (or biofuels) or instead to create a multi-faceted asset class combining different things. It is likely to see the development of forestry-related investments in its other business divisions. For example, the interviewee was comfortable discussing that it was looking at options including:

- pooled forestry investment – more 'classical' forestry – which would appear out of its property division
- community forestry and biodiversity – this is likely to appear in the 'social finance' team in New York
- carbon forestry – which would go through its carbon trading desk.

### 6.6.2: Swiss bank

This bank provided a \$200 million credit line to Sustainable Forest Management (SFM), and looked at a number of other forestry investments. It invests via a limited liability partnership structure with a 10-year life. Strategies involve both natural forests and plantation, but are principally focused on the latter. The bank is interested in a global portfolio of forestry investments with only some exposure in Africa. Returns: 12% after fees from a global forestry portfolio.

### 6.6.3: Pensions fund authority

This investor accessed the sector through making investments via an AIM-listed vehicle as well as direct investment into a segregated portfolio. Its typical investment size is about £20 million minimum, with a normal life of a private equity fund investment being 10 years, plus an option to extend. Its strategy is that it prefers natural forests, but would invest in plantations as part of a mixed portfolio. Its insight was that whilst advanced investors are looking at a combination of land, forestry, agribusiness, ecosystems, infrastructure and energy, others are concentrating just on infrastructure.

This institution's current focus is North America, as it liked US hardwood due to the replacement factor for equatorial forest sources. It appreciates that stable regimes and mature markets such as North America offer good access to end markets, although some tax issues have been negative. Attractive features are the ability to invest a meaningful amount and get a good return, diversification of the portfolio and strong corporate governance. Returns: the starting point for US forestry would be 6% real. South America and Africa would need to be considerably higher.



#### 6.6.4: Investment consultant: top four advisors by assets, UK

No clients with exposure to forestry at present, though they did look at timberland as an asset class some time ago. Constraints:

- highly concentrated nature of the asset class at present, with most timberlands being found in three regions within the US, and total free investable assets being in the region of just \$75 billion (see next section)
- potential tax issues related to gaining ex-domestic exposure to timberland
- currently limited number of managers in this asset class
- reasonably high investment minimum if accessing unlisted timberland, even in commingled vehicles
- lack of liquidity of direct investments in the asset class
- clients typically require a long time-horizon to successfully capitalise upon the investment.

#### 6.6.5: Swiss international bank

This asset manager has been actively promoting a pooled forestry investment that purchases traded securities, eg forestry REITs, forestry managers and other timber-related companies. The investment management arm of the bank already invests client funds in listed, private equity as well open-ended vehicles, and currently it is seeing demand for forestry-related investments. Its current promotion to clients is a Luxembourg registered Sicav. Its investment objective is to outperform the wider market place (for which the MSCI world index is often taken as a proxy) over the medium to long term.

The institution has a distinct investment strategy, namely to invest right through the entire timber production chain, although the current focus is on forests and timberland. The fund has no explicit preference as to the type of forest invested in, and it could be wood, timber, engineered wood, or pulp for the paper industry. In terms of its approach to forestry, it has no particular interest in specific approaches – it stated that it invests in forest management companies where it sees good opportunity; however, ESGs form an important part of how it analyses forestry. Geographically, the fund is invested 60% in the US and 18% in Europe, and the balance is the rest of world.

#### 6.6.6: UK-based investment broker to a timber private equity fund

Whilst none of this broker's clients had invested in forests, he did act in 2008–2009 as a broker to a proposed timber private equity fund focused on Latin America, namely Brazil, Uruguay and Columbia. The broker was seeking investment commitments of between \$20 and \$50 million from its clients. The concept that the broker was most interested in promoting to its client was active forestry management – production forests for industrial or commercial use, eg high-yielding eucalyptus principally for aluminium smelters. The target market was not selective logging for high-end veneers.

Although the fund didn't raise capital due to market conditions, the exercise was positive in that the team was recognised as being very credible with a good business plan, good pipeline, and a good set of off-takers for the forest products. This particular broker stated that he remained very positive on the sector. As head of a renewable energy team involved in both private and public equity, he felt that as a sector, forestry is not something that he expected to be involved with again. From an investing-in-forestry perspective, he was drawn to two angles – first, carbon credits from ownership of forest rights, where he is interested in the emerging eco credits market. Secondly, he has looked at commercial timber deals in Africa (in Tanzania and Botswana), and would see market interest in this.

This broker identified concerns with the asset class which are common to many investors that were interviewed, namely that a forestry transaction is a very different proposition to others. For a new Greenfield project, even with the fastest growing eucalyptus, investors



are still looking at 5–10 years before real returns are generated. This different investment and return profile meant that forestry was slightly outside of his personal window – but he did find some credible institutions interested in forestry as a longer-term investment. When asked about the importance of ESG issues, the broker's view was that a high standard of environmental sustainability is paramount.

The main factor dissuading clients from investing in the space was liquidity, which investments in the sector lacked. On a risk return basis, the broker felt that the return profile was not very 'racy' but investors should be able to get 15–20% IRR. As a long-term play, then, overall it's a good play. But the critical issue is whether investors are willing to commit their money for up to 10 years. In the current climate, very few people would want to do that. In fact, the broker's view was that as an opportunity today, at the time of writing, forestry is "less than cold. Not on people's horizon at all".

#### 6.6.7: UK-based broker and consultant to the forestry sector

This broker has experience in investing in forestry portfolios from \$100,000 up to \$20–30 million, and has a preference for natural stands of Forest Stewardship Council (FSC)-certified forest, which he believed could make a positive contribution to economic and environmental welfare. This broker is a particular advocate of investing in natural hardwood stands in the US: whilst this type of investment is harder to understand due to its diversity and is more difficult to model financially, it is an attractive asset as it gets mispriced in the marketplace. The advisor's view is that the industry has yet to see sustainable management of natural stands in tropical areas, but that the experience in the US – mixed species managed in their natural environment – is translatable to other markets. He is not a fan of teak stands.

The advisor has undertaken a range of research exercises over the years, and believes that one area of information poorly understood is the range of returns, which requires comparative analysis of performance data. For example, the IPD index on timber and the NCREIF index in US. Without comparative data, new investors have a real struggle to understand what is going on. The main factor persuading or dissuading clients from investing in the space is to understand returns both in terms of level and in terms of the drivers for example, liquidity, risk, and the need or not for diversity in the assets invested in.

When asked about preferred returns, his view is that "investors shouldn't be investing in forestry to get a higher return. The reason you should be investing in forestry is following the capital asset pricing model, the return is less volatile than in other asset classes." Essentially, if you invest in forestry – which is not very volatile – you can invest in other parts of the portfolio with higher risk and return to get a good return from the fund overall while maintaining more stability. To that end, investors should be thinking of the asset class as a minimum of 10 years investment stretching to 20–25 years.

## 7 common characteristics of leading forestry funds

At the time of writing, the financial markets have experienced considerable turmoil and investment losses, leading to capital scarcity, and have limited funds available to finance new funds. Where investments are being made, liquidity has been a key component to the design of the investment structure so as to appeal to investors. Whilst long-term limited partnerships with a life of 15 years might appear the best fit for forests, institutional investors have tended to avoid them. Instead, they are drawn to listed, closed-ended forestry funds, of which Phaunos, which moved to the main list of the London Stock Exchange, has been the most popular. Of institutions contacted in this study which say they are investing in forests, few have done so on the basis of financing forestry funds



via the private equity route. Instead, UK-based funds investing in forests have done so by purchasing listed forestry fund shares from other investors in the secondary market.

The forestry funds available to institutional investors in the UK range in size in funds under management from under \$50 million to up to \$2 billion, namely the Phaunos Timber Fund. From 2000, where previously the main UK listed forestry vehicle was Fountains Forestry, there are now a growing number of pooled investment funds available to investors, namely Cambium, Phaunos and, more recently, Radicle Timber. In the private equity space, a number of specialist vehicles have been promoted to institutions, and these include the Amata Fund, The Russian Timber Group, the IBIS Forestry Fund and the Caudex Sustainable Timber Fund. The funds vary in terms of their date of inception and the geographies invested in as well as the overall fund structure.

Return characteristics vary considerably from typical private equity returns. From the analysis above, 10–13% net IRR is the range indicated, with the majority of the investments being co-investments with local partners.

Phaunos and Cambium express the need to diversify forestry investments amongst age, geography and tree species for the purpose of diversification of risk mitigation, as well as balancing returns from the fund. This is achieved by investing in more mature forests that generate near-term returns in addition to younger forests with larger long-term returns.

The Cambium Global Timberland Fund initially proposed to raise up to £250 million (before expenses) in a placing on the AIM market, 6 March 2007, but was only able to raise a total of £104,350,000 (perhaps indicating a lack of investor appetite for its original proposal). The Phaunos Timber Fund has generated success in capital raising, illustrated by its move to the main list. Investors in the funds range from pension funds (British Steel, ABP) to retail and high net worth investors.

## 8 the risks of forest investment

In the forest management industry, there are clear distinctions between investment in natural forests (typically through selective logging) and the financing of plantation forests either through convention monoculture, or new approaches to management by re-forestation that promotes biodiversity. These differences are not widely understood by institutional investors.

For investors concerned about forest and ecosystem conservation, particularly in tropical forest areas, there is no consensus that opening up high conservation value rainforests to logging can help protect their future. This paper leaves un-addressed the important and real question of whether allocating capital to the forestry sector might have negative ecological outcomes. Empirical evidence needs to be provided, demonstrating past evidence of where investment (for logging) in natural forests has helped protect the forests' future. Even funds promoting the concept of 'sustainable forestry' can cause damage to remaining areas of intact forest canopy – particularly where investors are promising very high financial returns in the mid 20's IRR – by opening up previously untouched forest areas to logging. In this respect, more capital might not necessarily be a good thing if in fact protection and conservation is the policy goal.

Capital could be used beneficially for large-scale re-forestation projects, particularly in parts of Latin America and South East Asia. If such investment is long-term – where the returns are akin to an annuity payment (perhaps as part of an asset-liability model for pension funds) then more capital would do a great deal to enhance the value of managed forest areas. However, if capital is used simply to enter into large-scale monocultures, then at a simplistic level there is little ecological benefit. Such approaches are basically "timber as a commodity" rather than forestry management – to protect important areas of the planet's biodiversity.



## 9 conclusions

This chapter has sought to bring together some older, common threads of thinking such as the ability of forestry investment to diversify away risk – an uncorrelated asset class – alongside some of the practical questions such as what is the source and nature of investment returns and what historical data is available. It has then attempted to bring into this assessment an understanding of how other approaches – particularly forest-based carbon – can add to investment returns.

The chapter has also sought out which forestry investment funds are being promoted to institutional investors; what their preferences have been; and insights from market intermediaries such as brokers, consultants and investment managers.

There are some broadly agreed trends and the author has drawn the following observations and conclusions:

- **Long-term investing – asset/liability driven investment.** Forestry ought to grow as an asset of choice for pension funds concerned at more closely matching long-term assets with liabilities. This is an important but little understood factor and one that could be explored in more depth by consulting actuaries. If handled well, pension funds could be a source of long-term investment into the forestry sector internationally. It is recommended that investment actuaries and consultants be engaged to look at this specifically.
- **Forestry as an asset class.** Forestry has the potential to be an important asset class for institutional investors seeking to diversify risk. However it is not yet a recognised asset class in its own right in Europe, specifically the UK. A trustee guide, perhaps one focusing on its long term nature or environmental benefits in addressing climate change (if properly managed) would probably be useful.
- **Understanding plantation forestry versus natural forest management.** The differences between timberland investment typically for pulp or dimensional lumber for the building industry versus exploiting natural forests for veneers is poorly understood. This is especially true when comparing approaches to southern and northern hemisphere forestry. In the Latin American context, vast monoculture plantations could be used for industrial ends – eg pig iron – whilst attracting a tag called ‘sustainable’. This bears no relation at all in character to natural species for selective logging used in flooring or furniture, which could also be described to investors with the moniker ‘sustainable’. Any guides for investors should address this point and, in particular, the very real dangers to the protection of natural forests of poorly managed ‘investment’ by logging of natural forests. There is little evidence that opening up tropical forests to large, private investment for the purpose of logging helps to protect these areas long-term. Nor is there evidence that industrial logging benefits local people. Any guide ought to reference this.
- **REDD and Forest Carbon.** Although reviewed in this study, the understanding of voluntary carbon markets and their ability to generate financial returns is actually quite abstract from the behaviour of institutional investors, as they are not (largely) players in this nascent marketplace. Other markets have drawn institutional investors to the forestry space – and this has been in an area not researched in this paper, namely the market for biomass for energy. For investors to understand the opportunity in this marketplace, a regulatory framework will be required.
- **Fund of Forestry & Biodiversity Funds.** Government and institutions could kick-start forestry investment by awarding a mandate for a fund of funds for not just forestry investment in the southern hemisphere, but also a manager that could select the best REDD or avoided deforestation funds. This approach would encourage new investment funds to apply for investment and then attract other private sector institutional investors. In the field of renewable energy, the ‘open for business’ approach taken by GEREFF (The Global Energy Efficiency and Renewable Energy Fund) from the European Investment Bank (EIB) is a good comparator for how a forestry fund might work.



- **Forest Investment Insurance Facility.** Investment return expectations appear to be quite high by investors, particularly given the historical returns achieved. This expectation is acute for investors looking at Latin America, Africa or SE Asia and natural (not plantation) forests due to risks associated with investing in those locations. De-risking these countries as areas of investment ought to be encouraged – perhaps through insurance guarantees. In return for this insurance, there should be a commensurate drop in the expectation of financial return to more modest, perhaps high single-digit levels.

## 10 case study: global solidarity fund

The Global Solidarity Fund is a private equity fund with approximately 450,000ha of land under management in Africa (Table 5). Investments are made into FSC-certified timberland and timber-related products and services. The typical nominal amount invested ranges from \$10 million to \$46 million, with an average of approximately \$24 million per investment. The size of the land under ownership ranges from 17,100ha to 68,500ha plantations, with an average of approximately 38,900ha. The fund currently has investments established in Mozambique as well as Angola. The current size of the fund is \$160 million, and the fund is structured as a private equity investment vehicle.

The Global Solidarity Fund places a strong emphasis on southern hemisphere emerging markets, which have compelling competitive advantages in terms of timber production and manufacturing. Furthermore, international market demand, particularly for high-value, tropical hardwoods, increasingly exceeds supply. The combination of high growth rates and lower costs results in low delivered wood costs and an overall attractive industry.

The strategy for choosing investments is based on the following preconditions:

- highly favourable natural conditions for forestry
- availability of land, either through ownership or long-term concessions from government
- preference for concessions that are available directly
- co-operation with a national partner; eg a local church with capacity and interest in the project
- a minimum of 10% local ownership, to avoid future land conflicts
- no relocation of people
- no conversion of natural forests
- potential of a minimum of 10% real IRR
- the project must be welcomed and endorsed by the host government
- preference for establishing new forest enterprises
- for every hectare of new forest plantation, 1ha of protected or responsibly managed native ecosystem is set aside
- all of the company's investments are subjected to certification according to the FSC, a third-party verification by an accredited organisation which confirms that forest management plans are economically viable, socially acceptable and ecologically sound
- all of the company's investments will adhere to the 10 universal principles of the United Nations Global Compact, including relevant:
  - ILO conventions on health, safety and the working environment
  - UN and ILO conventions on biodiversity, conservation, human rights, individual freedom, indigenous peoples and ethnic minorities.



Table 5: The Global Solidarity Fund scores highly in most areas

	Track record	Geographical experience	Sector experience	Specialist adviser/fund co-manager	Operational team	ESGs
Phaunos Timber Fund	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓ ✓
Cambium Global Timberland	N/A	✓	✓	✓ ✓	✓ ✓ ✓	✓
Quadris Environmental Fund plc	✓ ✓	✓ ✓	✓ ✓ ✓	N/A	✓ ✓ ✓	✓ ✓ ✓
Global Solidarity Fund	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	N/A	✓ ✓ ✓	✓ ✓ ✓
Global Environment Fund	✓	✓ ✓ ✓	✓ ✓ ✓	N/A	✓ ✓ ✓	✓ ✓ ✓

Source: London Bridge Capital, internal research 2008, (unpublished)

## 11 appendix: fund overviews

### 11.1 Radicle timber, Australia

The asset manager, Radicle Projects, has identified a portfolio that is diversified in terms of species, maturity of forest and geography so that it yields an attractive mix of capital appreciation and cash generation from harvested assets. The company is targeting a pre-fees IRR of 10–15% that is superior to that which can be earned on similar assets in the US, primarily because of lower levels of demand and, hence, prices for forest assets.

### 11.2 Phaunos Timber Fund

The Phaunos Timber Fund listed on the AIM market of the London Stock Exchange on 20 December 2006. The fund is a closed-ended investment company registered in Guernsey.

#### 11.2.1: Details of the initial placing and any subsequent placing

The net proceeds of the placing after expenses amounted to \$110.45 million, to give an initial NAV of \$0.96 upon listing. The placing was undertaken by Shore Capital Stockbrokers and LCF Rothschild. The company raised a further \$370 million through a secondary equity fundraising in June 2007.

The shareholders are listed in Table 6.



Table 6: Phaunos Timber Fund shareholder list, 2008

Holder name/fund	Institutional position	Value owned	% O/S	Type
Euroclear Nominees	165,027,343	\$179,879,804	35.04	Nominee
Citibank Nominees (Ireland)	124,072,789	\$135,239,340	26.35	Nominee
Chase Nominees Ltd	48,206,467	\$52,545,049	10.23	Nominee
Midas Capital Partners Ltd	8,500,000	\$9,222,500	1.81	Institution
Investec Asset Management Ltd (UK)	6,579,999	\$7,139,299	1.40	Institution
F&C Asset Managers Plc	5,248,525	\$5,694,650	1.12	Institution
BlueCrest Capital Management	4,878,698	\$5,000,000	1.04	Institution
Petercam (Luxembourg) SA	2,000,000	\$2,170,000	0.43	Institution
Baring Asset Management Ltd (UK)	1,518,691	\$1,647,780	0.32	Institution
Optimix Vermogensbeheer NV	1,442,308	\$1,564,904	0.31	Institution
Banque Degroof SA	1,346,154	\$1,460,577	0.29	Institution
Banque Degroof Luxembourg SA	687,275	\$745,693	0.15	Institution
Insiders (Oates/Niven/Tara)	205,000	\$223,450	0.05	Insiders
<b>TOTAL</b>	<b>369,713,249</b>	<b>\$402,533,046</b>	<b>78.54</b>	

Source: Cary Krosinsky, from best available public sources

### 11.2.2: Investment objective and policy

The company aims to achieve long-term total return appreciation, predominately in the form of capital appreciation but with a small amount of current income through a diversified portfolio of timberland and timber-related projects. FourWinds Capital Management has the role of investment manager, and aims to achieve the above objective through the following three strategies:

- 1) seeking exposure to timber and timber-related products on a global basis
- 2) seeking portfolio diversification by tree species, age classes and geographical timberland markets
- 3) seeking to control risk through diversification, investment vehicle selection and implementation of risk control strategies.

The company will invest in developed timberland markets with politically stable investment conditions. The company has stated that it will invest in at least three different regions of the world with no single investment exceeding 30% of the gross assets without unanimous board approval.

The company places the majority of its cash in money market instruments, pending the investment of funds into appropriate projects. The company is authorised to use timber-related instruments such as financial futures, options, warrants and swaps,



the return of which will be linked to timber indices or other timber investments. To date, the company's financial statements do not make mention of the use of such financial instruments. Similarly, the company will be able to hedge foreign exchange risk through the use of forwards and futures; however, once again the financial statements of the company show no evidence of this and, to the contrary, a minor gain on foreign investment has been realised.

### 11.2.3: Targeted return

The company is targeting average annual total returns of 8–12% per annum net of all applicable taxes and fees, once the proceeds of the placing have been fully invested. After the full investment of the funds, the company expects to distribute a part of the return to shareholders as dividends, paid on a half-yearly basis and estimated to be between 2 and 4% per annum. The primary components of return are expected to be through the harvest and sale of timber growing on invested properties. Secondary sources of return include outsourcing of mineral or water rights, carbon credits and hunting or recreational licensing.

The company views the returns from timber to include (1) tree-derived income, (2) land prices and (3) other secondary income (as described earlier). Tree-derived income is considered the largest component of total return, and is driven by both biological growth, in-growth (also referred to as the 'warehouse' component) and timber prices. The investment manager has estimated annual growth rates to exhibit the following geographical patterns:

- Scandinavia, 1–2%
- southern US, 5–7%
- US Pacific Northwest, 8–10%
- New Zealand, 12–16%.

### 11.2.4: Perceived portfolio benefits

The company offers the traditional explanation and motivation for its timber fund. These include the low correlation that timberland investing has in relation to other asset classes and the empirical positive correlation to inflation. The principles of modern portfolio theory thus render timberland investing higher on the Markowitz efficient frontier of a portfolio comprised of debt, equity and real estate investments. Perceived benefits include:

- Geographical diversification:
  - 1) a commitment to invest in at least three major regions of the world
  - 2) balance between mature markets (with less return potential but lower risk) and newer markets (higher return potential with associated risk)
  - 3) no single investment representing more than 40% of the gross assets.
- Species diversification:
  - 4) investments in hardwood (deciduous trees such as oaks and aspens) and softwoods (conifers and evergreens, such as pines, spruces, firs and junipers)
  - 5) species mixes creates diversification in terms of growth rates, rotation cycles, wood use, price exposure, growing conditions, physical risks and timing of harvests
  - 6) currently 7.7% of the investments are teak plantations, 48.7% poplar and 37.9% pine.
- Age class diversification:
  - 7) gaining exposure to both young growth and merchantable timber to balance income needs and capital appreciation.



### 11.2.5: The investment process and structure

Deals will be sourced by the investment manager through timber managers, timber investment management organisations (TIMOs) and timber advisers as well as through direct market research. Due diligence will include, but not be limited to, evaluation of: property location, total acreage, current growing stock (stand composition, stand health and quality, timber inventories, allowable cut, growth to harvest ratio), productivity (site index), operability (slope and soil conditions), proximity to mills (estimated transport costs), accessibility (quality of infrastructure), regulatory and environmental constraints, other revenue sources, local forester or timberland manager qualifications/experience, ethical management principles, acquisition price and conditions and exit options. The investment process has the following attributes:

- due diligence will be conducted by either the investment manager or external consultants
- tax consultants may be used
- investments may be co-investments with TIMOs or other fund managers, co-investments with institutions, investments through special purpose vehicles, joint ventures and other timber-related structures
- legal structure and tax accountants have been established in all countries where investments are intended.

Furthermore, the investment manager has an internal timber investment committee that will be responsible for reviewing projects in terms of comparability and suitability in relation to guidelines set by the board. In the event of disposals, the investment manager must seek approval from the timber investment committee by presenting a detailed report.

### 11.2.6: Current investments

- June 2007: \$30 million investment in a partnership in the north-western US, which has acquired its first tree plantation, a poplar tree farm in Boardman, Oregon.
  - the partnership purchased 17,000 acres of hybrid poplar tree for \$65 million
  - certified under FSC.
- June 2007: Phaunos committed \$10 million to an investment partnership investing in the south eastern US designed to realise the ‘higher-and-better-use’ values of timberland properties. The investment properties are located near major metropolitan areas in the southern US, where property values have risen to the level that the timber revenue is no longer adequate to justify investment.
- September 2007: the fund announced the establishment of a wholly owned subsidiary, Caldrey SA, a Uruguayan company, to enable access to the growing forestry sector in Uruguay. Phaunos has committed \$7 million into the subsidiary, which will, in conjunction with a local partner, provide timber-harvesting and road-building services to forestry owners and operators. It is expected to be cash-flow-positive in its first year of operations.
- September 2007: Phaunos announced the establishment of Aurora Forestal SA, a joint venture with the prominent Uruguayan industrialist family led by Lorenzo Balerio. Phaunos will initially invest \$21 million into the new company for a minority interest.
  - exposure to plantations including over 18,500 hectares of pine plantations
  - FSC certified.



- December 2007: an additional Uruguayan investment of \$6.3 million was made via the purchase of 2,000 hectares of land in south-eastern Uruguay. The properties will be planted with selected species of eucalyptus to be grown on short rotations for the fibre market.
- December 2007: \$5.5 million investment into Indonesia, the pursuing of several investment projects in Brazil, and advanced due diligence on projects in North America, Central America, Africa and Eastern Europe.

### 11.2.7: Further announcements

Phaunos announced its plans to build a wood-pellet-processing facility in southern Serbia. The plant will use waste wood fibre to create high-density wood pellets that provide a highly efficient alternative fuel for home, institutional and industrial heating applications.

- \$9 million to build the first of several wood pellet plants in Eastern Europe.
- \$150 million investment into a joint venture with Nemus, a Brazilian company.
  - development of teak and eucalyptus plantations in the Mato Grosso region of Brazil
  - nemus contributed its existing assets of the FSC-certified teak and eucalyptus plantations.
- \$200 million commitment to a joint venture in China.
  - investment in fast-growing tree species in several regions across China
  - co-investment with GreenWood Resources, which has been operating in China since 2000.
- Joint venture with Aitchesse Limited. Aitchesse sources forestry investment properties on behalf of clients in the UK, Romania, Latvia and Lithuania.
  - phaunos has secured the right to commit up to \$150 million towards the joint venture.
- On the 10 January 2008 the company detailed that it would de-list from AIM, conditional upon the shares being admitted to the main market of the London Stock Exchange. This would be coupled with a capital raising on \$1.6 billion. It is anticipated that the transaction will close in June 2008 and the shares will be placed with DWS ACCESS SA, the Luxembourg-based mutual fund arm of Deutsche Asset Management.

### 11.2.8: Fee structure

The fee structure details the following arrangements:

- 1.5% of Net Asset Value management fee payable to the investment manager
- 20% of any excess returns over 8% per annum.

Risks outlined in the initial prospectus:

- 1) Physical risks associated with a timer:
  - the company does not have insurance for loss against natural disasters (losses from such causes are typically 0.5% annually in managed forests).
- 2) Economic risks:
  - volatility of timber product prices and demand from general economic activity.

*Source: Phaunos Prospectus and various broker reports*



### 11.3 Cambium Global Timberland Limited

The company proposed to raise up to £250 million (before expenses) pursuant to a placing on the AIM market (6 March 2007). In the first interim reports, the company reported it had raised a total of £104,350,000 (net of expenses). The company's investment objective is to achieve capital growth and income primarily from a global portfolio of forestry-based properties. Forests located in key timber-producing regions of the world and valued at between £5 million and £25 million will ordinarily be targeted.

The shareholders are listed in Table 7 below

**Table 7: Cambium Global Timberland shareholder list, 2008**

Holder name/fund	Institutional position	Value owned	% O/S	Type
Baillie Gifford & Co Ltd	16,487,300	\$33,165,490	15.80	Institution
Landsbanki Securities (UK) Ltd	10,539,350	\$21,200,725	10.10	Broker
AXA Framlington Investment Management Ltd	10,017,600	\$20,151,184	9.60	Institution
British Steel Pension Scheme	10,017,600	\$20,151,184	9.60	Pension
Rensburg Sheppards Investment Management	6,991,450	\$14,063,847	6.70	Institution
SVM Asset Management Ltd	5,530,550	\$11,125,133	5.30	Institution
Artemis Investment Management Ltd	5,008,800	\$10,075,592	4.80	Institution
Tilney Investment Management Ltd	4,591,400	\$9,235,959	4.40	Institution
Midas Capital Partners Ltd	3,756,600	\$7,556,694	3.60	Institution
Speirs & Jeffrey Ltd	3,756,600	\$7,556,694	3.60	Institution
Scottish Widows Investment Partnership Ltd	2,039,109	\$4,101,827	1.95	Institution
Smith & Williamson Investment Management	180,000	\$362,084	0.17	Institution
<b>Total</b>	<b>78,916,359</b>	<b>\$158,746,413</b>	<b>75.62</b>	

Source: Cary Krosinsky, from best available sources

#### 11.3.1: Investment objective and policy

The company will seek to invest primarily in forestry assets or operations which are or can be managed on an environmentally and socially sustainable basis. The fund will seek out opportunities to gain value from certification of its forest management systems, from the commercial development of environmental products and services, and from the reduction of risk by community engagement and workforce development. Investments may be managed for timber production, environmental credit production or both. No investments will be made into processing facilities.



The aim is to establish a portfolio comprising geographically diverse assets located both in mature markets and in developing markets where potentially higher returns may be generated but with higher risk. The company will initially target investments in North and South America and the Asia–Pacific region (including Australia and New Zealand), but may invest in other regions on an opportunistic basis (Table 8). The fund aims to balance current income needs with capital appreciation and will diversify according to location, age class and species of the specific timber assets. Subject to prevailing market conditions, the company's current expectation is to de-emphasise pulpwood plantations, be neutral on softwood structural lumber, and emphasise investments producing hardwood sawlogs.

**Table 8: Regions targeted for investment**

Core allocation regions	Opportunistic regions (10%)
North America (25%)	Western Canada
Australia/New Zealand (25%)	Africa
South America (20%)	China
Asia–Pacific region (excluding Australia/New Zealand) (20%)	

Additionally revenue from the assets may be in the form of, but are not limited to, the sale of carbon credits, water use rights, endangered species banks, tradable development rights, conservation easements, leasing of ridgelines to wind farm operators, development of small scale hydro-electric generation facilities, and co-operating on biomass energy development.

In emerging markets, significant value can be added by rationalising underperforming management or changing management strategy so as to achieve greater efficiency. Many plantation operations suffer from inappropriate choice of tree species, poor timber, lack of capital for roads, plant and equipment and a general lack of management competency. Putting in place effective management can significantly increase returns.

The fund views many emerging market transactions as complex with the requirements of negotiation with governments or governmental agencies and unsophisticated counter-parties. The fund further mentions a higher level of risk associated with such investments and applies higher discount rates to such potential projects. Once the projects are placed under professional management their marketability may significantly improve as the risk profile is seen to decline; this is viewed to have the potential of significant uplift.

### 11.3.2: Targeted return

The target dividend, after the company is fully invested, will be at the annual rate of £0.05 per ordinary share, and is expected to grow in due course as the portfolio matures. However, this target dividend is illustrative only and based on a number of assumptions which may not materialise. No further targeted return disclosures are made.



### 11.3.3: Investment manager

The company has engaged CP Cogent Asset Management LP to act as the global asset manager of the company's portfolio of assets, with responsibility for all investment decisions, subject to the overall supervision by the board. New Forests Advisory Pty Limited has been retained by Cogent to provide investment advisory services in relation to the company.

### 11.3.4: Investment process

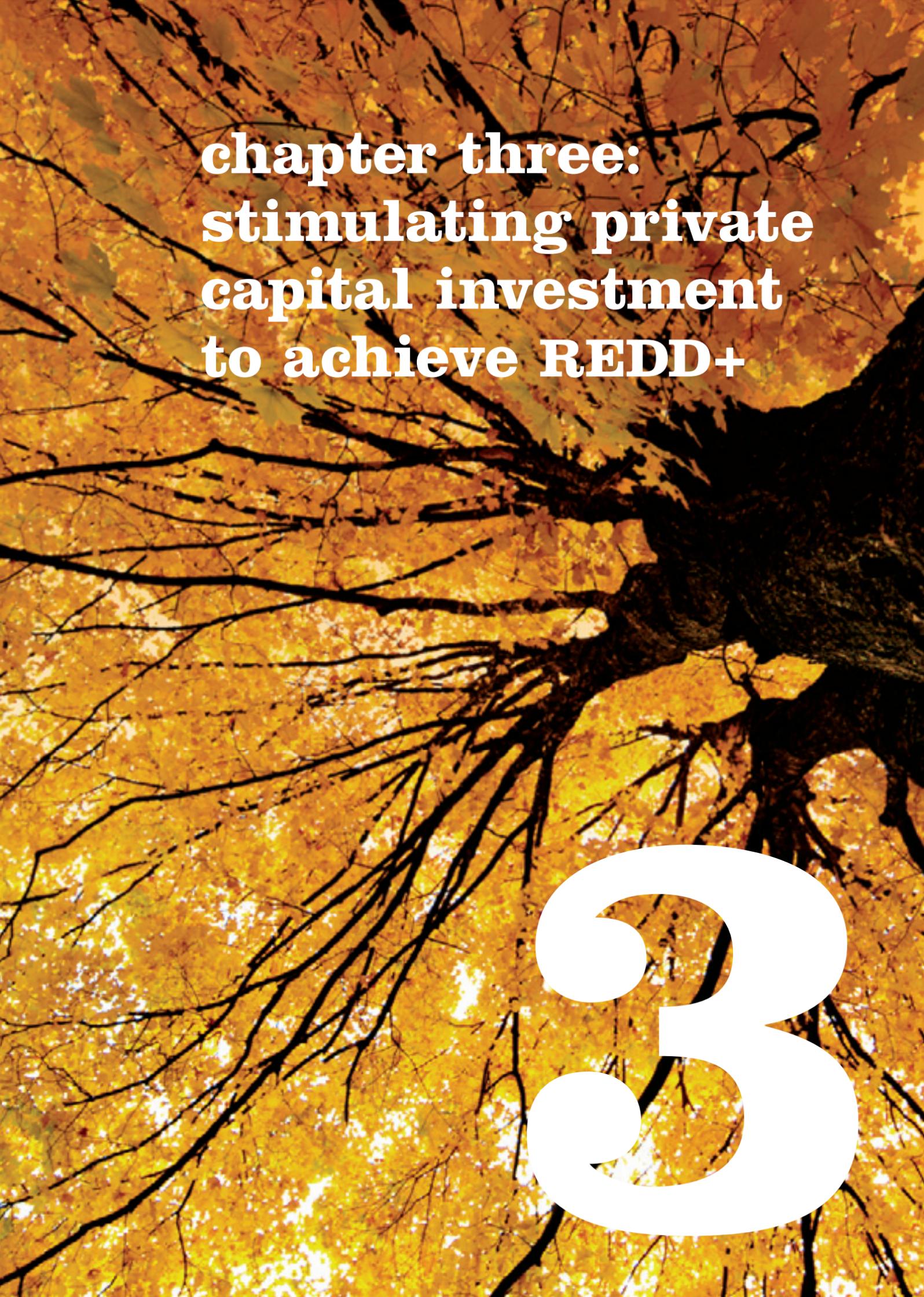
Cogent will have responsibility for all investment decisions, subject to overall supervision by the board of directors. New Forests will act as global investment adviser, will have primary responsibility to assess individual investment opportunities and provide advice to Cogent in relation to those opportunities. New Forests will employ a proprietary due diligence process that is both quantitative and qualitative in order to identify TIMOs expected to generate above average risk-adjusted returns.

### 11.3.5: Current investments

- 30 April 2007: option to acquire 8,500-hectare (21,500-acre) reforestation project located in New South Wales, Australia for AUD9.1 million.
  - half of the property to be used to establish hardwood plantations for sawlogs that can be sold to rapidly growing timber markets in Asia
  - shorter-term returns expected to come from the sale of carbon credits.
- 19 June 2007: acquired 21,853 acres of income-producing timberland in East Texas for approximately £13 million.
  - diverse pine plantation that has a well-structured array of age classes that allow for immediate income generation from existing saw-timber, and continued long-term growth from less mature trees.
- 6 August 2007: 6,100 acres of timberland acquired in Hawaii for approximately £3 million.

*Source: Cambium Prospectus*





**chapter three:  
stimulating private  
capital investment  
to achieve REDD+**

**3**

### About the authors

Stuart Clenaghan, Jacopo Levi Morenos  
and Alberto Thomas

Stuart Clenaghan, Jacopo Levi Morenos and Alberto Thomas are principals at Eco System Services Limited (ESS). ESS was founded in 2007 to focus on the financing of sustainable tropical forestry and land-use projects. The company provides consultancy services alongside project investment by its principals.

ESS's principals are experienced early stage investors in sustainable forestry and carbon finance including: Green Gold Forestry Limited, a UK sustainable timber products company operating in Peru; the New Forests Company, the largest reforestation company in Uganda; Carbon Capital Limited, providing reforestation and renewable energy in China and South-East Asia; MTM Capital Partners, a fund manager specialising in coal mine methane recovery in China (bought by the MAN Group).

ESS is a donor supporter of Iwokrama, a 1 million acre rainforest reserve gifted by the Guyana government to the Commonwealth, where Stuart and Jacopo served as advisers.

Stuart, Jacopo and Alberto have extensive banking experience, especially in fixed-income structured finance and trading. They met when they worked together at UBS.

## highlights

- Achieving REDD+ will require the successful implementation of a tailored and integrated strategy for each forest nation: attribution of value to standing forests; investment in intensive agriculture, sustainable forestry management and planted forests; creation of long-term job security and sustainable livelihoods away from the forest frontier.
- REDD+ presents attractive opportunities for equity investment by private capital, but targeted financial incentives are required to stimulate scalable and long-term investment in many countries. These could be provided through multilateral development banks and local financial institutions.
- In some countries, private investors will require improvements in governance, law enforcement, land tenure, regulatory procedures, tax treatment, and availability of personnel with relevant skills.
- International investors will seek partners with local knowledge of markets and operating conditions.
- Many small and medium-sized enterprises in developing forest nations require additional finance, training and access to market for sustainably produced products in order to redirect activities away from the unsustainable use of forest land.



## introduction

This chapter provides an overview of the existing global market for forestry investment and sets out proposals for significantly increasing the flow of private investment into projects in developing forest nations that deliver scalable REDD or REDD+, which includes enhancement of forest carbon stocks.

Deforestation is a dynamic process, driven mainly by human agency and usually underpinned by economic motives. In order to deliver REDD+, a developing forest nation would need to implement an integrated economic strategy, steering development away from unsustainable extraction and clearance of forest land, and in support of conservation. Such a strategy would comprise three broad elements:

- (1) attribution of value to standing forest to counter the opportunity cost of deforestation, and support for the rights of indigenous peoples;
- (2) stabilisation of the forest frontier (where most deforestation occurs), through investment in areas such as sustainable forestry management and intensive agriculture. This is likely to require resolution of land tenure claims, enforcement of forest laws, and controlled development of roads and other infrastructure;
- (3) investment in projects, including planted forests, which generate long-term job security and sustainable livelihoods away from the forest frontier. To support sustainability, governments should foster consumer demand for sustainably produced forest and agricultural products in both international and domestic markets.

REDD+ projects such as sustainable forestry management and planted forests are potentially very attractive to the private sector, which could provide equity or other investment. However, the investment environment in many developing forest nations is wholly immature, lacking appropriate government policies, experienced operators, identification of opportunities, adequate land tenure laws, and bank and finance facilities. These factors present significant barriers for private capital, and must be remedied in order to stimulate investment in REDD+.

International REDD+ investors would generally need to identify partners in host nations who understand local market and operating conditions. Partnership would facilitate investment flows as well as catalyse transfer of technical expertise.

Investment could be enhanced through specific measures that create a favourable institutional environment for international investors. This might include both capacity building in host countries to manage inward investment and targeted support to increase capacity in international capital markets to deliver REDD+ investment.

In addition to large-scale REDD+ projects, it should be anticipated that significant investment would be required to support the transition of small or medium-sized enterprises from activities that cause deforestation or land degradation to sustainable practices. Amongst other measures, this would require provision of small-scale finance, training, and strong price signals for sustainably produced products.

Multilateral development banks (MDBs) could take a leading role in stimulating investment in REDD+ through provision of targeted finance and risk-mitigating services to the private sector directly, or through local intermediaries. In order for MDBs to deliver such a mandate, government or other public finance might be required increase the banks' capital base. However, in return for their investment, governments could receive REDD+ credits. These credits could be retired, or later sold, when REDD+ market mechanisms have evolved.



# 1 specific proposals

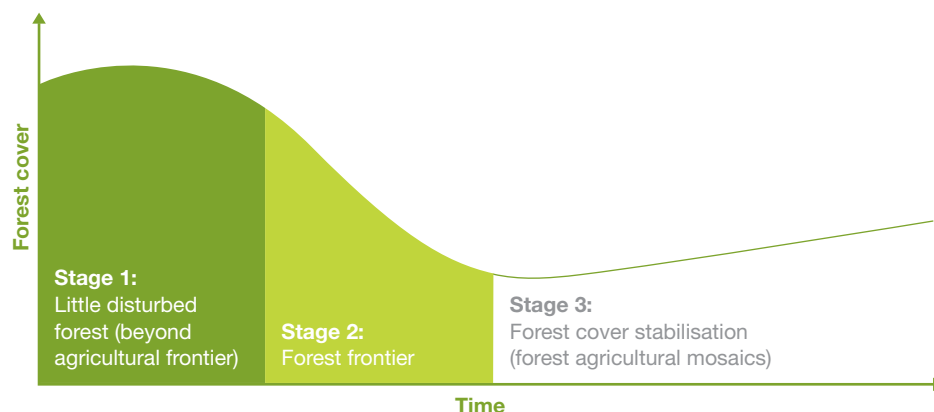
- (1) Increase capacity in the public financial sector to support private investment in REDD+ projects:
  - Use public funding to increase the capital of existing development banks (such as the World Bank) with the mandate to develop new financial tools that help develop capital markets for REDD+ projects:
    - 8) increase capacity to insure political and land tenure risks.
    - 9) provide debt facilities or credit enhancement for REDD+ investments.
    - 10) provide maturity transformation mechanisms to enhance near-term cash flows from REDD+ projects, such as forest planted forests.
  - broaden access by private capital to co-investment opportunities with the public sector (eg invest alongside development banks)
  - engage with commercial banks and other financial institutions to improve understanding of the opportunities available in the REDD+ sector and build expertise in financing REDD+ projects.
- (2) Prepare host country businesses for international partnership and increased capacity to absorb investment:
  - incentivise REDD+ performance through paying against target outcomes
  - foster domestic financial institutions to provide targeted finance
  - deliver front-loaded finance for capacity-building
  - reduce bureaucracy and excessive regulation
  - contain illegal logging and unsustainable forestry practices
  - train and certify senior personnel in internationally accepted business practices including accounting, reporting, governance, etc
  - invest in forestry management training and skills development
  - create international centres of excellence for REDD+, including education, research, resource-sharing.
- (3) Promote REDD+ investment opportunities to the global investment community:
  - create country REDD+ development plans
  - provide consistent, certified information on global opportunities such as mapping, soil type, land-use history, tenure, infrastructure, etc
  - identify potential business partners in-country
  - identify and promote risk mitigation resources such as loans or insurance
  - share risk – eg through funds set up through bilateral or multilateral development finance institutions, or challenge funds.
- (4) Support the development of markets that give clear price signals for REDD+:
  - encourage greater consumer demand for sustainable forest products, such as certified timber
  - deter major markets from buying low-priced forest products from unsustainable sources
  - create price stability for sustainably produced forest products through off-take agreements or hedging facilities
  - give clear price signals for carbon and ecosystem services, such as a price floor or long-term off-take.
- (5) Invest in research to establish best long-term REDD+ investment strategies:
  - establish priorities for investment, identifying ‘low-hanging fruit’
  - ensure that REDD+ investment generates a net positive carbon effect
  - trial new methodologies and business models
  - measure investment returns – marginal cost of carbon effect, returns on public investment, etc
  - develop legal innovation to support strengthening of land tenure systems.



## 2 where is investment required?

The process of deforestation can be described using a stylised ‘forest transition curve’ (Figure 1). This illustrates how human activity causes the forest frontier to move over time, consuming natural forest and leaving relatively stable forest–agricultural mosaics. Deforestation is concentrated at the frontier, and remaining forest in mosaic land tends to be the most degraded.

**Figure 1: The forest transition curve**

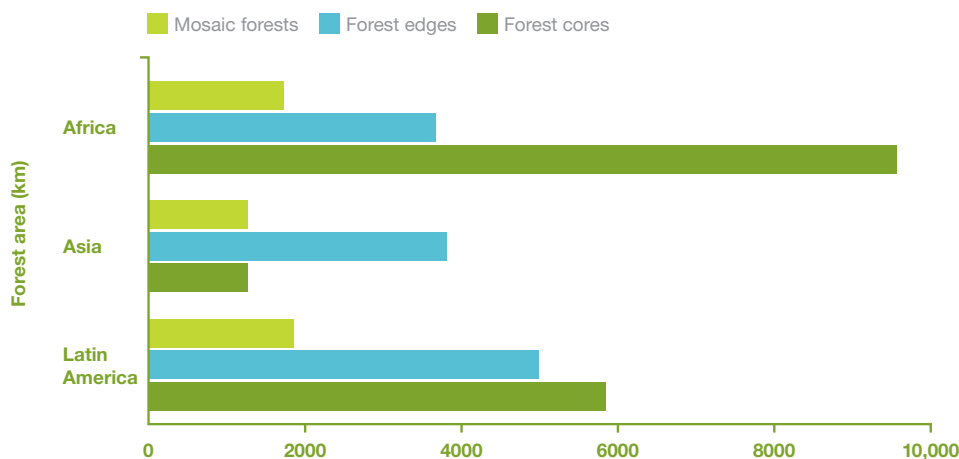


Source: Centre for International Forestry Research, November 2008

It is clear that different strategies would be required in each type of forest land in order to stabilise forest loss. Investment in REDD+ should aim to prevent the migration of the frontier further into natural forest, and restore degraded forest in mosaics. Chomitz et al.<sup>42</sup> mapped forest type by region, and concluded that forest frontiers (where deforestation is occurring) are fairly evenly distributed across Africa, Asia and Latin America (Figure 2). Degradation is concentrated in savannah biomes in Africa and Latin America, and in forests in Asia.

According to Chomitz et al.,<sup>43</sup> forest frontier land features rapid agricultural expansion and high rates of deforestation. Land prices are rising, and there are frequently disputes over tenure. Mosaic land hosts higher population densities, and land values are high. Natural forest, beyond the agricultural frontier, has relatively low population densities but high proportions of indigenous and poor people.

**Figure 2: Indications of forest type by region**



Source: Center for International Forestry Research, November 2008

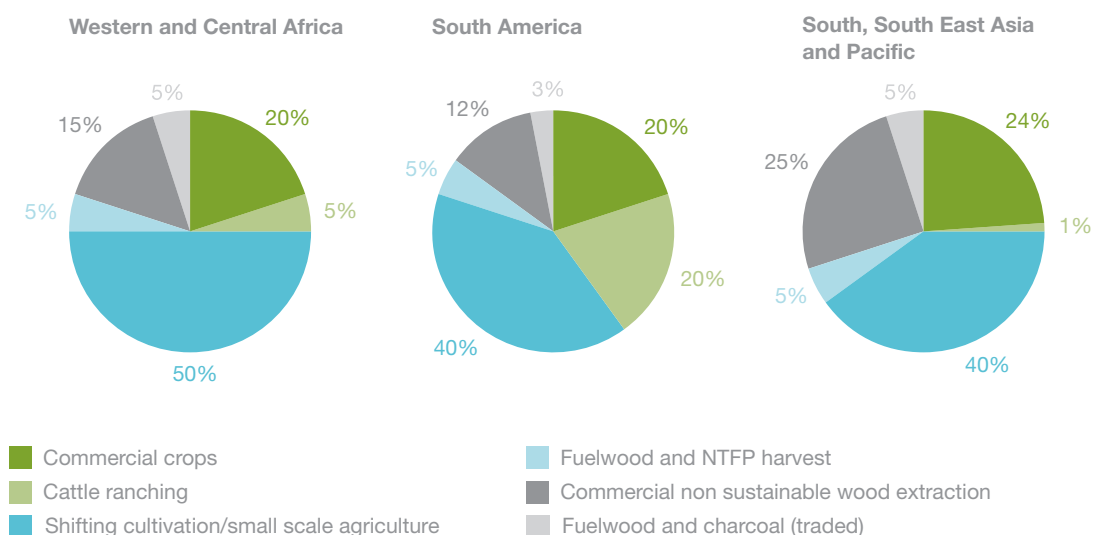


In order to achieve reductions in the rate of deforestation, Chomitz et al propose different strategies for each forest type. At the forest frontier, policing and law enforcement is required in order to prevent land grabs resulting in clearance for agriculture or logging. Control of road construction is necessary to deter migration. In mosaics, forestry should be encouraged and markets developed for environmental services. Property rights should be enforced. Beyond the forest frontier, indigenous rights should be protected, and infrastructure expansion controlled.

The analysis by Chomitz et al illustrates the dynamic nature of human agency in causing deforestation, and shows the importance of developing integrated REDD+ strategies that address the conservation of natural forest, stabilisation of the frontier, and support sustainable forestry within the mosaic areas that host relatively large populations.

**Figure 3: Drivers of deforestation (NTFP, non-timber forest products)**

**Drivers of deforestation and forest degradation by region**



Source: Prince's Rainforest Project

Blaser and Robledo<sup>44</sup> produced estimates of the different causes of deforestation by region. It is striking that although large-scale commercial agriculture and logging contribute significantly to loss of forests, the majority of all deforestation globally is caused by small or medium-scale activities such as shifting cultivation or fuel collection (Figure 3). It is therefore essential to direct REDD+ strategies towards creating alternative livelihoods for the people engaged in this.

REDD+ should aim to develop a stable socio-economic environment which halts migration to the forest frontier, prevents rapid exploitation of forest assets (such as land clearance or logging), and generates sustainable ways for people to earn their livelihoods. This may require enforcement of property rights, protection of indigenous rights, restrictions on the access to market for unsustainably produced agricultural and forestry products, controlled expansion of infrastructure, and investment in sustainable forestry and industrial development.

<sup>42</sup> Chomitz, K.M., Buys, P., de Luca, G., Thomas, T.S. and Wertz-Kanounnikoff, S. *At loggerheads? Agricultural expansion, poverty reduction, and environment in the tropical forests. Policy Research Report*, World Bank 2006

<sup>43</sup> *ibid*

<sup>44</sup> Blaser J. and C. Robledo (2007). *Initial Analysis on the Mitigation Potential in the Forestry Sector. Report prepared for the Secretariat of the UNFCCC*. August 2007. [http://unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/application/pdf/blaser.pdf](http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/blaser.pdf).



### 3 achieving REDD+

To achieve REDD+, developing forest nations require substantial additional investment in forest conservation, sustainable forestry management and forest planted forests. Further investment is required outside the forest sector in order to create long-term job security and sustainable livelihoods away from the forest frontier. An integrated strategy is therefore required in order to steer economic development away from that which results in deforestation and degradation of forest land.

The size of investment required is a subject of debate, but is likely to be sufficiently large to require private funding alongside public finance. The Eliasch Review estimates that an annual investment of \$17–33 billion is required to achieve a target of halving emissions from the global forestry sector by 2020 and making the sector carbon-neutral by 2030. The Review suggests that the reduction in emissions would come from a 75% reduction in deforestation, with the remainder deriving from afforestation and reforestation projects.

Currently, the majority of investment in the forestry sector in developing nations is from domestic investors who understand local markets and operating conditions. This source of capital is in short supply and typically demands high returns. Indeed, many existing forestry operations are undercapitalised, which often contributes to unsustainable practices.

It is clear that in many countries, international investment is required as local capital markets are too limited in size to support the required investment in REDD+. If private capital can be catalysed into REDD+, then tangible reductions of emissions could be achieved sooner and at a greater rate than by public investment alone.

Although many of the underlying projects that can deliver REDD+ are fairly straightforward to manage, the current environment for investing in many developing economies is not. Whilst private capital is fully able to assess and take on operational risks, it is generally unwilling to accept risks that fall outside its influence, such as those broadly described as political risk.

For private capital to commit substantial investment into REDD+ activities, then, barriers that deter investment must be lowered. This could be achieved by investment of public monies to deliver a combination of measures including:

- additional capitalisation of development banks to deliver on a mandate to provide REDD+ finance and risk mitigation tools to private sector;
- development of capacity in host countries for inward investment, including: improved governance; strengthening of land laws; development of REDD+ expertise and financing capacity in local banking system; identification of investment opportunities; business education; and technology transfer;
- support for the development of markets that give clear price signals for REDD+;
- investment in long-term research programmes necessary to determine the best strategies in each region for achieving REDD+.

The success of stimulating private sector investment in REDD+ would be measured in terms of forest cover, net carbon or eco-system service effect, and social and economic development developing forest nations. Additional indicators of a successful strategy might include:

- allocation of personnel in financial institutions to REDD+, including analysts, fund managers, structured finance specialists and bankers;
- creation of dedicated funds for investment in REDD+;
- emergence of large national or regional project managers or corporations specialising in forestry or other aspects of REDD+;
- diversification into REDD+ investment by international corporations.



A successful strategy of leveraging public investment to catalyse additional private investment in REDD+ will yield benefits in terms of job creation and investment opportunities in the UK and elsewhere, thereby providing additional returns on public investment.

## 4 REDD, REDD+ and sustainable forestry management

REDD is focused on cutting greenhouse gases emissions released through the destruction of natural forests. A broader definition, REDD+, additionally includes enhancement of forest carbon stocks. REDD+ could be achieved through a range of strategies, including:

- net reduction in deforestation
- net reduction of degradation of forest land
- increase in afforestation
- increase in reforestation
- conservation of existing forest
- enhancement of carbon sinks.

Sustainable forestry management (SFM) can be broadly defined as ‘the carbon-neutral or carbon-positive management of forestry assets, including natural forests and planted forests’. Investment in SFM should therefore deliver REDD+, although it should be acknowledged that the long-term effects of various SFM techniques have not been well studied, and multi-year programmes are required to investigate the effects of SFM strategies such as reduced-impact logging.

Many forests are logged using unsustainable methods, including clear-felling or over-harvesting. There are examples of companies which claim to be sustainable but which operate without verifiable plans for tree provenance, or use inefficient techniques that produce huge amounts of wastage.

What SFM means will depend on the geography of each region, as soil types, weather patterns, forest types, etc, vary. Regional scientific studies, such as that carried out at Iwokrama in Guyana, are required to measure the environmental impact of SFM and establish appropriate management techniques. SFM should be certified and monitored to make sure that operators manage forests within agreed guidelines. Developing forest nations should not see SFM as applicable to all forest land, as opening up areas of untouched forest can lead to human migration and unintended degradation.

REDD+ may also be achieved through investment outside the forestry sector. In many parts of the world, forests are being lost as a result of low-value economic activity (eg subsistence farming, fuel collection) or inefficient industry (logging, sawmilling, cattle ranching, etc). Investment in job creation, social and economic infrastructure, and training could relieve pressures on forest resources, while enhancing livelihoods.

## 5 private capital

Investors in the private sector seek attractive, risk-adjusted returns on capital. In making investment decisions, the cost of capital investment is weighed against underlying revenue streams taking account of risk factors, which include the timing of cash flows, operational uncertainty and political conditions. Simple ways of analysing a project include calculating internal rates of return (IRRs) or net present value (NPV).



The size of the private capital universe is huge, encompassing global public and private equity, and debt markets. Private investment is quite capable of delivering sizeable investment into REDD+ projects given appropriate finance mechanisms and risk management tools. In the past, private capital has funded new industry sectors such as mobile communications or the internet.

The private sector includes individuals, corporations, insurance companies, banks, mutual funds and sovereign wealth funds, but excludes national government or supranational entities. Private investment may be from domestic sources (ie in-country) or international sources (ie cross-border).

Private capital has proven to be adaptable, and has supported innovative enterprises from a micro- to a macro-scale. Investments are made with a profit motive, and therefore tend to be self-sustaining, therefore reducing the requirement for public funding in the future. If private enterprise is successful, the public purse could be a net beneficiary through the receipt of future tax income.

## 5.1 Forestry investment

Interest in forestry investment has increased over the past 20 years or so, with investors drawn by relatively stable returns which exhibit low correlation with other asset classes such as equity or bonds. The US market is the most mature, with Europe and Asian markets more recently attracting investor interest.

Sustainable tropical forestry is beginning to attract interest from international investors, as returns can be much higher than from forestry in the US or Europe. Such returns reflect the higher biological growth rates of trees, lower land and labour costs, and in some instances, higher local market prices for forest products.

**Table 1: Availability of equity and debt for developing economy forestry enterprises, by investor type: pool of investment capital increases with size and reduced perception of political risks**

Enterprise size (by capitalisation)	High political risk			Low political risk		
	Small (< \$10 million)	Medium (\$10–100 million)	Large (> \$100 million)	Small (< \$10 million)	Medium (\$10–100 million)	Large (> \$100 million)
<b>Equity:</b>						
Local investors	Yes	Yes	Yes	Yes	Yes	Yes
HNWIs (international)	Possible	Possible	Yes	Yes	Yes	Yes
Social impact investors	Possible	Yes	Possible	Possible	Yes	Possible
Venture capital funds	No	Possible	Possible	Possible	Yes	Yes
MDB co-investment	No	Possible	Yes	No	Possible	Yes
Institutional investors	No	No	Possible	No	Possible	Yes
Industrial partnership	No	Possible	Possible	No	Possible	Yes
Public flotation	No	No	Possible	No	Possible	Yes
<b>Debt:</b>						
HNWIs (international)	No	No	Possible	No	Possible	Yes
Local banks	Possible	Yes	Yes	Possible	Yes	Yes
International banks	No	No	Possible	No	Possible	Yes
MDBs or Ex-Im banks	No	Possible	Yes	No	Possible	Yes
Institutional investors	No	No	Possible	No	Possible	Yes
Debt capital markets	No	No	No	No	No	Possible
Structured finance	No	No	Possible	No	Possible	Yes

HNWIs, high net worth individuals; MDBs, multilateral development banks; Ex-Im, export-import  
Source: Eco System Services Limited



However, the pool of investment capital allocated to tropical forestry in developing countries is very limited because there are few enterprises that meet the requirements of international investors. Many forestry enterprises in developing countries are under-developed in terms of operational capacity, technical know-how, corporate governance and financial reporting. Additionally, investors are often deterred by perceived political, governance and land tenure risks (Table 1).

### 5.1.1: Global forestry investment

The vast majority of the world's forests are publicly owned by governments or government agencies. According to The Food and Agriculture Organization of the United Nations (FAO),<sup>45</sup> less than 20% of the world's forest land is in private hands. The exception is the US, where more than 58% of forest land is in private ownership.

The University of Georgia, Center for Forest Business,<sup>46</sup> researched the size of global forest land investments. It estimated \$160 billion in private ownership, \$14 billion in institutional ownership and \$52 billion owned by forest product companies.

The World Bank<sup>47</sup> estimates private sector annual investment of \$15 billion in the forestry sector of developing countries and countries in transition. This includes investment in post-harvest processing facilities, such as pulp mills.

According to the FAO,<sup>48</sup> planted forests in developing countries are increasing at a rate of approximately 1.8 million ha a year, with more than 80% planted for industrial use. The World Bank estimates that this represents an annual investment of \$3–4 billion.

### 5.1.2: US forestry investment

The US represents the most sophisticated market for investment by private capital in forestry. Exposure to the sector can be gained by direct investment, via specialised investment vehicles such as timber investment management organisations (TIMOs) or real estate investment trusts (REITs), through private equity, securitised bond structures or listed public companies.

There has been marked shift in US forest ownership over the past 15 years, with integrated forestry companies reducing holdings from 19.5 million ha to around 4 million ha. The majority of these holdings were acquired by TIMOs or REITs.

TIMOs and REITs offer individual or institutional investors the ability to participate in managed portfolios of forest land. They have proven popular because of their low volatility returns and low correlation with equity and bonds. According to Global Forest Partners LP,<sup>49</sup> more than \$30 billion is invested in TIMOs. A number of high profile investors, including Harvard and Yale endowment funds, CalPERS, Eastman Kodak and GMO have significant forest holdings.

Returns from US forestry investment derive from a combination of timber sales, biological growth and land value. Although recent economic events have negatively impacted performance, TIMO income returns in 2007 ranged between 6 and 8% (NCREIF).

<sup>45</sup> FAO. 2006. *Global Forest Resources Assessment 2005*. Rome: FAO.

<sup>46</sup> University of Georgia Center for Forest Business *The Changing Landscape of Timberland Ownership in the United States – The Emergence of TIMOs* Mike Clutter [www.nga.org/Files/pdf/0407forestryTIMO.PDF](http://www.nga.org/Files/pdf/0407forestryTIMO.PDF)

<sup>47</sup> World Bank 2008 *Forest Source Book: Practical Guide for Sustaining Forests in Development Cooperation*

<sup>48</sup> FAO 2005 *ibid*

<sup>49</sup> Global Forest Partners LP – internal research, presented at International Forest Investment Conference, London 2008



### 5.1.3: Non-US forestry investment

Outside of the US, institutional investor appetite for forestry has been growing, albeit limited in the main to major economies. A number of European pension funds have made allocations to forestry, and dedicated forestry funds have emerged in Europe, New Zealand and Australia.

Several large timber companies have made direct investments in foreign markets. For example, Weyerhaeuser (US), Sinar Mas (Indonesia), Oji Paper (Japan) and Stora Enso (Finland) have investments in China; International Paper and Stora Enso invest in Russia; Precious Woods (Switzerland), Weyerhaeuser (US) and Willmotts (Australia) invest in Latin America.

Additionally, there are a number of domestic listed companies, including, for example, Sappi and Mondi (South Africa), Arauco (Chile) and VCP (Brazil).

Global Forest Partners LP reports that around 20% of US TIMO investment is made in foreign markets, extending to Brazil, Uruguay, Chile, Australia and New Zealand.

### 5.1.4: Investing in forestry in developing economies

In contrast to the US and other OECD countries, investment in developing or emerging economies carries many additional risk factors, including political, land tenure, currency convertibility, appropriation of assets and operational difficulties. As a result, many institutional investors restrict their exposures to non-OECD countries and demand much higher investment returns on investments made there.

Forestry investments compound these investment risks, as up-front capital expenditure can be high whereas returns may be delayed for years, as is the case for planted forests.

Apart from investment in the small number of domestic listed forestry companies, the main route for investment in forestry in developing economies is direct into private companies. In many cases these companies have limited operational capacity and poor management reporting systems, which deter investors.

These factors contribute to a high degree of illiquidity, which means that investment flows are limited and consequently forestry companies are frequently short of capital. With a lack of capital, and uncertain commercial and political environments, forestry operators often resort to generating short-term profits through unsustainable and aggressive forestry management which results in deforestation.

Investors are conscious of the costs of transacting and monitoring investments, and are less likely to commit if too much management time is required, or if experienced analysts are unavailable. Investments opportunities must be large enough to warrant prioritisation. This is exemplified in pension funds, where the largest are typically unwilling to commit to a new investment sector unless they can deploy at least 1% of funds under management.

Forestry in developing countries is difficult for international investors to access or monitor, resulting in underinvestment in sustainable forestry management. Investment markets lack the institutional framework that exists in more developed sectors, such as the US. This includes a choice of investment vehicles, secondary market liquidity and research services.



### 5.1.5: Opportunities in sustainable tropical forestry

Leaving aside the economic, political and operational issues described above, sustainable tropical forestry has the potential to offer interesting opportunities to international investors. In many parts of the tropics, forestry can generate attractive long-term returns through a combination of rapid biological growth, low land and labour costs and firm demand for forest products from expanding local markets.

The economics of a sustainable forestry operation depend heavily on logistic costs (especially transport to market) and prices for forest products. Although sales to international markets underpin high-value hardwood operations, lower-value soft woods and fast-growing species depend much more on demand in local markets. In some instances, prices for timber products in emerging economies can exceed prices in developed markets, especially if import costs are high.

## 5.2 Planted forests

Growth rates (so-called mean annual increments) for plantation timber in the tropics can exceed those in the northern hemisphere by a factor of three or four. As examples, pine can reach maturity in Uganda in 16–18 years, eucalyptus in Brazil in 7–12 years, alder in Yunnan Province, China, in 16–18 years and teak in Brazil in 25–30 years. Pine in the UK can take 80 years or more to reach comparable sizes.

Published returns from planted forestry are difficult to find, with most plantations owned by industrial conglomerates or in private hands. Estimating investment returns are further complicated given the long time lag between investment and sales of timber from mature trees. Furthermore, new ventures have much higher risks associated with them than mature enterprises, and considerable investment is often required to maximise yields.

IRRs depend greatly on land costs and planting costs, as these are the near-term expenditure items. Revenues have to be estimated as they depend on uncertain future prices for timber and costs of extraction and transport to market. However, taking published growth rates, estimated planting costs and today's market prices into account, yields from established tropical planted forests range from 10 to 20% or more.

Investors may be prepared to accept lower returns where investments have some liquidity. In the UK, Quadris Environmental Investments Ltd offers tradable shares in Forest Stewardship Council (FSC)-certified sustainable teak plantation investments managed by Floresteca in Brazil. Advertised yields for investors are 9.9%.

### 5.2.1: Example: Chile and Uruguay

Chile and Uruguay provide examples of where government policy can successfully stimulate private investment in planted forests. Both countries registered a net increase in forest cover in the period 2000–2005, as a result of large-scale planting of trees.

In Chile's case, a national development strategy identified forestry as a priority industrial sector (alongside others such as the wine industry), providing financial incentives to private investors. To date, more than 2 million ha of forest plantations have been established, and forestry products account for 20% of Chile's exports and 4% of its GDP.

Uruguay established similar priorities in 1987 and grants tax benefits to investors in planted forests in Forest Priority Areas. Around 800,000 ha have been planted to date, at a rate of 50,000 ha per year.



### 5.2.2: Example: Uganda

In Uganda, heavy deforestation and underinvestment in planted forests has resulted in timber shortages for its rapidly growing economy. Uganda is a net importer of timber, and high local prices reflect transportation costs of imports from as far as South Africa. Recent auction prices for standing timber have exceeded US prices by more than double.

Uganda suffers additional pressures on its remaining forest resources. Ninety-two per cent of Ugandans use fuel wood for cooking and heating. This consumes 16 million tonnes of timber a year and a further 4 million tonnes of charcoal. Forest cover in Uganda has fallen from 45% in 1890 to around 20% today (FAO), largely as a result of military conflict, small-scale agriculture and fuel collection.

Against this background, Uganda has started to attract inward investment in forest planted forests. New Forests Company (Uganda) Ltd (NFC) was established in 2004, and has become the largest tree planter in Uganda, with more than 6,000 ha of pine and eucalyptus planted to date. It received initial investment from individuals, and subsequently closed an equity investment of \$8.5 million from HSBC and a loan facility from the European Investment Bank of about \$10 million. NFC expects to produce timber for transmission poles and construction. Additionally, it is trialling high-density planting of eucalyptus for use as energy feedstock.

## 5.3 Processing of timber

Extra value can be created by investment in secondary processing of timber. Such activities include sawmilling, transformation to finished products such as flooring, or treatment of timber for transmission poles.

The uplift in value from secondary processing can be illustrated by an example in Peru where felled and delivered hardwood logs sell at about \$150 per cubic metre, rough-sawn timber at about \$275 per cubic metre equivalent (50% recovery rate and \$550 per cubic metre rough-sawn) and finished products at about \$650 per cubic metre equivalent. Of course there are costs in each transformation stage, and considerable capital investment is required, but such a venture can deliver project IRRs in excess of 30%.

Outside the sawn timber sector there is growing interest in forestry as source of renewable energy. Many developing economies are chronically short of energy, and high import costs mean that diesel or electricity is frequently more expensive than in Europe or the US. Gathering of wood for fuel is one of the main contribution factors to loss of forest cover, especially in Africa. Plantation timber and waste from sawmills can be used as fuel for electricity production through co-generation, or potentially as a feedstock for cellulosic bio-fuels.

Investment in tropical timber businesses can produce excellent returns for investors whilst stimulating local economies through job creation and skills transfer. In addition, sustainable forestry enterprises can counter some of the causes of deforestation and degradation such as fuel collection or over-logging.

However, before committing capital to planted forests, modern sawmills or energy projects, investors must be satisfied that they can secure long-term access to land, feedstock and markets for products. Investors will not commit where uncertainty exists with respect to these factors.



### 5.3.1: Example: Peru

The Peruvian government has made serious efforts to stimulate its sustainable forestry sector whilst protecting its natural resources and wildlife. Almost 68% of Peru's territory (78 million ha) is covered with forests, and a further 8 million ha has been deforested.

The timber industry in Peru is under-developed in comparison with its neighbour, Brazil. Whilst Brazil's timber product exports a total of \$3 billion per annum, Peru exports only \$160 million each year (ITTO and the Brazilian Association for Mechanically Processed Timber). Peru's government agency for investment promotion, Proinversion, estimates that the country has the potential to generate annual timber product exports of \$3 billion.

Forestry Law 27308 was passed by the Peruvian government in July 2002. This legislation regulates extraction volumes to ensure the sustainability of the Amazon rainforest. In 2003 the government held a public auction of around 8 million ha of concessions, with a 40-year life. Successful bids were based on technical forest management competence as well as economic factors.

Many of the purchasers of concessions were unable to develop forestry activities or even pay annual fees as a result of undercapitalisation. This lack of capital has undermined Peru's attempts to develop a sustainable forestry industry and potentially leaves concessions open to illegal activities.

Peru's business-friendly approach has encouraged foreign investment, and recently foreign investors have purchased concessions and invested in plant and machinery.

The Peruvian government is continuing its efforts to stimulate investment in its forestry sector. It is currently preparing a new tender process for the allocation of up to 14 million ha of new concessions for sustainable management in 2009 or 2010. In addition, it has passed favourable tax laws for investment in the Amazon region.

## 6 markets for forest products

According to the World Business Council for Sustainable Development (2006) the size of the global market for timber products totals approximately \$750 billion. The World Bank<sup>50</sup> estimates annual international trade of \$270 billion, 20% of which is with developing countries.

The FAO estimates that demand for timber world-wide will increase by 60% in the next 25 years. Consumption will increase fastest in developing economies – China has increased its consumption by a factor of 16 in 12 years (Money Week, Dec 2008).

It is worth emphasising that the main markets for forest products are domestic – even in developing countries. More than 86% of all timber extracted from the Brazilian Amazon is used in Brazil, and less than 20% of the 25 million cubic metres extracted from west and central Africa is exported<sup>51</sup> (FAO).

The fact that the majority of forest products are consumed in-country reflects the logistical and transport costs, and also the burgeoning demand from developing economic activities. International trade comprises mainly higher-value forest products, such as hardwoods and processed timber.

<sup>50</sup> World Bank 2008 *ibid*

<sup>51</sup> FAO 2005



## 6.1 Domestic markets

An understanding of domestic demand and an assessment of logistical costs are key factors in the decision making of investors in sustainable forestry and REDD+. Local markets are often difficult for international investors to gauge, and maybe it is unsurprising that the International Tropical Timber Organization<sup>52</sup> found that the bulk of investment in forestry across all sectors was made by local investors.

Domestic operators have expert local market knowledge, whereas international investors bring capital and operational expertise. Successful implementation of REDD+ strategies will likely require partnership.

Local markets, especially in developing economies, are more likely to suffer price distortions as a result of fluctuations in local economic circumstances. Investors may require comfort in terms of off-take agreements (ie guaranteed purchases) or other price hedges to incentivise commitment to long-term projects. Such arrangements might be analogous to energy off-takes given to investors in power infrastructure investments.

Given the importance of domestic markets, it is important to ensure that consumers in these markets are not forgotten if sustainability awareness campaigns are initiated. Furthermore, governments should be incentivised to provide price signals to local consumers for forestry products from sustainable sources.

# 7 innovation and research in forestry technology

Historically, forestry has not been seen as a high-technology business, and research has tended to have been focused on seed and cultivation improvements and forest management techniques. In recent years this has changed, and the FAO<sup>53</sup> identifies four broad areas where research and development is now focused:

- reducing costs and increasing productivity
- developing new products and services
- conserving resources and reducing adverse environmental impacts
- improving energy efficiency.

Each of these areas is important to investors, as innovation can improve returns, whilst mitigating operational risks.

Research must also be undertaken to understand the net carbon effect of various forestry strategies over long periods of time. For example, although sustainable forestry management (SFM) through reduced impact logging is generally considered as effective in generating an economic return from forests whilst conserving biodiversity and net stored carbon, its long-term impact on forests in different geographies is not known. Multi-year research programmes, such as that established at Iwokrama in Guyana, are needed to determine how SFM impacts forests in the long run. A clear understanding of the outcomes of various REDD+ strategies would be necessary in order to guide future investment.

<sup>52</sup> ITTO. 2006. *Status of tropical forest management 2005*. ITTO Technical Series No. 24, Yokohama, Japan

<sup>53</sup> FAO State of the World's Forests 2009



Improved forestry and industrial technology can enhance investment returns and help mitigate risks within business models. As an example, sawmill recovery rates (and therefore profitability) can be enhanced through laser and x-ray scanning and optimised log cutting. Such innovations should also reduce pressures on forest assets, thereby mitigating rates of deforestation.

Technologies such as satellite mapping and tracking from companies such as UK-based Helveta, and Field Map, can guarantee the chain of custody from forest to consumer, thus reinforcing sustainable forest management practices and governance of illegal logging.

Research in so-called 'energy forestry' could be an important contribution to addressing energy shortages in developing countries, whilst relieving deforestation pressures from fuel collection. This industry is at an early stage, and significant resource is required to develop improved plantations, harvesting techniques and energy transformation, such as production techniques for cellulosic bio-fuels.

## 8 private investment in forest conservation

The role of forest conservation in a future REDD mechanism has yet to be agreed and will feature in negotiations at the Conference of Parties to the United Nations Framework Convention on Climate Change in December 2009. There is a strong lobby that advocates a system of payments for eco-system services (PES) in recognition of the utility value of standing forests, which includes carbon storage and sequestration. Proponents argue that such payments would rebalance the economics of frontier forestry, where currently the majority of standing forests around the world have no recognised value, in contrast to deforested land which generates economic value.

Without a formal mechanism to attribute value to standing forests, there is limited scope for countering deforestation through market mechanisms. Furthermore, forest conservation represents a net cost to developing forest nations, with forest stewardship, monitoring, law enforcement and so forth having to be paid for out of national budgets.

There have been a small number of privately funded initiatives to date which pay for the conservation of forests and development of REDD programmes. The majority of these have been funded in the voluntary sector through NGOs or corporate responsibility programmes. A handful of transactions have taken place where investors have acquired 'when and if' or future rights to PES (including REDD credits) in return for an up-front payment. Such private investment is likely to be limited in size as voluntary markets are small and as only a small number of investors is willing to pay up-front for rights to PES or REDD credits, where markets do not currently exist.

Private investment in REDD+ could take off if agreement is reached for the inclusion of PES or REDD credits within the climate change framework. Such investment might include public-private partnership in conservation programmes or securitisation of future flows of credits. The value of such investment will depend on many factors, including the amount of accreditation, political stability, operational capacity and agreement on property rights, including land and ownership of credits. Clearly, some countries will command higher premiums to attract private investment compared with others, reflecting higher perceived risks, and public funding may be necessary.

The development of private investment in forest conservation will require substantial work in developing appropriate legal frameworks and documentation. The risks involved in acquiring rights to PES or REDD credits will need to be understood, and an analytic framework developed before it could become a mainstream asset class.



### 8.1 Example: Marriott International's voluntary support for REDD in Amazonas, Brazil

The Marriott International hotel group pledged \$2 million to a fund administered by the Amazonas Sustainable Foundation which, with the State of Amazonas, monitors and enforces the protection of 590,000 ha of endangered rainforest in the Juma Sustainable Development Reserve. The REDD project has been validated to a gold level under the Climate, Community and Biodiversity (CCB) standards.

The Juma project uses a unique system of rewarding the local population for its forest stewardship and protection of eco-system services by making payments through a 'Bolsa Floresta' stored value card which is distributed to each of the local families. The cards are credited with 50 reais (about \$25) per month.

The project baseline projects that it will avoid the deforestation of 330,000 ha of natural rainforest until 2050, improving the quality of life for the local population and protecting biodiversity.

### 8.2 Example: Canopy Capital's acquisition of eco-system services marketing rights from Iwokrama

In March 2008 a UK company, Canopy Capital Limited, bought a five-year licence (in effect, an option) to market eco-system services for the Iwokrama International Centre in Guyana. The eco-system services include rainfall production, water storage, weather moderation, and biodiversity, as well as carbon storage and sequestration.

The terms of the agreement provide for a revenue sharing, with up to 90% of investment upside going to Iwokrama. Proceeds of any sales of eco-system services will be invested in supporting Iwokrama's 370,000 ha reserve, and will provide for enhancing the livelihoods of local communities.<sup>54</sup>

The Iwokrama deal has been heralded as an example of how future deals might be structured, and Canopy Capital is now looking at ways to package eco-system services deriving from Iwokrama within bond or other tradable structures.

<sup>54</sup> Source: Canopy Capital



## 9 investment outside the forest sector to achieve REDD+

Deforestation is widely recognised to result from economic drivers, where individuals and organisations benefit from unsustainable activities such as over-logging or clearing of land for agriculture or land claims. This may be prevented through strict regulation and enforcement, but such strategies are likely to give rise to long-term problems unless alternative livelihoods can be generated. Investment in creating long-term sustainable employment and opportunities for wealth creation will be essential if deforestation and forest degradation is to be curtailed.

Achieving REDD+ will require investment outside of the forest sector in order to shift the path of economic development away from the destruction of forests. There are many ways in which this can be done, and it is likely that there will be opportunities for private sector investment. What these are and how they might be implemented will depend on analysis of local markets, infrastructure and human resources, etc.

Examples of investment that reduce pressures to deforest might include:

- intensive cattle ranching techniques, using less land
- sales of clean-burning stoves, which are more fuel efficient
- improved crop varieties, such as coffee, using less land
- clean energy, enabling industry and preventing wood cutting for fuel
- jobs creation through industry
- education and training, to improve the skill base.

### 9.1 Example: The Natex factory

The Natex factory at Xapuri, Acre, Brazil, provides an example where REDD+ can be promoted through investment in industry. Natex produces around 100 million condoms a year, manufactured using locally sourced rubber latex. The factory employs 150 people directly, and a further 700 families make a living through collection of latex from natural forests in the Chico Mendes Extractive Reserve.

The project helps protect 1 million ha of forest through provision of sustainable livelihoods. The factory's output represents around 10% of Brazil's condom market, with the remainder imported from China using rubber grown in Malaysia.

The total investment in the factory was approximately \$30 million. However, production costs are high relative to Chinese-sourced condoms, with finished products costing around three times those of imports. Without subsidies the factory would not be viable.



## 10 Clinton Foundation investor survey

The Clinton Foundation (2008) surveyed a group of 27 institutional investors on their appetite for a theoretical 4,000 ha teak afforestation project (ie planted forests on land that has no recent history as forest). The project was modelled to produce a 14% IRR, with the bulk of income deriving after 25 years.

The majority of investors expressed an interest in investing in the project, although few had previous experience in this sector. Required hurdle investment returns varied considerably, with experienced investors more comfortable with lower returns. Expected risk premiums over comparable OECD projects were wide ranging, with a median of 3.5% in Brazil to 7.5% in Africa. Given forestry yields in North America of between 6% and 8%, these yield expectations do not seem especially aggressive.

Political risk and land tenure were perceived as the biggest risks, and delayed cash flow was unattractive to most investors.

When asked what risk mitigation role the public sector could take, investors asked for the following:

- guaranteed demand or price for sustainable timber
- guaranteed demand or price for carbon credits
- political risk insurance
- endorsement or involvement by a major international NGO.

Furthermore, investors suggested the following forms of subsidised capital participation from the public sector:

- subsidized debt
- grant
- credit enhancement
- provision of long-term debt.

In terms of allaying political risk, the following strategies were proposed:

- aggregation of projects across several regions
- purchase of political risk insurance
- co-investment alongside an organisation with a long-term financing relationship with the host government (eg the International Finance Corporation, IFC).



# 11 financial tools that could stimulate private sector REDD+ investment

The investment environment for forestry in developing economies is very immature, with limited opportunities for international investors. Banking and financial services are not geared to facilitate large-scale investment or mitigate risks that are specific to long-term forestry investments. This has contributed to underinvestment in sustainable forestry enterprises as a whole, has constrained cross-border investments, and has hindered development of funds or other pooled investments.

REDD+ forestry projects typically have a risk profile which is analogous to that of long-term infrastructure projects such as roads or electricity generation – high up-front expenditure and delayed revenue streams (especially from plantation forestry) with uncertain markets (for timber in domestic markets, for example). This risk profile, when coupled with perceived political uncertainty and uncertain land tenure, deters international investors or forces non-sustainable practices. Furthermore, the private finance sector does not have the capacity or appetite to take on such risks without subsidies.

The public finance sector can help stimulate substantial private sector investment in REDD+ through provision of counterparts to the risks described above. Such capacity could be provided by multilateral development banks, such as the World Bank, which are experienced in providing concessionary finance and advice whilst working with governments, NGOs and other institutions to improve governance, legal frameworks etc. Specific measures that would help stimulate private investment in REDD+ include:

- provision of insurance or guarantees to mitigate political or land tenure risks
- provision of long-term debt or credit enhancement
- maturity transformation to enhance near-term cash flows from planted forests or other long-term projects
- off-take guarantees for forestry products.

Alongside the provision of financial services, development banks could provide advisory services to host governments in legal reform, governance and other measures to enhance inward investment in REDD+.

It should be expected that, in time, given access to appropriate finance and risk mitigation tools, the private financial sector will develop innovative products to facilitate investment flows. The size of the requirement for investment in REDD+ could present a significant opportunity for the financial industry, which has the capability to innovate and stimulate investor demand.

The US provides examples of the types of institutions and products that support forestry asset class such as REITs, TIMOs, private equity or securitised bonds. Such diversity has attracted interest to a wide range of investors, including pension funds, mutual funds, endowment funds, family offices and individuals.

## 11.1 MIGA

The World Bank's Multilateral Investment Guarantee Agency (MIGA) was set up in order to promote investment in developing countries. MIGA provides risk insurance (or 'investment guarantees') to investors and lenders including war and civil unrest, expropriation, breach of government contract and currency inconvertibility. As part of the World Bank, MIGA is able to manage its risks through influence with host nation governments.



Since 1988, MIGA has provided \$17.4 billion of investment guarantees to more than 900 projects in 96 countries. In 2008, MIGA had outstanding commitments of about \$800 million in agrobusiness and forestry projects. More than 80% of these were to Latin America and the Caribbean (43%) and Sub-Saharan Africa (36%).

MIGA's products cover investments from three to 15 years, with some infrastructure projects up to 20 years. The organisation has a dedicated Small Investment Programme Guarantee, which provides a competitive service for projects under \$10 million in size.

MIGA has an advantage over commercial insurers in that it can leverage the World Bank's relationships with some of the poorest nations to provide competitively priced services where other insurers find risks too great. Having said that, MIGA encounters competition from other insurers in more developed countries, where commercial competitors can often match MIGA's pricing whilst providing a faster and less bureaucratic service.

MIGA provides an excellent foundation on which to build additional capacity to provide some of the financial tools to stimulate private capital investment in REDD+. Its risk mitigation products could be used to enhance the attractiveness of investments for institutional investors, through loan guarantees, principal protection or other strategies.

## 11.2 Investment by IFC

The International Finance Corporation (IFC) is part of the World Bank group, and is responsible for private sector investment. It provides a wide range of financial services, including loans, equity and structured finance. IFC does not fund small or medium-sized enterprises, but will finance intermediaries that provide specialised services to this sector.

Between 2003 and 2006, IFC invested approximately \$1 billion in 25 private sector projects with a total investment size of \$4 billion. The majority of these projects were in Eastern Europe and central Asia, and included investment in packaging and in pulp mills. About half of IFC's projects had an integrated forestry component. Only one project was in Africa.

## 11.3 Co-investment alongside development banks

The Clinton Foundation investor survey found that investors were interested in participating in pooled investments with development banks. This is perhaps unsurprising as the investment community seems confident that organisations such as the World Bank or IFC can exert significant influence over governments given their role in lending or aid programmes.

Pooled investment offers advantages to investors in that significantly less work is required to oversee the portfolio. This is especially important in the types of investments that might be made for REDD+ where analytical skills are in short supply and where investments will be made in countries which are unfamiliar to the majority.

Co-investment may also attract larger institutional investors, such as pension funds, which typically restrict investment strategies to opportunities where a significant portion of funds under management can be deployed (often at least 1% of total portfolio).



## 12 non-financial measures to stimulate private sector REDD+ investment

In addition to the provision of specialised financial services outlined above, many developing forest nations require enhancement of capacity to prepare for inward REDD+ investment. This includes:

- creation of country REDD+ plans, including identification of investment opportunities
- mapping, demarcation, topographical analysis, soil analysis, etc
- streamlining of the regulatory environment to remove excessive bureaucracy
- strengthening of land tenure laws, where necessary
- curtailment of illegal logging or other unsustainable forestry practices, ensuring a competitive market for sustainably produced forest products
- raise public awareness of REDD+ and sustainability
- investment in education and training in international accounting standards, business, reporting, company governance, etc
- forestry management training and skills development.

At an international level, private sector investment would benefit from research and education in REDD+ strategies. Centres of excellence could be established in leading universities, providing specialised courses for international students as well as research into areas such as carbon management, tropical forestry, seed selection, land law and finance.



**chapter four:  
the potential for  
risk mitigation  
mechanisms to  
facilitate private  
sector investment in  
REDD+ investments**

**4**

## About the authors

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## highlights

- Country risk, commercial risk and market risk all present significant barriers to private investment in REDD+ activities; cost-effective mitigation would increase REDD+ investment.
- Ironically, many of the countries with the greatest need for REDD+ investment are the least likely to receive it due to high investment risks (both perceived and real).
- Existing risk mitigation mechanisms have significant capacity available, and are available today for covering REDD+ investments. These can be supported and adapted to make them more effective.
- Existing mechanisms are not widely used because investors are often not aware of their existence, or they are not easy to use, or simply too expensive.
- Governments could support three mechanisms to encourage REDD+ investment:
  - MIGA (political risk)
  - GuarantCo (commercial and market risk)
  - forestry insurance (multiple providers).
- Subsidising risk premiums is one of the most effective ways to support the above mitigation mechanisms and encourage investment in REDD+ projects.
- In so doing, governments can expect to achieve significant leverage through supporting and funding these mechanisms (ie increased private sector investment due to government support).

There are two possible routes for supporting risk mitigation mechanisms:

- First, leverage existing risk mitigation facilities for (1) the Multilateral Investment Guarantee Agency (MIGA), (2) GuarantCo and/or (3) forestry insurance capacity, as follows:
  - publicising the availability of capacity and benefits to the investment community
  - provide additional resources and expertise for directed forestry investments
  - subsidise the risk premiums.



- Second, create dedicated REDD+ facilities within (1) MIGA and/or (2) GuarantCo that are streamlined and less expensive for investors to use, as follows:
  - use shareholding in the existing facilities and other suasion levers to ring-fence capacity specifically for REDD+ investments
  - capitalise the facility
  - subsidise the facility's insurance or guarantee premiums for REDD+ investment.
- MIGA is very likely to be best placed to provide the much-needed political risk coverage to reduce barriers to investments to REDD+ in priority countries. Whilst GuarantCo would cover a wider spectrum of risks of REDD+ investments, it currently has regional (eg Brazil/Indonesia excluded) and sector limitations that must be addressed.

## introduction

This chapter proposes the following hypothesis: lowering the risk of losses on REDD+ investments can increase the amount of private sector investment to REDD+ investments – albeit at the cost of the risk mitigation.

Investors, project owners and developers of REDD+ assets all have an interest in mitigating risk. Investors may be able to increase the amount they invest; project owners and developers may be able to raise more capital more cost effectively from more sources.

The chapter provides an overview of REDD+ investment risks, the risk mitigation facilities available, and a detailed analysis of three facilities – the Multilateral Investment Guarantee Agency (MIGA), GuarantCo and forestry insurance – for their applicability in REDD+ risk mitigation.

The chapter addresses the following questions:

- what are the most relevant REDD+ risks?
- which REDD+ risks can be covered by which existing facilities – or by adapting these facilities?
- what are the current constraints or other barriers to enabling the products/facilities for REDD+ assets?
- by how much could investment increase through use of respective facilities (ie leverage)?
- what is the cost of increasing investment through risk mitigation facilities?

## 1 REDD+ risks and risk mitigation overview

### 1.1 Key risks of REDD+ assets

Investors in REDD+ projects are exposed to a high number of risks, and given the long duration of many REDD+ investments (eg forestry), the likelihood of a so-called 'risk event' occurring over the life of an investment is higher than for other shorter-term investments. This makes the return requirements of investors high as well.

Not all investment risks are equal, however. It is helpful for REDD+ investors to recognise three major levels of investment risk:

- Commercial risk: the risk that the commercial operations (eg sustainable harvesting or eco-system services) of a REDD+ investment itself will fail – or fail to create adequate value.



- Market risk: the risk that the surrounding business or financial market environment will cause a REDD+ business to fail or reduce the value to the investor of the returns generated by a REDD+ business.
- Political risk: the risk that the action of sovereign or sub-sovereign entity will cause a REDD+ business to fail or reduce the ability of the investor to extract capital from a REDD+ investment.

Within these three risk levels, there are a number of specific risks that an investor will either accept or attempt to mitigate. Table 1 provides an overview of the main investment risks associated with REDD+ investments.

**Table 1: Categories and examples of REDD+ investment risks**

Risk category	Specific risks
Commercial risks	<ul style="list-style-type: none"> <li>• Fire and allied perils</li> <li>• Pest and disease</li> <li>• Wind</li> <li>• Drought (accumulated water/soil moisture deficits)</li> <li>• Theft of timber</li> <li>• Earthquake (tsunami in certain locations)</li> <li>• Malicious damage</li> <li>• REDD+ investment business model viability (eg eco-system services)</li> <li>• Credit risk (investment's or third-party)</li> </ul>
Market risks	<ul style="list-style-type: none"> <li>• Interest rate volatility</li> <li>• Currency exchange rate volatility</li> <li>• Carbon credit market viability / volatility</li> <li>• Regulatory regime changes</li> <li>• Fraud and corruption</li> <li>• Banking/fiscal crisis</li> </ul>
Political risks	<ul style="list-style-type: none"> <li>• Expropriation (also confiscation and nationalisation) of the asset by the host government</li> <li>• Cancellation of the manager/owner's concession or lease by the government</li> <li>• Import/export embargo imposed against the country</li> <li>• Forced abandonment or divestiture of the asset by the government</li> <li>• Selective discrimination against the investor (but not other investors in the country)</li> <li>• Destruction of the asset by war or political violence (including terrorism)</li> <li>• Inconvertibility of local currency into hard currency, or inability to transfer capital out of the country</li> </ul>

The extent and scale of these risks varies by country, nature of the operation, and by duration of the investment. The authors' experience with project developers and investors across a range of REDD+ projects has shown that the highest priority risks can be narrowed to the following:

- political risk as defined above
- viability of the underlying REDD+/timber asset, as relates to destruction and damage
- viability of the REDD+ business model and project operator, including sustainability of demand and the price of timber and carbon.

Although many of these risks can be borne by investors, in many of the least developed REDD+ target countries, investors require risk mitigation facilities to help share or manage the risk. The next section describes the latter.



## 1.2 Risk mitigation facilities available to cover REDD+ investment risks

The table below gives an overview of the major categories of risk mitigation mechanisms available to investors and project developers.

**Table 2: Overview of REDD+ investment risk mitigation mechanisms**

Mechanism	Example	Risk impact	Risk coverage
Credit guarantees/ credit enhancement	<ul style="list-style-type: none"> <li>• GuarantCo – partial credit guarantees</li> <li>• USAID – Development Credit Authority guarantees</li> <li>• IFC – partial risk guarantees/partial credit guarantees; co-investment</li> </ul>	<ul style="list-style-type: none"> <li>• Covers default for any reason</li> </ul>	C: High M: High P: High
Due diligence/assurance	<ul style="list-style-type: none"> <li>• Deloitte &amp; Touche due diligence/assurance services</li> <li>• ARABIS technical feasibility studies</li> </ul>	<ul style="list-style-type: none"> <li>• Negative screening of bad risks</li> </ul>	C: Medium M: None P: None
Fund enhancement	<ul style="list-style-type: none"> <li>• ‘First loss’ anchor investment by Development Finance Institutions and foundations in investment funds (eg IFC, FMO, Cordaid)</li> </ul>	<ul style="list-style-type: none"> <li>• Partial coverage against underlying business failure</li> </ul>	C: Low M: Low P: Low
Hedging/ derivatives	<ul style="list-style-type: none"> <li>• ING Bank commodity and currency derivatives – private sector capital markets</li> <li>• FMO TCX Fund – public sector capital markets</li> </ul>	<ul style="list-style-type: none"> <li>• Minimises volatility of business cash flows or investment returns</li> </ul>	C: None M: Medium P: None
Portfolio diversification	<ul style="list-style-type: none"> <li>• International Woodland Corporation (DK) – major forestry investment fund</li> </ul>	<ul style="list-style-type: none"> <li>• Minimises volatility of investment returns</li> </ul>	C: High M: High P: High
Private sector insurance (political)	<ul style="list-style-type: none"> <li>• Lloyd’s political risk insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Insures against losses due to specific risk events</li> </ul>	C: None M: None P: Medium
Private sector insurance (commercial risks)	<ul style="list-style-type: none"> <li>• Axa UK forestry insurance</li> <li>• Lloyd’s property insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Insures against losses due to specific risk events</li> </ul>	C: High M: None P: None
Public sector insurance (political risks)	<ul style="list-style-type: none"> <li>• MIGA political risk insurance</li> <li>• UK Export Credits Guarantee Department political risk insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Insures against losses due to specific risk events</li> </ul>	C: None M: None P: High
Securitisation	<ul style="list-style-type: none"> <li>• Arcel Finance (Aracruz) forestry securitisation</li> </ul>	<ul style="list-style-type: none"> <li>• Minimises volatility of investment returns</li> </ul>	C: Medium M: Medium P: Medium
Technical assistance	<ul style="list-style-type: none"> <li>• SME Sustainable Opportunities Initiative – IFC-funded sustainability-oriented technical assistance</li> </ul>	<ul style="list-style-type: none"> <li>• Active management of risk</li> </ul>	C: Medium M: None P: None

C: commercial risk; M: market risk; P: political risk.



In Table 2 the effectiveness of risk coverage (right-hand column) is ranked according to its ability to mitigate commercial risk, market risk and political risk.

Investors and or developers could seek to use any combination of the following mechanisms to cover the three risk levels:

- political risk insurance
- partial credit and risk guarantees
- forestry insurance, and other property insurance.

The rest of the chapter will look at the best-in-class facilities that do or could mitigate the material REDD+ investment risks.

### 1.3 Risk mitigation support options for REDD+ promoters

All third-party risk mitigation mechanism comes at a cost – either to the investor or to the project developer. In addition, to apply to REDD+ investment, existing mechanism providers may require incentives and support to adapt their standard service (Table 3).

**Table 3: Types of support to risk mitigation mechanisms that REDD+ promoters can provide**

Support	Description	Impact
Risk capital	<ul style="list-style-type: none"> <li>• Increase the capitalisation or balance sheets against which risks can be underwritten</li> <li>• Provide guarantees or letters of credit leveraging own balance sheet</li> </ul>	<ul style="list-style-type: none"> <li>• Increases capacity of mechanism to underwrite risk</li> <li>• Lowers cost of capital for mechanism providers and risk mitigation costs for investors/project developers</li> </ul>
Premium support	<ul style="list-style-type: none"> <li>• Pay for part or all of risk mitigation premiums on behalf of investors or project developers</li> </ul>	<ul style="list-style-type: none"> <li>• Lowers cost of risk mitigation costs for investors/project developers</li> </ul>
Technical assistance	<ul style="list-style-type: none"> <li>• Provide financial, technical or human resources to assist risk mitigation mechanism providers</li> </ul>	<ul style="list-style-type: none"> <li>• Speeds the development of new REDD+ specific mechanisms and</li> <li>• Speeds the transformation of existing mechanisms into REDD+ specific mechanisms</li> </ul>

A recent survey by the Clinton Foundation<sup>55</sup> also highlighted options such as guaranteeing demand (quantity) or price for sustainable timber and carbon as means of reducing investment risks. These ‘demand-based’ options are considered elsewhere and will not be explored further here.

<sup>55</sup> ‘Increasing investment in tropical forestry’, New York, 28 May 2008.



## 2 detailed evaluation of highest potential mechanisms

The next section will evaluate three sections in greater detail. Each evaluation is structured as follows:

- 1) overview of the mechanism.
- 2) initial considerations on the feasibility of using the mechanism to support REDD+ investments, including:
  - (a) advantages of the mechanism
  - (b) disadvantages and limitations of using the mechanism
  - (c) geographic limitations.
- 3) cost-benefit analysis of the mechanism.

### 2.1 Option 1a: leverage existing MIGA capacity

#### 2.1.1: Headlines

- Political – or ‘country’ – risk is a significant hurdle to investment in many REDD+ countries.
- MIGA’s existing guarantees are currently able to protect nearly any cross-border REDD+ investment from the main political risks (ie nationalisation, war and civil disturbance and currency transfer risk).
- MIGA is not used widely by REDD+ investors due to unawareness, cost and inaccessibility.
- Governments can support investor use of MIGA by:
  - subsidising risk premiums
  - providing expertise and technical assistance to promote and streamline the underwriting of REDD+ investment risk
  - using shareholdings in MIGA to develop a MIGA facility that is tailored to REDD+ projects.

#### 2.1.2: Overview

MIGA is a member of the World Bank Group, with offices in Washington, DC. MIGA was created in 1988 to promote foreign investments into developing countries to support the Bank’s development objectives (economic growth, poverty reduction, etc). MIGA does not have offices in any other city or country but relies on World Bank country offices on support on transactions in the respective country.

MIGA seeks to promote foreign direct investment primarily by providing non-commercial risk insurance (what MIGA refers to as ‘guarantees’ but what most insurers would refer to as insurance) for investors and lenders. In addition to insurance, MIGA also provides dispute mediation services, and operates an online portal on investment opportunities and operating conditions in developing countries.

MIGA is the only multilateral political insurer that can provide insurance policies (or ‘guarantees’, as MIGA terms them) to private sector investors from all 170+ World Bank member countries. MIGA has two programmes: a standard programme that covers investments over \$10 million, and the Small Investment Program for investments up to that amount.

An overview of the MIGA coverage and pricing is shown in Table 4. For more information on the MIGA programme, see the Appendix.



Table 4: Overview of the existing MIGA guarantee programmes

	Standard Guarantee Program	Small Investment Program*
Coverage provided	Any or all of the following risk coverage: <ul style="list-style-type: none"> <li>• currency transfer restriction</li> <li>• expropriation</li> <li>• war and civil disturbance</li> <li>• breach of contract (sovereign)</li> </ul>	Standardised package of risk coverage that includes currency transfer restriction, expropriation, and war and civil disturbance (no breach of contract)
Pricing	Circa 0.5–2.0% of net asset value per risk coverage per year based on the risk rating of the individual project and country	0.45–1.75% of net asset value per year based on the risk rating of the project and country

\*Individual investments of less than \$10 million

### 2.1.3: Initial feasibility considerations

MIGA programmes can be used to support REDD+ investments. MIGA currently is able to insure REDD+ investors, and has the capacity to do more. MIGA does not publish REDD+ -specific guarantee figures, but it is clear that REDD+ investment is not different enough from other cross-border investment in developing countries to exclude it from MIGA remit. MIGA's mandate is also to promote environmentally sustainable investment, which gives the REDD+ investment an inherent advantage over other certain kinds of asset classes.

MIGA is not more widely used by investors for a variety of reasons, some of them being:

- investors are not aware of MIGA; most insurance intermediaries are not aware of MIGA – or don't especially promote it to investors (see next point)
- MIGA is often said to be too complicated, arduous and slow to work with
- MIGA's environmental and social criteria are seen as too restrictive for some types of investors and assets
- the cost of insurance may be too much for certain types of investment return profiles (ie assets generating 'social' returns instead of just high economic returns).

Given that MIGA has available and willing capacity to insure REDD+ investments (though there are theoretical underwriting capacity limits – see the next section), what is needed is a way to streamline the insurance process, and intermediaries that understand and can facilitate MIGA's admittedly time- and information-intensive underwriting process.

In terms of stringent economic and social criteria go, these should be non-issues for REDD+ investors and projects. As for insurance cost, this is an opportunity for governments to encourage investment in REDD+ projects.

#### 2.1.3.1: Advantages

- MIGA guarantees are already operational.
- MIGA guarantees cover REDD+ investment in the vast majority of countries targeted by REDD+ investment.
- MIGA has a good historical record of deterring insurance losses, due to its membership of the World Bank group.
- MIGA is already predisposed, due to its environmental and social standards and 'pro-poor' outlook, to support REDD+ investments.



## 2.1.3.2: Disadvantages

- MIGA only covers political risk; other risk levels would need mitigation through other mechanisms.
- An increase in use would require a direct subsidy for investors – such a subsidy of a multilateral insurer may be deemed anti-competitive (vis-à-vis commercial political risk insurers, for example).
- Assuming a premium subsidy policy, it would be difficult to ensure investment ‘additionality’ – that subsidies go only to investors that would not have invested without the subsidies.
- Existing investments – ie those where no expansion or restructuring is planned – cannot be insured.
- Lengthy underwriting process (about 2–6 months) can cause issues for certain types of investments.
- Short-term investments (less than three years) cannot be insured.

## 2.1.3.3: Geographic limitations

MIGA only covers projects in countries that are currently World Bank members. Current important exceptions are:

- Zimbabwe
- Myanmar
- Venezuela.

## 2.1.4: Cost-benefit assessment

## 2.1.4.1: Costs

As MIGA’s political risk guarantee programme is already operational, the only explicit costs are those of MIGA’s political risk guarantees themselves. For a promoter of REDD+ investment, the most straightforward way to encourage investment with MIGA insurance would be to subsidise the cost of insurance premiums.

This chapter makes the following assumptions in terms of MIGA cost assessment:

- \$200 million in new private sector investment is the REDD+ promoter target
- 50% of MIGA insurance premiums would be subsidised.

Table 5 shows what this would cost a REDD+ government sponsor, assuming that support would be required for an average of a five-year period.

**Table 5: Cost of supporting existing MIGA guarantee programmes**

Standard Guarantee Program	
Premium support*	\$2.5–10 million (over a five-year period)

*\*Per \$200 million of REDD+ investment, and assuming 50% subsidy by a single sponsor*

## 2.1.4.2: Benefits

Assuming the above support of MIGA premiums on behalf of qualifying REDD+ investors, the target benefit would be a \$200 million increase in private sector investment. It is clear that by covering these premium costs along the parameters described, \$200 million would



necessarily have been invested. However, it does not follow that there is an implied average leverage of 1:50 (\$1 in support for \$50 in private sector capital invested).

Indeed, the following qualifications are required:

- additionality is difficult to prove: investors may have already planned to invest without MIGA coverage, and are simply taking advantage of a subsidy
- MIGA coverage may not be the main reason for the new investment: political risk is only one of the hurdles to private sector investment in REDD+ projects; it is difficult to assess the exact increase in investment associated with subsidised MIGA coverage.

In this light, the benefits above are tenuous. It cannot be assumed that the leverage will be 1:50.

## 2.2 Option 1b: leverage existing GuarantCo capacity

### 2.2.1: Headlines

- GuarantCo covers all investment risks for debt investors in infrastructure projects in developing countries, but some notable tropical forest cover/REDD+ countries are excluded, such as Brazil and Malaysia.
- GuarantCo's existing products are able to cover some types of REDD+ projects (those with an infrastructure component).
- GuarantCo is not used widely by investors due to unawareness and cost – and inapplicability to non-infrastructure (eg pure timber or plantation projects) investments.
- Governments can support investor or project developer use of GuarantCo by:
  - using its shareholding to expand GuarantCo's remit to all types of REDD+ debt investments
  - subsidising risk premiums
  - providing expertise and technical assistance to promote and streamline the underwriting of REDD+ investment risk.

### 2.2.2: Overview

GuarantCo is a credit guarantee (or 'enhancement') facility for local currency debt exposures in emerging markets. GuarantCo is a private–public financial institution sponsored by DfID (UK), SECO (Switzerland), SIDA (Sweden) and the Dutch Ministry of Foreign Affairs. Though GuarantCo is housed and operated within a division of Standard Bank in London, its shareholders are the Private Infrastructure Development Group (PIDG, a consortium of development finance institutions focused on infrastructure investment) and FMO (The Netherlands).

### 2.2.3: Investments covered

GuarantCo covers infrastructure investment. Currently eligible sectors are energy, water/waste management, transportation, telecoms, housing and basic industries involved in infrastructure development (eg bio-fuels). GuarantCo will also cover infrastructure components of agro-industry projects.

GuarantCo covers (with rare exceptions) only local currency debt exposures. Investment can be cross-border or local (though the latter is favoured), but it should be in the host country's currency.



The types of clients that GuarantCo seeks to work with are:

- private sector project companies undertaking greenfield projects or expanding existing facilities
- municipal infrastructure if funded largely through user fees (or ring-fenced structure providing satisfactory security)
- parastatals if privatisation is planned (or case by case if operations are along commercial lines).

Although GuarantCo seeks to encourage new investment, it will refinance existing projects if cross-border financing is substituted by local currency debt. GuarantCo can guarantee transactions up to \$12 million (with exceptions up to \$20 million), with a maximum tenor of 15 years.

Through the end of 2008, GuarantCo had committed \$79.3 million in seven projects, mainly in telecoms, industrial infrastructure (cement, steel) and transport.

#### 2.2.4: Products and pricing

GuarantCo offers the following products:

- partial credit guarantee covering default risk on a portion of a loan or bond – generally on demand (ie requiring only notification and a waiting period) and unconditional
- partial risk guarantee covering default risk due to specific events – such as construction failure or revenue shortfall
- cover for senior, mezzanine or sub-debt; maturity, coupon or principal strips; loans, bonds or securitisation.

Given the idiosyncratic nature of many infrastructure investments, GuarantCo is keen to tailor projects and coverage to the specific project. GuarantCo can provide access to other forms of risk transference: insurance, reinsurance, credit default swaps, derivatives, etc.

Importantly, GuarantCo has a preference for risk sharing with other parties involved in the transaction – project developers, other financial institutions, etc – rather than taking on the full default risk. GuarantCo seeks to provide coverage for up to 50% of the default exposure, with the debt provider or other parties taking on the remaining risk. GuarantCo can, however, cover up to 100% of a transaction when required.

GuarantCo's products cover the full spectrum of risks involved in an investment. If a debt obligation is not met for any reason – commercial failure of the underlying project, business disruption, political risk events and so on – GuarantCo would cover the guaranteed part of the payment.

GuarantCo cover is therefore correspondingly expensive – generally between 2% and 5% of the guaranteed amount per year.

#### 2.2.5: Initial feasibility considerations

A material limitation to GuarantCo currently is that much of existing and planned REDD+ investment is not likely to be eligible for coverage. Pure plantation and natural timber assets, for example, are not considered 'infrastructure' as defined by GuarantCo. GuarantCo is, however, open to guaranteeing assets that have an infrastructure component (eg sawmills). While there might be infrastructure components to some REDD+ projects, strict adherence to existing GuarantCo coverage criterion would likely exclude GuarantCo as a viable option for supporting REDD+ investment on the scale required.



### 2.2.5.1: Advantages

- Mandated to promote long-term investment; conducive to the long-term REDD+ investment timeframe.
- Covers all investment risks for debt investors.
- Demonstrated impact on private sector capital flows.

### 2.2.5.2: Disadvantages

- Would not cover the majority of REDD+ projects.
- Coverage is expensive; subsidy of coverage by a government sponsor would be expensive as well.
- Currently has a low capitalisation; would require significantly more capital to have an impact on REDD+ capital flows.
- Maximum guarantee coverage too small for some REDD+ projects.

### 2.2.5.3: Geographic limitations

GuarantCo only covers projects in the lower- and middle-income countries as defined by the Development Assistance Committee (DAC) list of development aid recipients. Significant exclusions would be:

- Brazil
- Chile
- Costa Rica
- Malaysia
- South Africa
- Venezuela.

## 2.2.6: Assumptions on capital requirements and leverage

At the end of 2008, GuarantCo negotiated an arrangement with Barclays Bank and KfW to increase its lending capacity from \$73 million to \$292 million through a leverage arrangement. Overall capacity is anticipated to rise even further to \$400 million in the near future, once GuarantCo's equity increases to \$100 million as proposed by its shareholders (GuarantCo is allowed to provide guarantees on loans and bonds on up to four times its equity base, which is currently at \$73 million).

## 2.2.7: Cost-benefit analysis

### 2.2.7.1: Costs

Supporting the existing GuarantCo facility would involve premium support: ongoing subsidy of guarantee premiums to reduce their cost to project developers or investors (Table 6).

**Table 6: Cost of supporting the existing GuarantCo programme**

	Amount
Premium support*	\$4.5–11.25 million (over a three-year period)

\*Assuming a 50% support of actual premium costs



## 2.2.7.2: Benefits

**Table 7: Benefits of supporting the existing GuarantCo programme**

	Amount
Leverage estimate	1:25
New investment potential	\$200 million

The same caveats apply to GuarantCo leverage as to MIGA leverage: capacity does not necessarily equal investment. Also, the following qualifications are required:

- additionality is difficult to prove
- GuarantCo coverage may not be the main reason for the new investment.

Therefore, leverage of 1:25 is undoubtedly far too optimistic

## 2.3 Option 1c: leverage existing forestry insurance capacity

### 2.3.1: Headlines

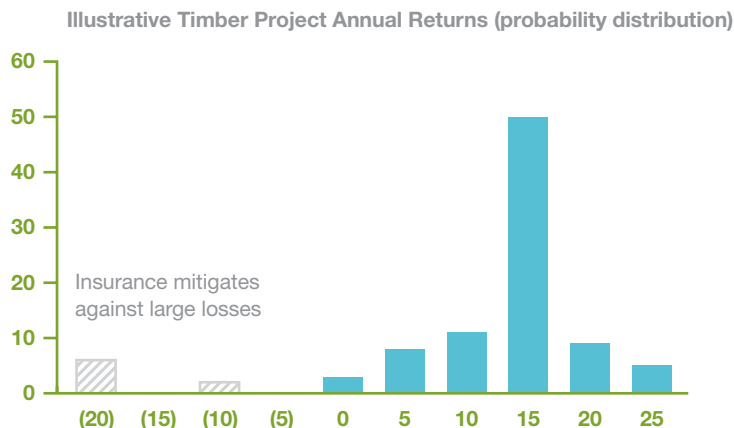
- Insurance can remove many of the key uncertainties for project developers, operators and investors, eg reduce the size of buffers.
- Insurance reduces volatility to an investor by:
  - capping large losses (catastrophic events)
  - increasing overall financial certainty
  - improving credit terms
  - providing access to finance.
- Main limits of insurance solutions lie in challenges to cover long-term liabilities and the difficulty to insure political risks (but see Section 4.1 on MIGA).
- Insurance can play a very important role in the risk transfer for afforestation/ reforestation (A/R) or REDD+ projects, but is probably not the silver bullet to solve permanence issues.
- Insurance of forest carbon may best be implemented in a joint effort of insurer, project developers and governments.
- Various insurers are working with project developers to explore risk transfer solutions for forest carbon.
- Governments can play a role in subsidising insurance products through PPP schemes, where conditionality can be attached.

### 2.3.2: Overview: forest insurance capacity

The key to (productive) forestry investment is the long-term growth to maturity. Falling short of projected yields can prove costly for investors and forest owners. Insurance could be arranged for full value of the forest, sufficient to properly compensate the owners if the investment is lost or delayed in reaching maturity through damage (Figure 1).



**Figure 1: Reducing volatility: internal rate of return (IRR)% (x axis) against probability (y axis).**



Source: ForestRe

Insurance is available to the forestry sector, but a lack of capacity is constraining growth outside North America and Australia. There has been a global decline in insurance capacity for forestry since the early 1990s, from around \$140 million to around \$50 million today. The events of 9/11 highlighted inadequacies in historical underwriting performance within the global reinsurance sector, with few companies escaping unscathed, and market participants have been working to rebuild their balance sheets since. Consequently, most reinsurers have redirected risk capital away from non-core lines to more mainstream/higher-margin lines such as aviation, property and catastrophe. The reasons are threefold:

- 1) underwriters have been under increased pressure from management to protect corporate credit ratings – focusing therefore on core activities
- 2) the dramatic rise in premium rates for property business during in 2002/3 highlighted the opportunity cost of keeping ‘unfamiliar’ business lines open
- 3) increased scrutiny across the board has put pressure on non-core lines. Previously insurers had relied on investment income to compensate for poor underwriting results; these same underwriters must now be able to identify with confidence their total portfolio exposures under realistic disaster scenarios (ie conventional risk assessment) and be readily understood by senior management.

While these are all perfectly rational reactions to seismic changes in the market place, they are also highly conventional. Consequently few reinsurers are willing to take unnecessary risks, offer new products or enter niche sectors such as forestry.

Despite this reduction in capacity, there are dedicated companies established to improve financial flows to forestry by providing targeted insurance to sections of the market (eg small and medium-sized enterprises and co-operatives), which otherwise find access difficult; and thus improve the process of underwriting forest risks. Large investors spread of risk via diversified portfolios, which is not always an option for the smaller investor or forest owner. In these cases, risk transfer can be managed through the provision of insurance. The benefits of such schemes (especially for the small and medium-sized forest enterprise (SMFE) market) are:

- quick to put in place, especially where a group scheme exists
- cost effective – SMFE physical damage covers are about 1.5% on total values, falling to 0.3% as values increase
- easy to cover a co-operative or pooled interests
- the beneficiary can be the bank (loan repayment) and/or grower for restitution
- lower financing costs – as the loan is now secured



- political risk cover can be provided alongside (costs  $\leq$  2% of total value).

A recent UNEP-FI insurance working group<sup>56</sup> canvassed 18 leading insurance groups across 14 countries on the state of play on forestry and insurance. Whilst there is a long way still to go in scaling up forest insurance products, it concluded the market still presented an untapped opportunity with the challenges of climate change challenge providing a strong stimulus to innovate. The main findings:

- forty per cent provided coverage of some form, with fire being the most common peril
- most forestry insurance products were offered in mature markets, with coverage expanding to emerging markets (notably Brazil, Chile, Mexico and Russia)
- buyers of insurance were mostly private, commercial and productive forest plantations – not public or natural forests
- only a limited number of insurers were looking to introduce innovative products (eg forest carbon delivery guarantees)
- still branded a non-core activity: forestry was not a major line of insurance business (or source of premium income); underwriting results had also been mixed
- the lack of provision for insuring forestry risks were principally (1) its high exposure to catastrophic losses and high accumulations, inadequate pricing levels, and insufficient risk management practices, and (2) lack of technical underwriting expertise.

It is worth noting that different risks are prevalent at different stages of a forest cycle, so the incidence of various perils that could impact a forestry project will need to be reassessed throughout its term.

Insurance is not just about providing capacity – it is also about developing the tools to allow an objective global assessment of risks to forests. What is lacking at present is a one-stop shop for transfer of perceived forestry risk.

### 2.3.3: Rating and pricing of forestry cover

According to ForestRe, there is a general ceiling on premiums of about \$1.5 million regardless of the portfolio size (eg \$100 million to \$1.4 billion), although in practice the amount may be nearer \$500,000. This is countered by offering different levels of deductibles and maximum limits, which introduces a whole new way of underwriting these risks, ie it is the structure of the coverage that changes (self-retention/deductible amount per loss event and the size of the loss limit).

- Insurers estimate exposure up to a 1:250 year return period for accurate risk pricing (data dependent). The insured limits are typically based on the 1:250 year event, and this may represent only a small percentage of the total sum insured. For example \$10 million of limit over a retained \$2 million losses on a \$1 billion forest portfolio.
- Losses due to 1:20–50 year events add significantly to the average value of expected losses.
- As climate trends change, average losses are hiding the extremes in losses from year to year. Catastrophic losses can hit returns and sustainability. Over eight years (2000–2008), the incidence rate of temperature anomalies has increased eightfold from a 1:100 to a 1:12 event; these changes power fire and storm events. According to ForestRe,<sup>57</sup> this alarming increase in incidence is illustrated by the anecdotal evidence of loss trends for 2009 already: Australian bush fires and drought in

<sup>56</sup> UNEP FI (2008) 'Making Forests Competitive: Exploring Insurance Solutions for Permanence'.

<sup>57</sup> ForestRe is focused on the analysis of risk trends and designing bespoke insurance to de-risk forestry investment from the unexpected.



Argentina and Uruguay are the worst in over 100 years; commercial forest fires in Chile are the worst in 20 years.

- Loss ratios fluctuate from year to year. The potential for catastrophic losses in a single year – which can easily wipe out years of favourable underwriting results – remains a major concern with insurers.

In the years between valuations the insurance amounts will be adjusted to reflect growth. These adjustment factors are established in consultation with leading forestry consultants.

Table 8 demonstrates some of the input variables and likely costs. These figures have been provided on a no-names basis.

**Table 8: Pricing of forestry insurance: lost cost examples**

Risk	Lost cost
High risk fire environment with a history of large losses (eg South Africa)	Above 0.70% (fire) – can be as high as 4.0%; 1.0–5.0% (wind)
New investment sites prone to cyclones (eg Fiji)	Typically 0.20–0.70% (fire); 0.2–0.7% (wind)
Low risk locations	Typically 0.01–0.10% (fire); 0.02–0.4% (wind)

Source: ForestRe

#### 2.3.4: Cost–benefit assessment of forestry insurance provision

There is a perceived risk, which can be allayed by purchasing insurance for some of the main perils.

Carbon risk is perceived differently to timber risk. For some, carbon is much more secure than timber; after some forest fires the trees remain standing, leaving the carbon in the forest. Equally, if the trees are blown over by the wind, the carbon remains in the tree. According to Norton Rose,<sup>58</sup> the non-permanence of the commodity kills about 90% of forest projects they look at.

Insurance can remove many key uncertainties – but it is not a silver bullet, nor is it necessarily the only answer to reducing risk. Rather than using insurance, good management and large-scale forest land management is often a more sustainable cost-effective alternative. These practices are often integral to certification schemes such as the Forest Stewardship Council (FSC) standard, for example.

#### 2.3.5: Constraints and limitations

##### 2.3.5.1: Lack of data

In emerging markets, there is often a lack of an insurance mentality and a lack of data. Without accurate insurance loss statistics (or proxies such as production figures), weather data or outputs from yield forecast models, making actuarially sound pricing is a challenge.

<sup>58</sup> Anthony Hobley speaking at the Norton Rose Poznan event 9 Dec 2008, 'Making Forests Competitive: Practical Solutions for Permanence' (UNFCCC COP 14).



Where data is lacking, the same insurance conditions are often applied throughout an entire region, independent of species, exposure and risk management practice, which leads to either inaccurately or uncompetitively priced product.

Loss statistics and trained loss adjusters are essential to a successful insurance scheme. It often takes a considerable time until loss adjustment procedures and manuals are implemented.

#### 2.3.5.2: Predictable Loss

There are situations where insurance cannot be priced because the loss is too predictable. This is where government intervention and subsidies may come in. One of the principal tenets of insurance is ‘fortuitous loss’ – a loss that occurs by accident or chance – however, in certain cases the loss is predictable, and there is an inevitability associated with the unfortunate event. In such cases the cost can be prohibitive and it could be for cases such as these that government programmes or subsidies are needed.

Equally, there are limitations when it comes to some of the natural events that cannot be predicted.

#### 2.3.5.3: Geographic limitations

Areas prone to high-risk perils will face higher premiums.

### 2.3.6: Risk coverage

#### 2.3.6.1: Traditional perils

Perils are covered by traditional insurers and re-insurers (Swiss Re, ForestRe, etc). Covers are for material damage (loss) to forests due to named causes:

- fire: fire risk impact is inversely related to tree age and can be catastrophic. Cover can be extended to FLEXA (fire, lighting, explosion and impact of aircraft); and further include fire fighting expenses (as variable costs) and even debris removal.
- drought: systemic impact of drought risks, fire correlated and reduces growth;
- wind/hurricane: often limited insurance availability, unless in a balanced portfolio;
- hail, frost, snow and ice;
- land slide and flood;
- SRCCMD: social riots, civil commotion and material damage;
- pests and diseases.

#### 2.3.6.2: Forest carbon delivery insurance

Cover can be extended to forest-carbon-based project developers (cf AIG conceptual for carbon credit delivery insurance):

- insuring the Kyoto Protocol cycle, eg Clean Development Mechanism (CDM) methodology, registration, and issuance
- hedging of carbon market risks: futures, options, structured products.



Carbon credit delivery insurance to date has focused on the delivery risks associated with a broad range of projects qualified under the Kyoto Protocol (eg CDM). Carbon credit contracts are typically payment on delivery, and thus performance and delivery risks are a key concern; cover would typically include political and credit risk as well as including design-specific cover for:

- technological performance risk: will the project create the carbon emission reductions necessary to generate the credits purchased
- pricing risk: if the carbon credits are not delivered, the buyer may have to turn to the wider market to purchase replacement credits – at a potentially higher price.

The basic issue around pricing insurance for carbon credits is determining the intrinsic value of the credit. These values are established in the market, and first requires there to be some kind of trading mechanism around the value of these credits. The exposures are then definable, as the credit is just another financial product of interest to the customer.

To date, forest carbon credits have not emerged as an insurable exposure, but the expectation is that they will once the full impact of carbon trading occurs. At present, no one is guaranteeing carbon credits past 2012. Instead, insurers will insure the physical entity (ie physical loss of the asset, the forest) but not the value of the credit.

#### 2.3.6.3: A/R and REDD perils

Further perils that A/R or REDD project developers may seek cover for would typically fall under the ‘political risk’ umbrella:

- government failure to honour legal contracts
- change in regulation/expropriation
- land upheaval, riots, social unrest.

Permanence and timeline are likely to be major concerns for A/R and REDD projects:

- permanence of sinks requires forest systems and carbon storage to remain intact over decades
- forest insurance contracts are usually renewed annually (slightly longer time periods are possible)
- the regular renewal of insurance cover might become part of the long-term operation of A/R or REDD projects
- government or public–private partnership (PPP) is probably best placed to take over very long-term liabilities.

#### 2.3.7: A role for government intervention: government-subsidised cover

This is typically found with food crops, and could be directed to REDD+ activities. Government-subsidised insurance programmes generally take the form of a PPP, where government collaborates with the insurance sector, sometimes going even further to include risk transfer to the domestic as well as international reinsurance market for peak exposure.

Risk is ‘pooled’ (aggregated) and shared among insurance companies while peak risks are secured by state-owned reinsurers. Governments can further leverage the use of capital market instruments to smooth and protect budgets at reduced opportunity costs. For this, partners outside the insurance sector are involved in the PPP concept so that governments can benefit from the same solutions as



already used in the corporate business segment.<sup>59</sup> According to the Food and Agriculture Organization of the United Nations, subsidised credit is not a proper incentive mechanism since it leads to a reduction in capitalisation of the financial institution providing the loan. Directed credit may be difficult to administer. Loan guarantees and government-supported insurance for plantations are hard to establish in practice.

Owing to the failure of other mechanisms, the most common direct incentive is government co-financing of inputs, such as plants, and the provision of extension. The indirect incentives of research and access to market information may also be good ways for governments to support private forestation efforts.

#### 2.3.7.1: Government-subsidised cover for REDD+ to incentivise further investment

It is possible to bridge the gap between a deposit premium say at 75% of the calculated/modelled premium, and the true 100% premium. If such a subsidy was linked to a minimum invested amount (eg \$100 million) it may promote more substantial investment in REDD+ etc. It could also be conditional on compliance with FSC standards or the Voluntary Carbon Standard and have some form of stakeholder warrantee of involvement.

### 2.3.8: Forestry insurance innovations

Below, we list some of the possible innovations in forestry insurance over and above the standard provision of cover. These necessitate development, increased disclosure and availability of data and commitment on behalf of both insurers and market participants. Much of the thinking is premised around making forestry insurance more accessible to asset owners and investors and in-so-doing incentivise further investment. Product design and conditionality can further direct investment flows to particular A/R or REDD activities.

#### 2.3.8.1: New pricing models for TIMOs – based on capital invested and exposure

Companies such as ForestRe are working closely with a number of timber investment organisations in trying to reach a premium that is proportionate to the returns on invested capital into forestry (such as 5–7% over product pricing cycles) and to the level of catastrophic losses to which various portfolios are exposed.

#### 2.3.8.2: Moving from ex-post to ex-ante event financing

Losses based on fire and climate impacts can impact the viability of project. A pro-active approach would be more favourable and stabilise earnings volatility for productive forests.

This could be akin to the mechanisms already used in the food crop industry, where in some countries governments provide up to 50% subsidies for agriculture insurance programs (cf multi-peril crop insurance, MCPI). Compensation is paid based on a drop in yields below a weighted historical average. An extension of MCPI is 'revenue covers', where fluctuations in commodity prices at planting compared to harvest are also covered. 'Income covers' is a further extension aiming to stabilise overall farm income. The same could be introduced to de-risk productive forests.

<sup>59</sup> See Commonwealth Business Council (CBC) and SwissRe (March 2009) *New Solutions for Managing the Food Crisis: Private–Public Partnership Programme for Agriculture Investment and Risk Management*, [www.cbeglobal.org](http://www.cbeglobal.org).



#### 2.3.8.3: Bancassurance:<sup>60</sup> insurance as collateral

Bancassurance is the provision of forestry insurance tied to a credit line, distributed and administered by a bank (and often subsidised by the government). As such, the lending risk is better co-ordinated, and increases the availability of credit; in many cases SMFEs are unable to raise money from banks to improve their production due to the lack of collateral. In the case of bancassurance the recoveries come from the policy.

These schemes have been successfully implemented for food crops – and could be extended to timber plantations. In Brazil, Banco do Brasil made crop insurance compulsory for loans to monoculture soybean farmers – which in the case of the 2005 draught prevented many farmers from going out of business.<sup>61</sup>

There is a clear win-win: productive forest plantation owners would have more ready access to loans, banks have insurance as collateral of the loan in case of any losses and while the government subsidises the scheme, it reduces potential disaster payments through risk transfer to the private sector.

#### 2.3.8.4: Use of standing forest as collateral

Natural forest could be used as collateral for other forest development (eg Brazilian forest raised \$15 million).

#### 2.3.8.5: Extending annually priced policies to term and rolling

Traditional forestry insurance (covering the timber) are usually negotiated and renewed annually. Adjustments to policy durations and annually priced, term and rolling policies can further play a role in the process of making policies market-friendly. Forest insurance contracts are usually renewed annually but REDD projects are likely to favour contracts that run until the completion of the project. Multi-year forest insurance schemes (akin to life insurance policies) might provide solutions.

#### 2.3.8.6: Yield guarantees: structuring an investor-friendly product

Yield guarantees could be provided to forestry-based investments and could incentivise increased capital inflows. Provision of such guarantees would require extensive client datasets (eg three years without losses). Every forestry business has timber yield growth models; these are often inaccurate or overstate the actual growth. Yield guarantees could guarantee a minimum income; say 80% with a bottom of volume produced.

#### 2.3.8.7: Insurers role in credit access

Established insurers can provide risk transfer services to SMFEs (eg under \$20 million or more likely around \$1 million).

<sup>60</sup> Bancassurance is the selling of insurance and banking products through the same channel.

<sup>61</sup> CBC and SwissRe (2009) *New Solutions for Managing the Food Crisis: Private–Public Partnership Programme for Agriculture Investment and Risk Management*.



#### 2.3.8.8: Links with capital markets instruments

Forest insurance products are typically underwritten via traditional, indemnity-based insurance policies. Some insurers are exploring alternative risk transfer and financing solutions (eg catastrophe bonds) which source capacity from and transfers peak risks to the capital markets.

#### 2.3.8.9: Insurance as wrapper for buffers: insuring risk of non-permanence

The disadvantage of using a buffer approach (to counter the issues of non-permanence) is the sizeable opportunity cost foregone: forested land that could be monetised (in the case of productive forests) is unutilised. A cost-efficient form of insurance could therefore enhance investment prospects.

From a risk perspective, the physical forestry buffers (representing carbon credits) are similar to insurance: the credits can be viewed as the conventional risk premium. The pooling of risks and the corresponding premiums generated is fundamental in insurance schemes to mitigate risk by smoothing out variations in claims.

Insurance schemes have the potential to become environmentally credible and financially attractive alternatives to the concepts of temporary credits and credit buffers.

## 2.4 Option 2a: create a REDD+-specific MIGA facility

### 2.4.1: Overview

MIGA could be asked to establish a dedicated, streamlined and potentially subsidised guarantee facility within MIGA for REDD+ ‘certified’ or ‘categorized’ projects and investment flows. The coverage might be the same as for standard investments, but REDD+ investors would get preferential access and pricing.

The recently developed MIGA Small Investment Program (SIP) (see Section 6.1.2) provides a template for developing such a new programme. Initiated by MIGA itself and developed over a two-year period, the programme targets a specific category of investment, with reduced insurance costs and a streamlined insurance process.

### 2.4.2: Initial feasibility considerations

Informal discussions with MIGA counterparts indicate that such a programme would be of interest to MIGA – again, especially if governments such as the UK’s requested that MIGA develop such a programme. It seems that SIP’s two-year development timeline could be shortened significantly, especially if the internal resources required (eg one forestry underwriter/expert and a project manager) could be sponsored externally, and if there was a mandate from a major bank member such as the UK.

MIGA promotes SIP despite the relatively high transaction costs associated with individual small transactions – and even reduces insurance pricing (meant to attract small investors). Indeed, SIP premium rates are quite attractive compared with other political risk insurers in many countries. Similarly, a MIGA-REDD+ programme could be subsidised (either internally or externally) in order to make insurance coverage attractive to mainstream investors.



#### 2.4.2.1: Advantages

- Less explicit subsidy if a new programme is developed specifically for a certain type of investment/project (subsidy of pricing built into the programme).
- More likely that subsidies directed at investors that would otherwise not have invested; clearer view of leverage and impact.
- Provides a ring-fenced funding target for government sponsors, and would allow a more controlled and co-ordinated approach to reducing the risk of REDD+ investment.

#### 2.4.2.2: Disadvantages

- Longer development time period than existing facilities.
- Does not address commercial risk concerns of potential investors.

#### 2.4.2.3: Geographic limitations

See Option 1.

### 2.4.3: Assumptions on leverage

MIGA has about \$1 billion in shareholder equity on its balance sheet, and a current exposure of about \$7 billion in guarantees. Although MIGA can increase exposure without new equity, a safe assumption is that leverage will remain at 1:7.

### 2.4.4: Cost–benefit assessment

#### 2.4.4.1: Costs

A MIGA REDD+ facility would involve the following cost categories (Table 9):

- 1) risk capital: the cost of this option is equal to the proportion of the capital increase that a given government sponsor would bear. The UK Government is MIGA's fourth-largest shareholder, and currently holds around 5% of MIGA's shareholder equity and 4% of voting rights (the top five shareholders are the US, Japan, Germany, the UK and France (tied)). This chapter assumes that it would double that proportion in a capital increase to motivate other shareholders to increase their shareholding accordingly. Table 6 assumes an increase of MIGA's current \$1 billion in shareholder equity to \$1.2 billion (ie adding \$200 million in capacity);
- 2) premium support: ongoing subsidy of guarantee premiums to reduce their cost to project developers or investors. Same support as in Option 1 (see Section 4.1);
- 3) experts/staff: additional underwriting staff may be required to handle the additional work flow attributed to REDD+ projects. 1 FTE for one year: \$100,000.



**Table 9: Cost of supporting a MIGA REDD+ specific programme**

	Amount
Risk capital	\$30 million
Premium support*	\$2.5–10 million (over a five-year period)
Technical assistance	\$100,000
Total support	\$32.6–40.1 million (over a five-year period)

*\*Assuming a similar support of actual guarantee costs, and 50% support by a single sponsor*

#### 2.4.4.2: Benefits

This chapter assumes that a government sponsor would seek \$200 million in increased REDD+ investment. Consistent with MIGA's existing balance sheet leverage of 1:7, this would require an estimated \$30 million in underwriting capacity for such a facility – without the premium support or the funds required to set up the facility. With these included, the leverage drops to 1:5.5 (Table 10).

**Table 10: Benefits of supporting a MIGA REDD+ specific programme**

	Amount
Leverage estimate	1:5.5
New investment potential	\$200 million

Clearly, available capacity will not immediately equate to increased investment, but subsidised premium costs and a streamlined application process should lead to utilisation of the capacity.

## 2.5 Option 2b: create a REDD+-specific GuarantCo facility

### 2.5.1: Overview

If GuarantCo could widen its investment criteria to encompass REDD+ projects and USD/EUR-denominated investment, GuarantCo coverage could provide significant risk mitigation support to REDD+ investment in emerging markets.

In view of its current mission to support local currency infrastructure investment, it is likely that a separate facility within or related to GuarantCo targeting such investment would be required. The coverage might be the same as for standard GuarantCo investments, but REDD+ investors would get preferential access and pricing.



## 2.5.2: Initial feasibility considerations

GuarantCo has recently become fully operational, and is in the process of scaling up its activities. This, and the fact that it has a few key sponsors (DfID and FMO both have equal equity shares of \$25 million – together well over half of the equity), may make it conducive to enhancing its capacity in the direction proposed in this document. On the other hand, it is possible that its sponsors want it to focus on more traditional infrastructure investments.

### 2.5.2.1: Advantages

- Tailored to REDD+ investment requirements; more flexible than the existing programme.
- Mandated to promote long-term REDD+ investment.
- Covers all investment risks for REDD+ debt investors.
- More effective subsidy than direct premium support.

### 2.5.2.2: Disadvantages

- Coverage is expensive; subsidy of coverage by a sponsor would be expensive as well.
- Significant capital requirements.

### 2.5.2.3: Geographic limitations

A REDD+ facility could be designed to cover all REDD+ focus countries.

## 2.5.3: Cost–benefit analysis

### 2.5.3.1: Costs

A REDD+ GuarantCo facility would involve the following cost categories (Table 11):

- risk capital: capitalisation (or counter-guarantees from government sponsors) of the facility
- premium support: ongoing subsidy of guarantee premiums to reduce their cost to project developers or investors
- experts/staff: REDD+ risk assessment and underwriting expertise – for both the facility design phase and ongoing operations.

**Table 11: Cost of supporting a REDD+ specific GuarantCo programme**

	Amount
Risk capital	\$25 million
Premium support*	\$4.5–11.25 million (over a three-year period)
Technical assistance	\$600,000 (over a three year period)
Total support	\$30.4–37.7 million (over a three-year period)

*\*Assuming a 50% support of actual premium costs*



## 2.5.3.2: Benefits

At present, GuarantCo has committed \$79.3 million in seven projects, generating total private sector commitments of \$1.1 billion (or, according to GuarantCo, an implied leverage of almost 14). However, this chapter takes a more conservative view of leverage: GuarantCo states that it can leverage its equity at 1:4 with guarantee coverage (ie \$1 in equity is \$4 in coverage). Assuming that it is providing 75% coverage on investments, along with a 25% of that amount in additional private sector investment alongside each transaction, adding \$25 million in equity equals \$200 million in new investment, or a leverage of 1:8 – without premium support and risk capital. Including these latter costs, the leverage is reduced to 1:6 (Table 12).

**Table 12: Benefits of supporting a REDD+ specific GuarantCo programme**

	Amount
Leverage estimate	1:6
New investment potential	\$200 million

As with the MIGA REDD+ facility, available capacity will not immediately equate to increased investment, but subsidised premium costs and a streamlined application process should lead to utilisation of the capacity.



## 3 appendix

### 3.1 MIGA guarantee programme detailed overview

A detailed summary of the MIGA guarantee programme is given below.

**Table 13: Overview of the MIGA programme**

	Summary of policy	Summary of policy
Countries eligible	<ul style="list-style-type: none"> <li>• All 173 MIGA member countries (both investors or investment recipients)</li> </ul>	<ul style="list-style-type: none"> <li>• Currently restricted countries: Zimbabwe, Kosovo, Myanmar</li> </ul>
Eligible investors	<ul style="list-style-type: none"> <li>• Cross-border investors</li> <li>• Privately or publicly-owned companies</li> <li>• State-owned companies, if operating on a commercial basis</li> </ul>	<ul style="list-style-type: none"> <li>• Can't cover investors from the project 'host country' (eg Peru investors in a project in Peru)</li> <li>• Can cover banks and financial institutions providing debt only if some equity or investor loan also insured)</li> </ul>
Minimum length of coverage	<ul style="list-style-type: none"> <li>• 3 years</li> </ul>	<ul style="list-style-type: none"> <li>• Cancellation prior to 3 years possible but penalties apply</li> </ul>
Maximum length of coverage	<ul style="list-style-type: none"> <li>• 15 years</li> <li>• 20 years for some infrastructure projects</li> </ul>	
Investment type	<ul style="list-style-type: none"> <li>• New investments</li> <li>• Existing investments only if associated with an expansion or modernisation or a financial restructuring</li> </ul>	<ul style="list-style-type: none"> <li>• Insurance process must be started prior to 'irrevocable' commitment to invest</li> </ul>
Investment instruments covered	<ul style="list-style-type: none"> <li>• Equity and shareholder loans</li> <li>• Loan guarantees</li> <li>• Non-shareholder loans (ie loans from financial institutions)</li> <li>• Non-equity direct investment (eg production-sharing contracts, technical assistance contracts, management contracts, leases, etc)</li> </ul>	
Amounts	<ul style="list-style-type: none"> <li>• Any investment amount</li> </ul>	<ul style="list-style-type: none"> <li>• Investments less than \$10 million fall under the Small Investment Program</li> <li>• Single country underwriting capacity is currently \$700 million</li> </ul>
Coverage	<ul style="list-style-type: none"> <li>• Equity covered up to 90% of investment amount</li> <li>• Debt covered up to 95% of loan amount (exceptions possible)</li> </ul>	



### 3.2 MIGA Small Investment Program (SIP) detailed overview

For investments less than \$10 million, MIGA has developed the SIP. A summary of the program parameters is given below.

**Table 14: Detailed overview of MIGA programme**

	Summary of policy	Comments
Risks covered	<ul style="list-style-type: none"> <li>• Currency inconvertibility</li> <li>• Transfer restriction</li> <li>• Expropriation</li> <li>• War and civil disturbance</li> </ul>	<ul style="list-style-type: none"> <li>• No breach of contract coverage possible</li> </ul>
Coverage tenor	<ul style="list-style-type: none"> <li>• Minimum 3 years</li> <li>• Maximum 10 years</li> </ul>	5 year extension (to 15)
Restrictions	Investment/project must have: <ul style="list-style-type: none"> <li>• No more than 300 employees</li> <li>• Total assets not be more than \$15 million</li> <li>• Total annual sales should not be more than \$15 million</li> </ul>	

Advantages of SIP over normal guarantee programme are:

- faster, less data intensive and more streamlined insurance process
- reduced insurance premiums
- no application fees
- no requirement of World Bank board approval of investment (MIGA management approval only).

It is important to note that SIP has traditionally been a loss-making venture for MIGA. Transaction costs are nearly as high as for normal guarantees, despite reduced premium income. But SIP continues to be supported due to its focus on projects deemed to have high development benefits.

MIGA has a good track record of working with smaller investors and small businesses – issuing several guarantees a year through SIP, some of them for less than \$0.5 million. MIGA also has proven that it will bring its promised organisational ‘heft’ and legal team to bear to support small businesses in the event of potential and actual claims – indeed, one of the claims it paid out on covered an investment of about \$1 million.

While the lack of World Bank approval requirement should theoretically ease the application process and speed guarantee approval, DeRisk’s anecdotal experience suggests that the process is very difficult to conclude in less than three months. Still, the reduced pricing for SIP guarantees makes this an attractive proposition for small investors and projects.



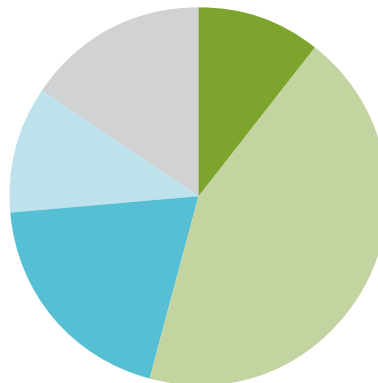
### 3.3 Current MIGA exposure

MIGA had the following gross exposure in June 2008: \$6.48 billion, broken down geographically as shown in Figure 2.

**Figure 2: MIGA gross exposure (June 2008)**

**Gross Exposure (by region)**

Asia and the Pacific	11%
Europe and Central Asia	45%
Latin America and the Caribbean	20%
Middle East and North Africa	11%
Sub-Saharan Africa	16%



As mentioned previously, MIGA's theoretical maximum investment exposure per country is \$700 million. For the countries that most interest the Department for International Development forest review, MIGA's net exposure (after re-insurance) at the end of June 2007 (according to its latest annual report) was:

- Brazil: \$140 million
- DR Congo: \$3 million
- Guyana: NA
- Indonesia: \$50 million
- Liberia: NA.

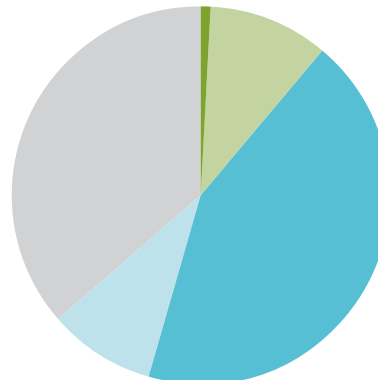
MIGA's gross exposure in agribusiness (under which falls forestry investment) in June 2008 was \$0.8 billion, broken down geographically as shown in Figure 3.

**Figure 3: MIGA gross exposure in agribusiness (June 2008)**

**Gross Exposure (by sector)**

**Agribusiness, Manufacturing and Services**

Asia and the Pacific	1%
Europe and Central Asia	10%
Latin America and the Caribbean	43%
Middle East and North Africa	9%
Sub-Saharan Africa	36%



### 3.4 Expanding MIGA capacity via capital increase

MIGA's current country per-country capacity is set at \$700 million in investment exposure. This capacity is set and agreed by the World Bank's member countries. While it is rare for MIGA to require increased capacity for proposed guarantees (due to methods of extending capacity without increased capital – see the end of this section), it is not unheard of. In order to cover a significant increase in a specific asset class – potentially clustered in a few target countries – an increase in capacity may be required.

However, should it be required, MIGA could request from the World Bank members a capital increase for its balance sheet in order to increase underwriting capacity for REDD+ proposed investment.

#### 3.4.1: Initial feasibility considerations

This type of capacity increase would likely take 6–9 months, and would require the assent and capital of the World Bank member countries.

Recent conversations with MIGA (April 2009) indicated that if the UK Government (or the UK Treasury) were to ask MIGA to officially request an increase, MIGA would be able to act more quickly than the 6–9 months estimated above. This would also increase the likelihood that other member countries would assent and contribute to the increase.

##### 3.4.1.1: Advantages

- Can be done in tandem, and as necessary, with other options as and when capacity is required
- Would not be viewed as a subsidy of investors or projects, rather as capacity-building
- The UK Government is in a strong position to be able to make this option happen.

##### 3.4.1.1: Disadvantage

- Absent subsidies of insurance costs or better facilitation of current processes required; it is unlikely that an increase in capacity would lead to an increase in uptake of MIGA usage or a meaningfully positive impact on investment flows
- MIGA capacity could be directed at non-REDD+ projects.

#### 3.4.2: Extending existing MIGA capacity with existing levers

##### 3.4.2.1: Via re-insurers

MIGA already works with commercial re-insurance markets (eg Lloyd's) to share exposure on certain risks. Re-insurers like Swiss Re, Munich Re and others are often keen to do so, given the low likelihood of a claim on MIGA-insured projects.

The advantage is arrangement exists and operates already. However, the actual increase in, and availability of, capacity is hard to estimate without concrete project data and negotiations with re-insurers. Re-insurers must be willing to take on risk – which is out of MIGA's control.

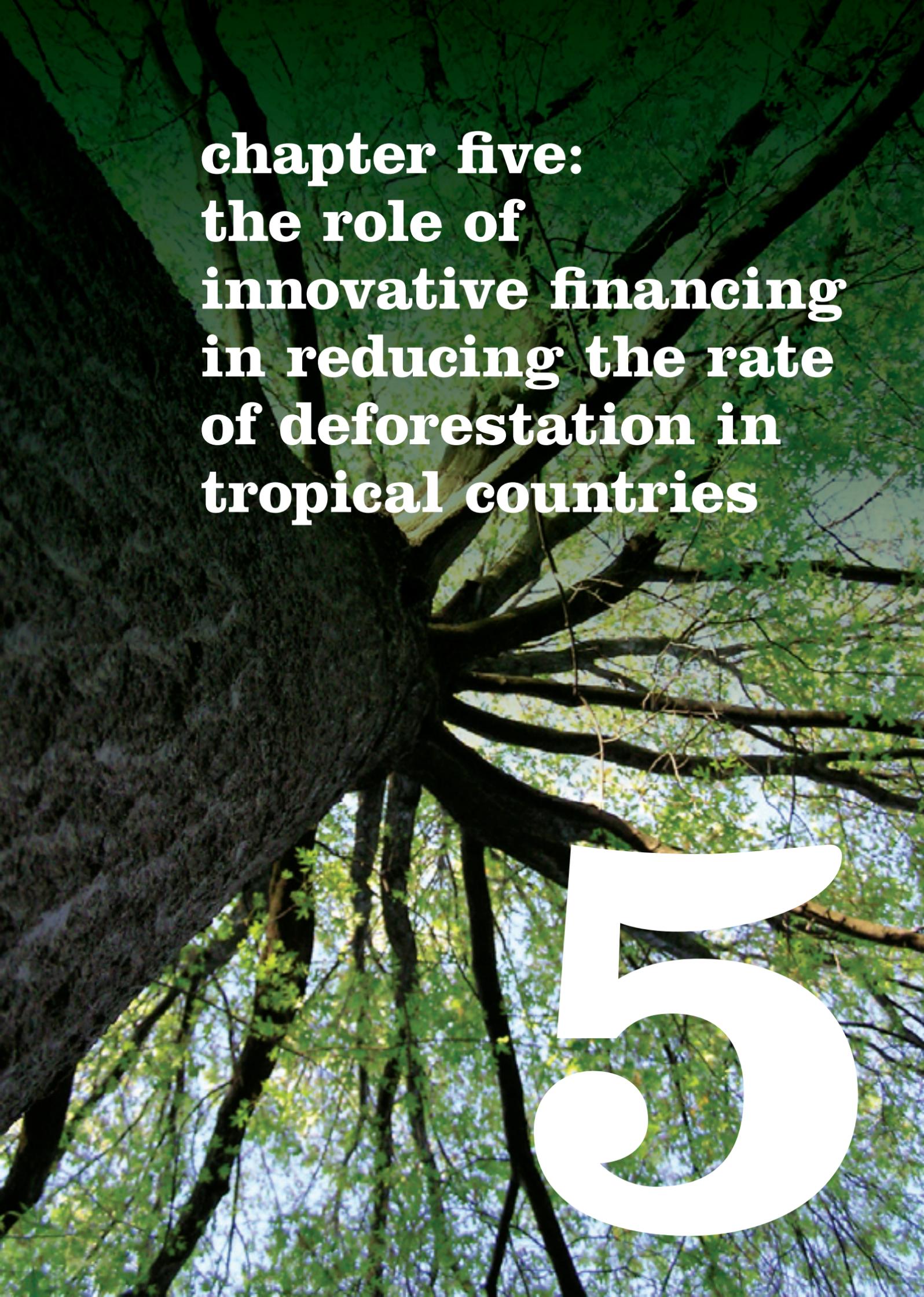


#### 3.4.2.2: Via World Bank member authorisation (without capital increase)

MIGA can request to the World Bank board that existing overall MIGA capacity be made available to increase capacity for specific investments and countries. The advantages are that this would not require a MIGA capital increase, and that MIGA management (not reinsurers) can control the amount of capacity available. However, depending on the level of flow to individual countries, potential increased capacity might not be enough to handle expected REDD+ flows.

This type of capacity increase would likely take 1–3 months to arrange for a specific country, but would have no development cost.





**chapter five:  
the role of  
innovative financing  
in reducing the rate  
of deforestation in  
tropical countries**

**5**

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## highlights

- Innovative financing mechanisms can be applied to achieving REDD, building on experience in other sectors such as health.
- The scale of the funding required, and the concentration on a relatively small number of countries, creates particular challenges.
- Given the global nature of climate change, it is important that innovative financing strategies are chosen that can accommodate the broadest group of nations.
- An international finance facility for forests would represent a valuable tool for the European donors to accelerate the volume of overseas development assistance, but will need to be combined with other solutions, given the need for long-term funding and the importance of countries outside the EU.
- Rainforests have strong emotional appeal to the general population in both developed and developing countries. Harnessing this support through voluntary schemes is likely to play a key role alongside direct multilateral government activities.



## introduction

This chapter explores how innovative financing mechanisms that have been developed to address funding challenges, particularly in the health sector, might be applied to achieve REDD.

There are almost as many definitions of what constitutes innovative finance as there are proposals, but it is perhaps simplest to think of it as any non-traditional means of either providing additional development finance or delivering development finance in a new way. This can be simply put in the context of delivering ‘more money’ or ‘better money’.

During a recent review,<sup>62</sup> the World Bank identified over 100 different ‘innovative financing’ proposals that cover the full spectrum of development activities – from the removal of landmines to climate change.

In this context, it is not surprising that when the issues of raising funds to reduce the pace of deforestation were considered, the concept of Innovative Financing was proposed.

## 1 innovative financing to meet the millennium development goals

The role of innovative finance in the development sphere grew out of the tension between the global commitment to meet the Millennium Development Goals (MDGs) and the underlying fiscal constraints of the leading donor nations. Building on the Monterrey Consensus, the Zedillo Report of 2001 estimated that achieving the MDGs would require an increase of overseas development assistance (ODA) expenditure in the region of \$50 billion per annum for the remaining 14 years.

The UK Government put forward a proposal in February 2003 called the International Finance Facility (IFF). Under this proposal, the funding gap needed to meet the MDGs would be met via a new financing vehicle which would seek to bring forward ODA budgets of the years beyond 2015 to allow an increased expenditure during the years in which the World had committed to achieving the MDGs. The IFF was to be a large-scale funding vehicle that could raise resources for all development needs with a projected funding target of \$400 billion over 11 years.<sup>63</sup>

While concerns were raised regarding the creation of a new ‘global’ institution, with broad-ranging development goals, there was strong interest to apply the concepts of innovative financing to specific development areas. This was particularly strong in the case of global health, where the establishment of the GAVI Alliance in 2000<sup>64</sup> (focused on the provision of immunisation in the poorest 70 countries) and the Global Fund to Fight AIDS, Tuberculosis and Malaria in 2002<sup>65</sup> had succeeded in making the case for both more and better aid resources.

<sup>62</sup> Taskforce on Innovative International Financing for Health Systems

<sup>63</sup> [www.hm-treasury.gov.uk/IFF](http://www.hm-treasury.gov.uk/IFF)

<sup>64</sup> [www.gavialliance.org](http://www.gavialliance.org)

<sup>65</sup> [www.globalfund.org](http://www.globalfund.org)



The first two innovative financing mechanisms were both launched in 2006 – The Air Ticket Solidarity Levy<sup>66</sup> to fund UNITAID<sup>67</sup> (a central purchasing body for the procurement of drugs for AIDS, tuberculosis and malaria) and the International Finance Facility for Immunisation (IFFIm)<sup>68</sup> – a pilot international finance facility established to fund the immunisation programmes of GAVI. These have been broadly successful.

The Air Ticket Solidarity Levy generates approximately €180 million in France and a further €22 million per annum from other participating countries that include Chile, Congo, Côte d'Ivoire, Madagascar, Mauritius, Niger and South Korea.

In the case of IFFIm, six European governments (France, Italy, Norway, Spain, Sweden and the UK) have made pledges totalling approximately \$5.5 billion over 20 years. Since its inaugural issue in November 2006, IFFIm has raised approximately \$2 billion for GAVI Alliance programmes from the international capital markets.

During the past year, donors and the World Bank have agreed to establish a new mechanism (The Advance Market Commitment – AMC)<sup>69</sup> through which donors commit to purchase a specific quantity of a new drug or vaccine if it is produced. This model aims to catalyse investment by the private sector, with confidence that there will be a market for their products, should they successfully deliver. The first AMC has been launched to fund a vaccine for pneumococcal diseases with a \$1.5 billion commitment from Italy, the UK, Canada, Russia, Norway and the Bill & Melinda Gates Foundation.

## 2 applying innovative financing mechanisms to forests

The success of these health-related innovative mechanisms has raised the interest of non-health-related development actors to see if there are ways in which the same principles can be applied to the resolution of other development activities. However, the significant preparation period for any new mechanism (particularly if it involves multiple donors) has led to a lag between the early health-related operations and the development of similar products for other situations.

In some pilot cases, innovative mechanisms are being applied to non-health activities. An example pioneered by the Norwegian Government is results-based programmes. First used in the Health Results Innovation Trust Fund<sup>70</sup>, Norway has used a similar methodology in its support of Brazil's Amazon Fund.

Under a proposal put forward by the EU, governments would use an IFF style instrument to 'bring forward' anticipated revenues from the future sale of the EU Emissions Allowances (EUAs) under the EU Emissions Trading Scheme to create a capital pool today that could be deployed to assist countries build capacity to adopt REDD programmes.

In a proposal put forward by the Prince's Rainforest Project, bonds would also be issued today that, as with the IFF proposal, would be repaid via donor grants in the future.

<sup>66</sup> [www.leadinggroup.org](http://www.leadinggroup.org)

<sup>67</sup> [www.unitaid.eu](http://www.unitaid.eu)

<sup>68</sup> [www.iff-immunisation.org](http://www.iff-immunisation.org)

<sup>69</sup> [www.vaccineamc.org](http://www.vaccineamc.org)

<sup>70</sup> [www.slideshare.net/RikuE/result-based-financng-for-health-health-results-innovation-trust-fund-presentation](http://www.slideshare.net/RikuE/result-based-financng-for-health-health-results-innovation-trust-fund-presentation)



### 3 an IFF for the rainforests

An IFF for the rainforests is conceptually attractive – it would enable the raising of a significant pool of resources that could be dedicated immediately toward reducing deforestation ahead of any formal agreement on REDD being eligible for carbon credits. It also could be a temporary measure, phasing out as other mechanisms such as REDD carbon credits come into play.

There are three broad issues which need to be taken into consideration:

- **Country allocation.** The IFF works best because of having a very diverse set of recipients (70 countries where no single country is in receipt of more than 5% of the net proceeds).
- **High-level conditionality.** Under the Eurostat system of government accounting, governments are able to account for their commitments to IFFIm in the year that they are paid due to a high-level condition – whether a recipient country is in arrears to the IMF. Eurostat made it clear that their ruling was specific to IFFIm and it is not certain that they would accept the same conditionality for an IFF for forests, although given the EU support for the proposal they may be willing to look favourably upon the proposal.
- **Allocation and governance.** In the case of IFFIm there is a clear allocation and governance mechanism via the GAVI Alliance. Such an organisation does not, yet, exist in the case of the forests.

It also should be noted that the IFF structure does not work outside the EU, and so as such would need to be established alongside a vehicle or mechanism that could secure complementary resources from non-EU countries.

The strength of the IFF model is that it has been executed previously, and in this regard could be replicated quickly and efficiently, assuming a group of donors were committed to participating in it.

### 4 results-based financing

As discussed above, Norway has pioneered the results-based financing mechanism for forests via its contribution to the Amazon Fund. Norway's commitment is for \$1 billion spread over 10 years. Brazil must maintain its rate of deforestation at a rate lower than the average of the previous 10 years in order to qualify for the funds, which are paid in 10 annual \$100 million instalments. From a budgetary perspective this is attractive to Norway, as payments only hit the budget in the year that they are paid. From Brazil's perspective it is attractive as it has a clear milestone to reach that is independently verifiable and it can plan and budget confident that if it achieve the milestone, it will receive the funding.

This 'carrot' approach is attractive in situations such as forestry where there is a need for ongoing funds and there is a requirement to secure broad-based public backing both in the donor and recipient country. It encourages transparency and a long-term plan, for which the Brazilians have been rightly commended.



## 5 voluntary contributions

It is significant that in the current very tight government fiscal period, the role of voluntary contributions and innovative ways of securing them is increasing. This was perhaps best demonstrated by the UK 'Red Nose Day' appeal in March 2009, which despite coming in the period of greatest economic stress secured its largest ever fund-raise.

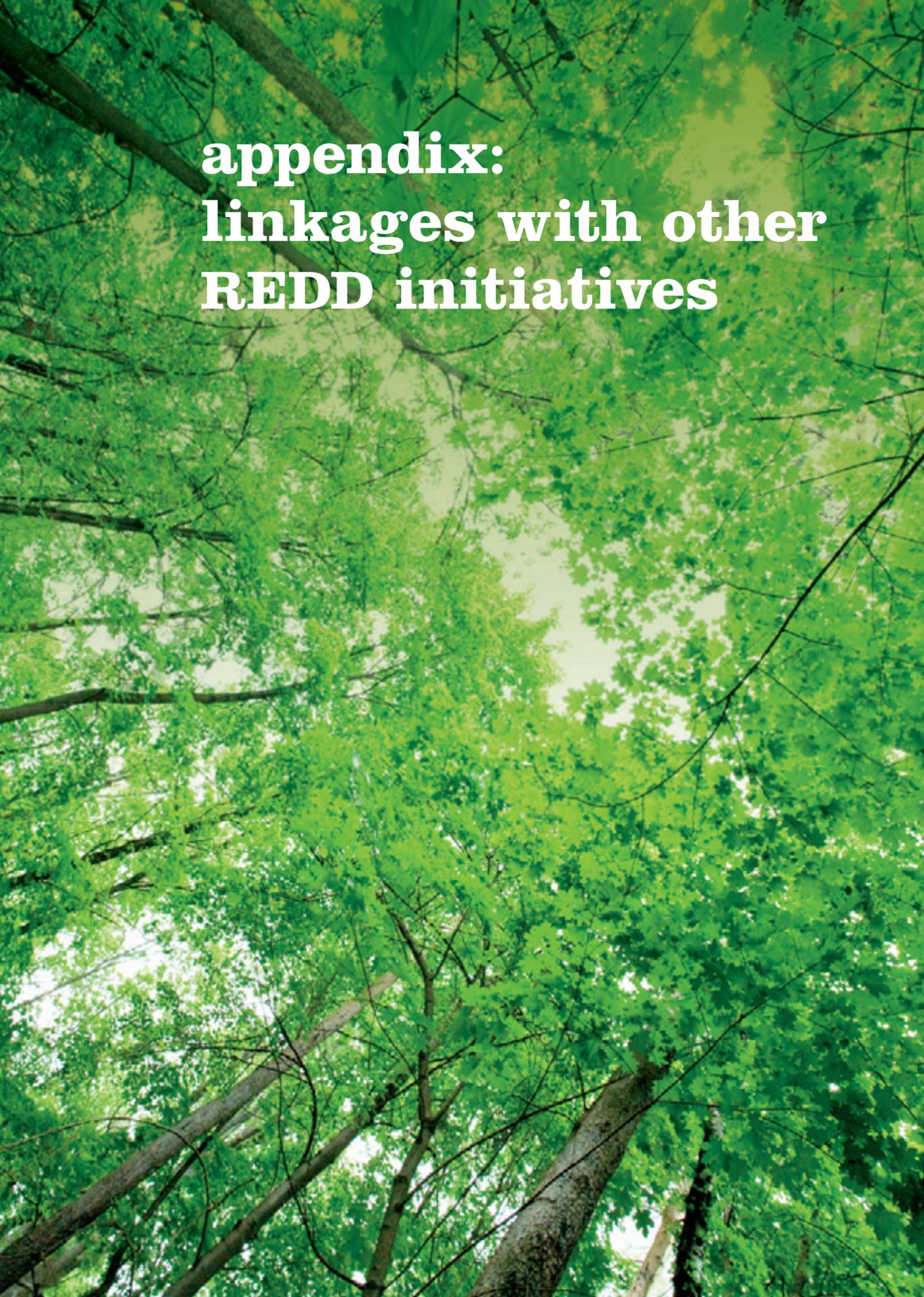
The NGO community is very strong in the area of climate change and particularly with regard to the rainforests. Surveys have consistently shown the rainforests to have a strong appeal with the community at large both within rainforest countries and internationally. In this regard, there is a broad scope to harness international voluntary commitments to augment official resources.

A number of innovative voluntary schemes now exist. These include the UNICEF 'Change for Good' programme with the airlines of the One World Alliance, and the 'Check out for Children' programme with Starwood Hotels (also funding UNICEF).

In the climate change space, many airlines now offer the opportunity to offset the carbon emissions of flights at the time of purchase. A proposal is currently being developed by the Millennium Foundation to extend these options to also making a voluntary contribution to support global health. A comparable programme is also being considered, linked to mobile phone bills.

Given the level of public interest in rainforests, the development of voluntary contribution schemes that parallel the success of similar projects in the global health sector would appear to be of significant value.





**appendix:  
linkages with other  
REDD initiatives**

### About the author:

#### EnviroMarket

Since its formation in 2005, London-based environmental markets boutique EnviroMarket Ltd has played a leading role in the quest for innovative capital market solutions for financing tropical sustainable forestry and conservation. Having worked with both major investors, including IFC and the HSBC Group, and a host of tropical forestry and conservation groups seeking funds, EnviroMarket enjoys a unique insight into the challenges and opportunities that tropical forestry presents to the investment community. Advisory services are provided by co-founders Jon Grayson and Simon Petley

## highlights

- The United Nations REDD (UN-REDD) programme and the World Bank Forest Carbon Partnership Facility (WB-FCPF) are collaborating to support national REDD strategies.
- The World Bank Forest Investment Programme (WB-FIP) is being designed to provide up-front bridge financing for REDD readiness reforms and investment.
- Key aspects of linkages:
  - in its current draft design form, funds raised by the global climate financing mechanism (GCFM) funds would be channelled to the Adaptation Fund (under the Kyoto Protocol), the World Bank Climate Investment Funds (including the FIP for afforestation and reforestation (A/R) and REDD effort) or the EU's Global Climate Change Alliance (GCCA)
  - under the Prince's Rainforest Project (PRP), the Tropical Forests Facility (TFF) would work with governments of rainforest nations to design in-country disbursement mechanisms that meet a set of broad principles around fund transparency, effective governance, multi-stakeholder involvement and clear environmental benefits. The TFF would consider 'outsourcing' capacity-building activities via existing World Bank programmes such as the FCPF and FIP.



# 1 background

In excess of 15 bilateral or multilateral initiatives supporting climate change mitigation and adaptation have been announced since 2005, although most focus more widely than REDD+ (see Table 2). Of the funds focused on REDD+, the majority aim to finance activities that will support future access to carbon markets, through capacity-building and/or pilot projects for REDD carbon.

**Table 2: Current bilateral and multilateral climate funds**

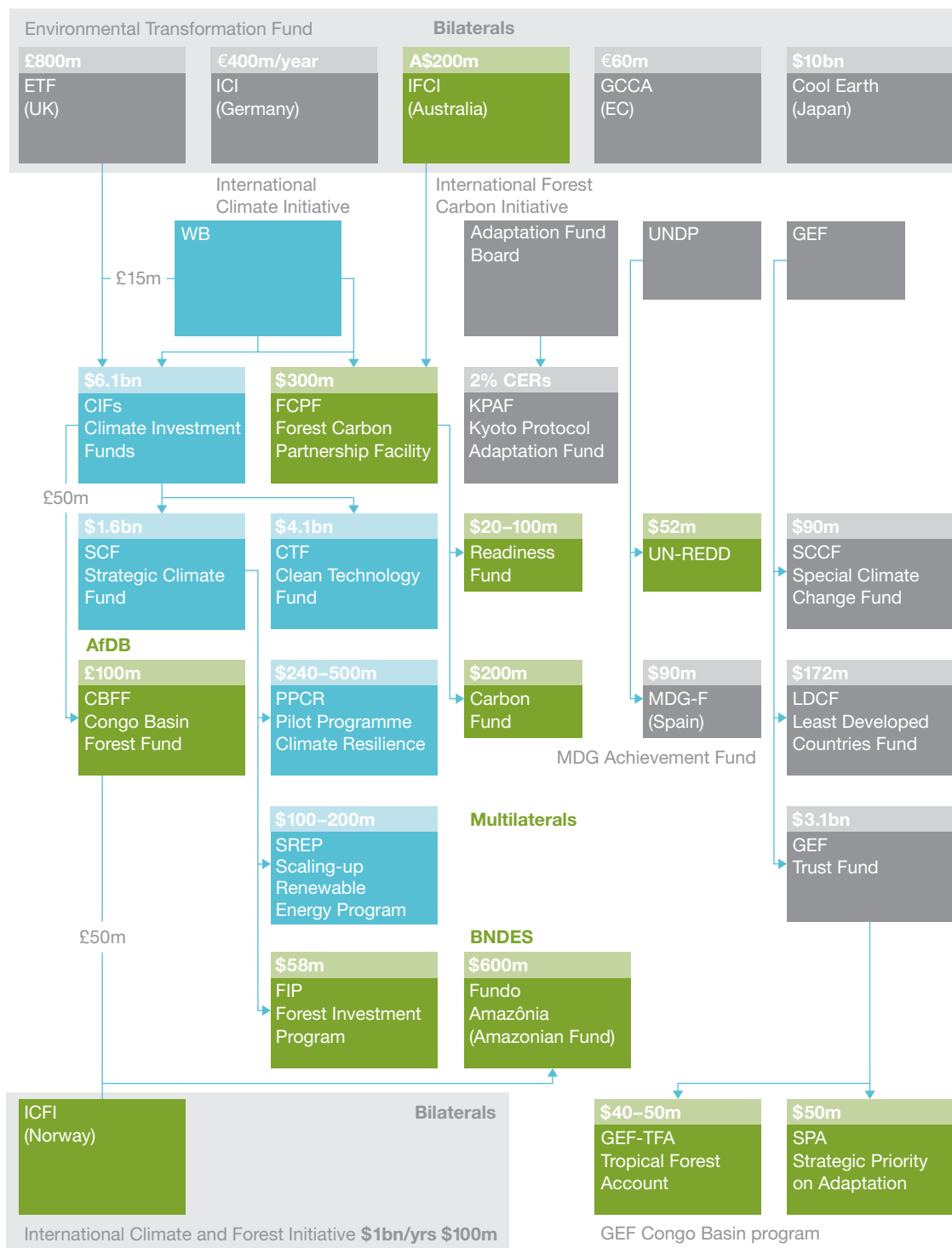
Initiative	Funds		Priority area*			Channel		Administered by
	US\$†	Yr	Ad.	Mit.	REDD	Multi-lateral	Bilateral	
Adaptation Fund	2% CER					•		Fund Board
Clean Technology Fund	4.1 billion			•		•		World Bank
Cool Earth Partnership	10 billion	/5	•	•			•	Japan
Environmental Transformation Fund (ETF) – International [> Climate Investment Funds (CIFs)]	~1.2 billion	/3	•	•			•	UK
FCPF	300 million				•	•		World Bank
Forest Investment Programme (FIP)	58 million				•	•		World Bank
Global Environment Facility (GEF) Trust Fund	3.1 billion		•	•		•		GEF
Global Climate Change Alliance	~80 million		•	•			•	EC
International Climate Initiative	540 million	pa	•	•			•	Germany
International Forest Carbon Initiative (IFCI)	~150 million				•		•	Australia
Least Developed Country (LDC) Fund	\$172 million		•			•		GEF
Millennium Development Goals (MDG) Achievement Fund	\$90 million		•	•		•		UN Development Programme (UNDP)
Pilot Programme for Climate Resilience (PPCR)	<\$500 million		•			•		World Bank
Scaling-Up Renewable Energy	<\$200 million			•		•		World Bank
Special Climate Change Fund	\$90 million		•			•		GEF
Strategic Climate Fund	\$1.6 billion		•	•		•		World Bank
Strategic Priority on Adaptation	\$60 million		•			•		GEF
UN-REDD Programme	\$52 million				•	•		UNDP
International Climate and Forest Initiative (ICFI)	\$2.8 billion	/5			•		•	Norway
Congo Basin Forest Fund (CBFF)	~\$150 million				•	•		UK/Norway

\* Ad., Adaptation – general; Mit., Mitigation; REDD, REDD –mitigation. † Funding figures in US dollars equivalent (forex GBP 0.66, EUR 0.74, USD 1.33); Yr = over x years or per annum.



Figure 1 illustrates the interrelationship between various initiatives that are planned or already underway. Significant quantities of bilateral investment are managed by traditional development finance agencies, primarily the World Bank, GEF and UNDP. Local development banks, such as the African Development Bank and Banco Nacional de Desenvolvimento Econômico e Social (BNDES), are also significant beneficiaries of bilateral funding for REDD+.

**Figure 1: Climate change and REDD initiatives**



Details of each initiative outlined in Figure 1 are provided in sections 5 and 6 below. (Source: adapted from Climatefundsupdate). We assess potential links between the proposals under review and those bilateral and multilateral initiatives that are focusing exclusively on mitigation through investment in REDD+; the UN-REDD Programme, the World Bank Forest Carbon Partnership Facility (WB-FCPF) and the Forest Investment Programme (WB-FIP).

The WB-FCPF, WB-FIP and the UN-REDD programmes are being seen as conduits to channel funding to readiness and potentially a post-2012 regime. The governance structures in both these institutions contain well-tested safeguards to allow for systematic and coherent programmes, allowing for free prior informed consent. The World Bank in particular has been testing green bonds and has the capability of developing auction platforms in the future. There is, however, recognition that the design process will take time.

### 1.1 FCPF and FIP

The World Bank has launched two key initiatives specifically targeting mitigation within the forest and land-use sector – the Forest Carbon Partnership Facility (FCPF) and the Forest Investment Programme (FIP).<sup>71</sup> Both are open to private investors, building a successful model of public–private participation established through earlier vehicles such as the Prototype Carbon Fund.

The FCPF, launched in Bali in 2007, sits at the vanguard of preparations for carbon market financing of REDD+ across the tropics, and has set out to test – albeit on a small scale – the piloting of performance-based incentive payments. The fund is split between a Readiness Mechanism and a Carbon Fund. The latter will purchase REDD carbon credits from REDD projects in qualifying countries.

Under the Readiness Mechanism, countries produce Readiness Plan Idea Notes (R-PINs). To date, the Bank has accepted 37 of these R-PINs, and these countries are now producing Readiness Plans (R-Plans) to propose a framework for REDD in these countries. It should be noted that not all of the FCPF-participating REDD countries will be able to receive funds for the implementation of R-Plans.

The FIP aims to finance a range of forest-related public and private sector activities and address what has been referred to as the ‘missing middle’ – the gap between successful completion of REDD Readiness under the FCPF and the establishment of a commercial track record for REDD carbon transactions. Public sector investments by FIP will target improvements in the general investment climate and build market capacity for the delivery of longer term, sustainable management of forests and land. The FIP sees complementarity, with both the UN-REDD programme and the FCPF, in providing up-front bridge financing for the readiness activities undertaken by these two programmes.

Activities supported by FIP could include:<sup>72</sup>

- institutional capacity, forest governance and information (eg land-use zoning, cadastre and forest-management planning)
- investments in conservation and sustainable management of forests (eg protection against fires, restoration of forests, and improved forest-management practices such as support for certification)

<sup>71</sup> Niles, J. O. (2009) *Driving Private Capital to Conserve Tropical Forests: Current Frameworks & Policy Ideas*. Commissioned by WWF-US for the 2009 Forest Carbon Finance Summit.

<sup>72</sup> See CIF (Second Design Meeting on the Forest Investment Program): FIP Complementarity with FCPF and UN-REDD, March 2009 CIF/DMFIP.2/Inf.3; and Illustrative Examples of Potential Investments Under the FIP, CIF/DMFIP.2/Inf.5



- investments outside the forest sector to release the pressure on forests (eg shifts by agribusiness or improvements in agricultural productivity).

Co-investments with the private sector are likely to be positioned as pilot or demonstration projects in the first instance.

## 1.2 UN UN-REDD programme

The UN-REDD programme is aimed at preparing countries for national REDD strategies and developing linkages for a REDD mechanism with a broader UN Framework Convention on Climate Change (UNFCCC) framework. In the first instance – the ‘Quick Start Phase’ – this aims to demonstrate early results by providing access to tailored financial and technical assistance in key tropical countries.

The programme will formulate national joint programmes in the pilot countries – a set of activities contained in a common work plan and related budget involving two or more participating UN organisations and (sub-)national partners. The programme supports countries in putting in place national REDD programmes.

UN-REDD has maintained a close rapport with the FCPF throughout its development, and a cooperative agreement has been developed, detailing the mechanics of their collaboration, which is now going through their respective governing structures.

# 2 interaction

## 2.1 Brief critique of existing REDD+ initiatives

Most of the current bilateral and multilateral climate funds have sunset clauses that will prevent them from disbursing funds beyond 2012. Funding is directed towards the development methodologies and frameworks for REDD, capacity-building and other catalytic interventions – very little has so far been allocated towards up-front investment in actual forestry projects.

Analysis of the external financial sources allocated to REDD<sup>73</sup> reveals major funding shortfalls. Following the discussions at the FIP second design meeting in March 2009, a number of respondents suggested that FIP should be positioned to help inform the development of a second ‘implementation’ phase of the FCPF (ie ‘post-readiness’).<sup>74</sup>

Both the PRP and GCFM propose allocating front-loaded funds to third-party agencies or initiatives. In assessing the overall effectiveness of each proposal, the performance of those entities will be paramount.

## 2.2 EU-GCFM and existing REDD+ initiatives

The GCFM has been proposed in the context of the EC’s Global Climate Change Alliance (GCCA), and is being explored in collaboration with the World Bank and the European Investment Bank (EIB).

<sup>73</sup> See, in particular, Second Design Meeting on the FIP documents prepared for 5–6 March 2009.

<sup>74</sup> See FIP Comments Received on Second Design Meeting: <http://go.worldbank.org/K6B7GYRGW0>.



The GCFM is conceived as a temporary bridging facility to deliver substantial funding while a new architecture for climate financing is being built for the post-2012 period. Funds raised would complement existing initiatives and predominantly be allocated on the basis of their comparative advantage.

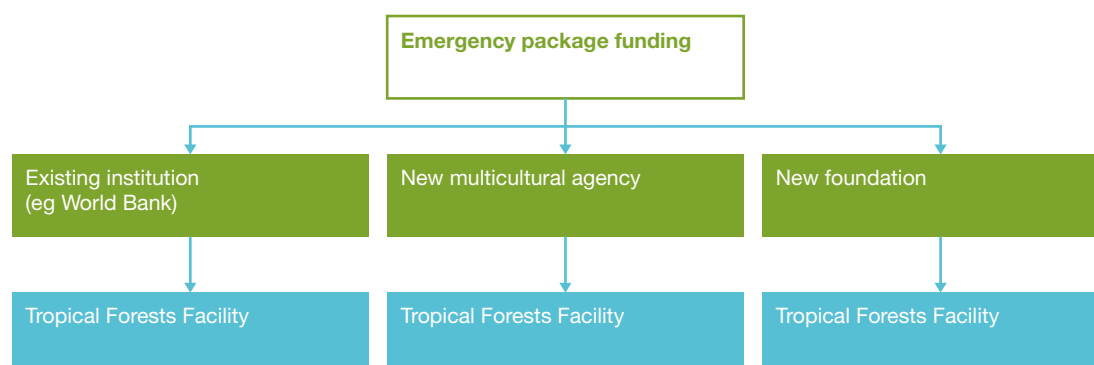
To this end, the GCFM has adopted various assessment criteria to determine this allocation, such as efficiency, effectiveness, coordination and coherence, support for approaches that integrate climate change into national planning processes and budget, the Paris Declaration principles, as well as absorption capacity.

In the first instance GCFM funds could be channelled to initiatives such as the Adaptation Fund, the World Bank's Climate Investment Funds (eg FIP), or the GCCA.

### 2.3 PRP and existing REDD+ initiatives

The PRP has proposed establishing a new agency – the Tropical Forests Facility (TFF) – to coordinate disbursement of funds. The TFF would act as a clearing house/ coordinating body for the growing range of REDD funds being created. The PRP has proposed housing the TFF within an existing institution such as the World Bank, as a new multilateral agency, or as a new foundation/charity – with the latter being the favoured option (subject to government backing) (see Figure 2).

**Figure 2: Potential institutional home for the TFF.**



Examples:

- Strategic Climate Funds
- Forest Carbon Partnership Facility (FCPF)
- Global Environment Facility (GEF)
- Montreal Protocol Multilateral Fund
- World Trade Organisation (WTO)
- Global Funds for AIDS, TB & Malaria
- Global Alliance for Vaccines & Immunisation (GAVI)

Source: PRP Consultation Document (March 2009), Figure 21

The TFF may be able to partner with existing initiatives, such as the FCPF and the FIP, leaving these to focus on capacity-building, with TFF taking on the role of funding the performance-related payments.

Whatever the final solution, there is growing awareness of the need for closer integration between existing REDD programmes in order to avoid unnecessary overlap, to leverage economies of scale, and to improve transparency and governance.



## 3 conclusion

Both the PRP and GCFM proposals involve the transfer of front-loaded funds to third parties for the delivery of REDD+ activities. Theoretically, these additional funds are required, but, in practice, it is difficult to gauge how effectively and/or quickly they could actually be deployed.

The PRP addresses an acknowledged gap in carbon-market funding for REDD+, although it does not generate REDD carbon credits. The new TFF has been proposed to act as the global coordinator of capital for REDD+ before carbon markets achieve critical mass. The TFF will negotiate five-year ecosystem service contracts with national implementation agencies, with payments made on a performance basis.

To date, the Amazon Fund is the only entity pursuing REDD+ outside the carbon market, with Norway being the only major contributor to the Amazon Fund. The PRP has suggested BNDES as model for the kind of implementation agency they envisage being contracted by the TFF. On this basis alone, the strongest link for PRP would appear to be the Amazon Fund.

The GCFM responds to the shortfall in funds for adaptation, and will disburse to existing adaptation and mitigation initiatives according to its internal assessment, covering aspects such as efficiency, effectiveness, coordination and coherence, as well as absorption capacity. In addition to the Global Climate Change Alliance (GCCA), the GCFM will collaborate with the World Bank and the EIB, via initiatives such as the World Bank Pilot Programme for Climate Resilience.

## 4 appendix 1

### 4.1 Funding gaps

Analysis of the external financial sources allocated to REDD<sup>75</sup> reveals major funding shortfalls. Existing funding is directed primarily at developing the method and frameworks for REDD, capacity-building and other catalytic interventions – but very little has been directed towards the up-front investment to achieve the carbon-emission reduction outcomes that will form the basis for carbon payments.

The limited levels of available funds has led to the available funding being focused on pilot projects in individual counties or on enabling the transition to a REDD mechanism under the UNFCCC.

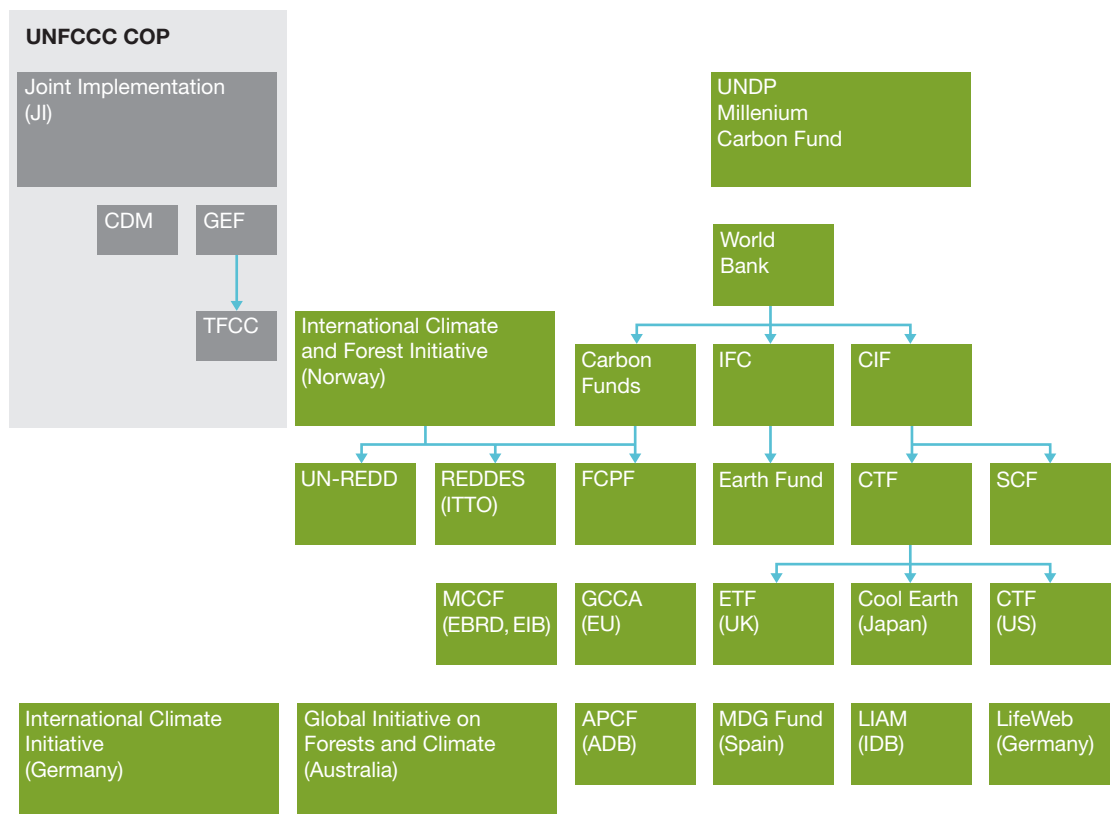
### 4.2 Links with UNFCCC

Only a few of the initiatives announced to date work directly under the auspices of the UNFCCC. Most funds have not yet clarified their relationship to the UNFCCC, relying instead on rather vague commitments of working to support the goals of the Convention. So far, only the Global Environment Facility (GEF) Trust Fund, the Clean Development Mechanism (CDM) and Joint Implementation (JI) are officially mandated to the UNFCCC.

<sup>75</sup> See in particular Second Design Meeting on the FIP documents prepared for 5–6 March 2009.



Figure 4: Mitigation funds and their alignment with the UNFCCC



Source: WWF-US (March 2009) Discussion Paper, *New Mechanisms for Financing Mitigation*.

## 5 appendix 2: REDD (and climate) initiatives overview

### 5.1 The UN-REDD Programme Fund

This fund is a 'quick-start action project' to demonstrate early REDD results. The main idea is that UN-REDD assists tropical forest producer countries in developing and implementing national REDD strategies through an international support programme headed by the 'appropriate' international body selected by the recipient country.

- A collaborative initiative of the Food and Agriculture Organization (FAO), the United Nations Development Programme (UNDP), and the United Nations Environment Programme (UNEP).
- Aims to contribute to the development of capacity for implementing REDD and to support the international dialogue for the inclusion of a REDD mechanism in a post-2012 climate regime. UN-REDD will support:<sup>76</sup>
  - development and testing of standards, methods and guidelines for assessment, monitoring, accounting, reporting and verifying
  - knowledge sharing between countries
  - other global functions (eg REDD awareness, data availability and interpretation, co-benefits).

<sup>76</sup> [www.slideshare.net/rightsandclimate/the-unredd-initiative-presentation](http://www.slideshare.net/rightsandclimate/the-unredd-initiative-presentation).



- The UN-REDD Programme will initially run until March 2010.
- Total funding of \$52.2 million,<sup>77</sup> with \$18 million approved so far (March 2009)<sup>78</sup> (one-third of the sum available to UN-REDD).
- A 'Quick Start' phase (\$35 million) will support nine pilot countries in Africa, Asia and Latin America: Democratic Republic of Congo, Indonesia, Papua New Guinea, Tanzania and Vietnam; also Bolivia, Panama, Paraguay and Zambia.
- Activities will include developing the capacity to baseline levels, monitoring programmes, consultative processes for engaging indigenous peoples and civil society, links to other benefits such as biodiversity, and strengthening the capacity of national institutions.
- The Policy Board includes members of indigenous peoples groups and civil society, as well as donors and many other interested parties, such as the World Bank's Forest Carbon Partnership Facility (FCPF), the UNFCCC secretariat and the Global Environment Facility secretariat.
- To ensure complementarity with other ongoing/planned REDD initiatives, the UN-REDD Programme is cooperating closely with the World Bank FCPF, the Global Environment Facility (GEF) Tropical Forest Account, and other initiatives such as Australia's International Forest Carbon Initiative and the Collaborative Partnership on Forests.
- The programme will also look at how payments for emission reductions could be structured, and will evaluate the various financial and insurance options needed to cover carbon losses due to events such as fire and pest attack.
- By June 2009 it is expected that, as a result of the various capacity-building measures, National Readiness Plans will have been drawn up for participating countries, so that if a formal REDD agreement is made by nations in Copenhagen, countries will be 'ready for implementation'.<sup>79</sup>

## 5.2 Norway's International Climate and Forest Initiative (ICFI)

At Bali, the Norwegian Government declared its willingness to provide up to \$500 million annually (\$2.8 billion over five years) towards REDD efforts in developing countries. The use of bilateral channels will be limited, with multilateral, multi-donor approaches preferred where possible.

The Initiative has the following goals:

- to work towards the inclusion of emissions from deforestation and forest degradation in a new international climate regime
- to take early action to achieve cost-effective and verifiable reductions in greenhouse gas emissions
- to promote the conservation of natural forests to maintain their carbon storage capacity.

So far in 2009, the following commitments and programmes have been established:<sup>80</sup>

- multilateral channels (prime source of funding)
- UN-REDD \$50 million
- WB-FCPF \$40 million (contributed) and WB-FIP \$50 million ('possible' support)
- regional multilateral development banks (MDBs): Congo Basin Forest Fund (SBFF), under the AfDB, Norway, has committed NOK 500 million (£50 million) for the period 2008–2010

<sup>77</sup> [www.undp.org/mdtf/UN-REDD/overview.shtml](http://www.undp.org/mdtf/UN-REDD/overview.shtml).

<sup>78</sup> [www.un-redd.net/18MillionDollarApprovedUnderUNREDDProgramme/tabid/739/Default.aspx](http://www.un-redd.net/18MillionDollarApprovedUnderUNREDDProgramme/tabid/739/Default.aspx).

<sup>79</sup> [www.un-redd.net/UNREDDProgramme/tabid/541/Default.aspx](http://www.un-redd.net/UNREDDProgramme/tabid/541/Default.aspx).

<sup>80</sup> Full details of the ICFI are available at: [www.norad.no](http://www.norad.no) or [www.regjeringen.no](http://www.regjeringen.no).



- two bilateral programmes:
  - Brazil's Amazon Fund: NOK 700 million for 2008 and 2009 (further contributions will be linked to performance in terms of reduced deforestation rates)
  - Tanzania: NOK 500 million (~\$80 million) towards the development and implementation of a national REDD strategy
- allocations to the Global Environment Facility (GEF) will be considered if it sets up relevant programmes
- The International Tropical Timber Organization (ITTO) REDDES programme
  - offered limited support.

### 5.3 Australia's International Forest Carbon Initiative (IFCI)

This is a A\$200 million (USD \$130 million) initiative to support international efforts on REDD through the UNFCCC.<sup>81</sup>

- Jointly administered by the Australian Department of Climate Change and AusAID.
- Aims to demonstrate that REDD can be part of an equitable and effective post-2012 global climate change agreement.
- A central element of the Initiative is taking practical action on REDD through collaborative Forest Carbon Partnerships with Indonesia and Papua New Guinea.
- These partnerships demonstrate how the technical and policy hurdles to REDD might be addressed and provide lessons learned for input to REDD negotiations under the UNFCCC.
- Activities will include:
  - increasing international forest carbon monitoring and accounting capacity – through advanced remote sensing
  - undertaking practical demonstration activities
  - supporting international efforts by supporting WB-FCPF and FIP.
- Programmes to date have included:
  - Indonesia–Australia Forest Carbon Partnership: A\$30 million for the Kalimantan Forests and Climate Partnership and a A\$10 million bilateral package of support for Indonesia on forests and climate
  - Roadmap for Access to International Carbon Markets (with Indonesia)
  - Kalimantan Forests and Climate Partnership – A\$30 million, trialing an innovative, market-oriented approach to financing and implementing measures for REDD; the focus is on an area of more than 100,000ha of degraded and forested peat land
  - a second REDD demonstration activity (November 2008)
  - a bilateral package of support to Indonesia on forests and climate – A\$10 million
  - Papua New Guinea–Australia Forest Carbon Partnership – A\$3 million in initial funding, which includes technical, scientific and analytical support
  - partnership with the Clinton Climate Initiative on carbon monitoring (strategic partnership)
  - World Bank's Forest Carbon Partnership Facility (FCPF) – A\$11.7 million
  - World Bank's Forest Investment Program (FIP) – A\$10 million
  - Asia Pacific Forestry Skills and Capacity Building Program – A\$15.8 million; funding of A\$2.3 million under the first phase of the programme is supporting projects in Indonesia and Papua New Guinea, and other regional countries such as Vietnam and Fiji
  - research partnership on REDD – a A\$3 million research partnership with Center for International Forestry Research (CIFOR)
  - development of concept models for demonstration activities – up to A\$1.5 million.

<sup>81</sup> [www.climatechange.gov.au/international/publications/pubs/ifci\\_factsheet\\_1.pdf](http://www.climatechange.gov.au/international/publications/pubs/ifci_factsheet_1.pdf) and [www.climatechange.gov.au/international/publications/fs-ifci.html](http://www.climatechange.gov.au/international/publications/fs-ifci.html).



## 5.4 Collaborative Partnership on Forests

The Collaborative Partnership on Forests (CPF) is a voluntary arrangement between 14 international organisations and secretariats that have substantial programmes on forests:

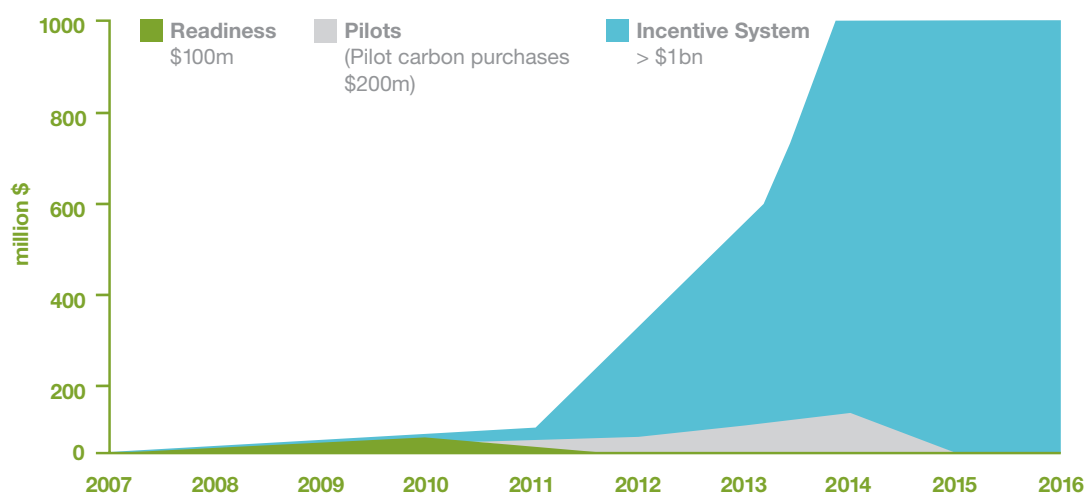
- United Nations Forum on Forests (UNFF)
- United Nations Development Programme (UNDP)
- United Nations Environment Programme (UNEP)
- United Nations Convention to Combat Desertification (UNCCD)
- UN Framework Convention on Climate Change (UNFCCC)
- Convention on Biological Diversity
- Food and Agriculture Organization (FAO)
- International Union for Conservation of Nature
- Center for International Forestry Research (CIFOR)
- The International Tropical Timber Organization (ITTO)
- World Bank
- Global Environment Facility (GEF)
- International Council for Research in Agroforestry (ICRAF)
- International Union of Forest Research Organizations (IUFRO).

## 5.5 Forest Carbon Partnership Facility (FCPF) (World Bank administered)

The FCPF assists developing countries in their efforts to reduce emissions from deforestation and forest degradation. It aims to build confidence in REDD investments by establishing early links between key rainforest countries and potential financiers, so that emissions reductions achieved by large-scale demonstration activities may be certified and the associated credits sold.

- A framework for piloting activities to reduce emissions from deforestation and forest degradation.
- In excess of 40 developing countries have asked to become part of the FCPF, forcing it to expand its expected number of developing country participants from the original 20 to 37.<sup>82</sup>

Figure 5: FCPF readiness



Source: World Bank<sup>83</sup>

<sup>82</sup> <http://go.worldbank.org/TG4HTMHU90>.

<sup>83</sup> [http://wbcarbonfinance.org/docs/FCPF\\_10-19-07\\_English.ppt](http://wbcarbonfinance.org/docs/FCPF_10-19-07_English.ppt).



- So far, 25 developing countries have been selected and accepted into the facility:
  - ten in Africa (Cameroon, Democratic Republic of Congo, Ethiopia, Gabon, Ghana, Kenya, Liberia, Madagascar, Republic of Congo and Uganda)
  - ten in Latin America (Argentina, Bolivia, Colombia, Costa Rica, Guyana, Mexico, Nicaragua, Panama, Paraguay and Peru)
  - five in Asia and the South Pacific (Lao PDR, Nepal, Papua New Guinea, Vanuatu and Vietnam).

A further five countries are in the process of being selected, bringing the total to 30.

- The FCPF is working with 11 industrialised countries and one NGO in an innovative partnership and international financing mechanism.
  - countries: Australia, Finland, France Germany, Japan, The Netherlands, Norway, Spain, Switzerland, the UK and the USA
  - NGO: The Nature Conservancy
  - together the above have pledged about \$169 million to the FCPF (for the Readiness and Carbon Funds combined)
  - further contributions from the public and private sectors are expected
  - additional pledges have been given by Norway (\$1 million) and Switzerland (CHF 1 million) to help provide readiness funding for additional developing countries that want to participate.
- The World Bank acts as a secretariat for the FCPF. The facility became operational on 25 June 2008.
- The World Bank will underwrite the \$2.3 million start-up expenses for the facility.
- Countries will receive grant support as they build their capacity to tap into future systems of positive incentives for REDD, in particular by establishing emissions reference levels, adopting REDD strategies and designing monitoring systems.
- The FCPF Participants Committee includes indigenous communities. The committee is made up of ten donor and carbon fund participants and ten developing country participants.
- The committee has approved a Capacity Building Programme for forest-dependent indigenous peoples and other forest dwellers. This is a \$1 million 'small grants' programme for building effective links with forest-dependent indigenous peoples and other forest-dweller communities and REDD, through the FCPF.
- The committee is assisted in its selection process by an independent Technical Advisory Panel composed of experts in different technical fields and different regions of the world.
- The FCPF builds on experience from the BioCarbon Fund (BioCF) but scales up to the national level in its approach in order to address concerns about leakage from individual projects.
- In some of the participating countries, the FCPF will also help reduce the rate of deforestation by providing an incentive per tonne of carbon dioxide emissions reduced through specific Emission Reductions Programmes targeting the drivers of deforestation and forest degradation.

The FCPF has two components: a Readiness Fund and a Carbon Fund.

- The Readiness Fund will assist up to 37 interested developing countries to prepare themselves to participate in a future large-scale system for positive incentives for REDD. This will include:
  - preparing a national REDD strategy (taking into account country priorities and constraints)
  - technical assistance in calculating opportunity costs of possible REDD interventions
  - establishing a reference scenario (eg a credible estimate of the country's national forest carbon stocks and sources of forest emissions) and (possibly) modelling of future emissions
  - establishing a monitoring system for emissions and emission reductions.



- The target for the Readiness Fund has been increased to \$150 million from \$100 million, allowing for contributions of at least \$5 million per participant. With firm capital already raised of \$107 million, there is a funding gap of \$43 million to achieve the target.
- A 'preparation grant' of \$200,000 is offered initially, with a 'full readiness grant' of \$3.6 million.
- A few countries that have successfully participated in the Readiness Mechanism may be selected, on a voluntary basis, to participate in the Carbon Finance Mechanism, through which the FCPF will pilot incentive payments for REDD policies and measures in approximately five developing countries.
- The Carbon Fund will remunerate the selected countries, in accordance with negotiated contracts, for verifiably reducing emissions by more than in the reference scenario. Payments will only be made to countries that achieve measurable and verifiable emission reductions.
- Emission reductions due to REDD will not be uniform or standard, but will have a range of different characteristics. In addition to climate change mitigation benefits, a range of co-benefits may arise for local communities and for the environment:
  - sustainable forest management
  - economic activities based on sustainable use of the forest
  - surveys of relevant areas (economic and ecological data), land-use planning and regulation
  - conservation and sustainable use of biodiversity
  - restoration of deforested areas.
- Up to 20% of the funding available may be used to develop monitoring and control systems for use in other ecosystems (eg other types of forest) and in other tropical countries.

## 5.6 Climate Investment Funds (CIFs) (World Bank administered)

The Climate Investment Funds (CIFs) were officially launched at the G8 Summit in Hokkaido, with the commitment to the funds from G8 donors currently standing at over \$6 billion.

- Two international multi-donor investment instruments (trust funds) exist under the CIF:<sup>84</sup>
  - Clean Technology Fund (CTF) (see Section 6.7)
  - Strategic Climate Fund (SCF) (see Section 6.8).
- Interim, scaled-up funding will be provided through MDBs, who will provide additional grants and concessional financing to developing countries to address climate-change issues. The MDBs will include the Inter-American Development Bank (IDB) and their counterparts in Asia, Africa and Europe. Funds will be administered through the MDBs and the World Bank Group.
- The funds were approved by the World Bank Board of Directors on 1 July 2008.
- Over \$6.14 billion has been pledged (26 September 2008) by ten countries (Australia, France, Germany, Japan, The Netherlands, Norway, Sweden, Switzerland, UK and US).<sup>85</sup>
  - The UK intends to make available £800 million (~\$1.2 billion) from the International Environmental Transformation Fund (ETF).
- Decision-making committees comprise individuals from both donor and recipient countries, on a fifty-fifty basis.
- Funds will be disbursed as grants, highly concessional loans and/or risk mitigation instruments.

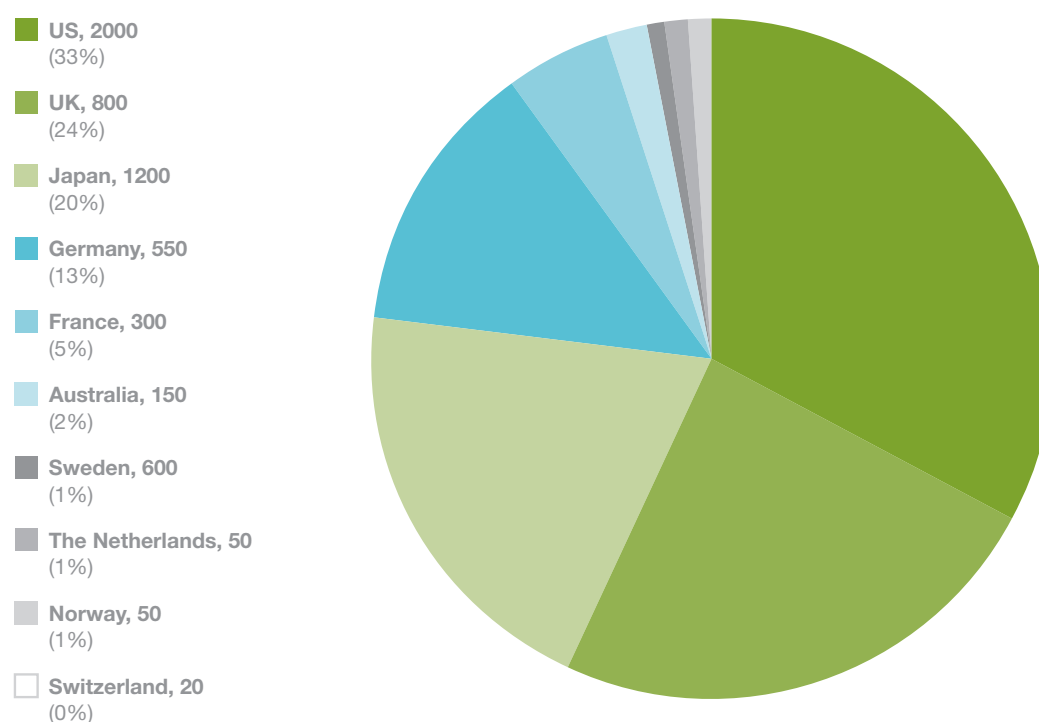
<sup>84</sup> Main link: [www.worldbank.org/cif](http://www.worldbank.org/cif).

<sup>85</sup> Source: <http://go.worldbank.org/36H73DPMV0>.



- All funds and programmes under the CIF have a sunset clause in order not to prejudice UNFCCC deliberations regarding the future of the climate-change regime (ie the primacy of the UNFCCC is recognised).
- Recipient/developing countries will have an equal voice in the governance structure. Decisions on the use of funds will be made by consensus.
- An annual Partnership Forum (first held in October 2008) provides input on the strategic directions, results and impacts of the CIF. The forum is a broad-based meeting of stakeholders, including donor and recipient countries, MDBs, the United Nations and its related agencies, the Global Environment Facility and UNFCCC.

**Figure 6: CIF pledges (US dollars, September 2008). Excludes additional co-financing (bilateral funding) for FRA \$200 million and GER \$74 million**



Source: World Bank data.<sup>86</sup>

### 5.7 Clean Technology Fund (CTF) (under CIF; World Bank administered)

- The CTF will “invest in projects and programs in developing countries that contribute to the demonstration, deployment, and transfer of low-carbon technologies”.
- Currently, \$4.15 billion of the target \$6.3 billion has been pledged for the CTF. \$1.25 billion of the existing fund has not yet been allocated.<sup>87</sup>

### 5.8 Strategic Climate Fund (SCF) (under CIF; World Bank administered)

- The SCF will be broader and more flexible in scope than the CTF and “will serve as an overarching fund for various programs to test innovative approaches to climate change”.
- Includes three programmes: the Pilot Program for Climate Resilience (PPCR), Scaling-up Renewable Energy (SREP) and the Forest Investment Program (FIP) (see Section 6.9).

<sup>86</sup> <http://go.worldbank.org/36H73DPMV0>.

<sup>87</sup> [www.climatefundsupdate.org/listing/clean-technology-fund](http://www.climatefundsupdate.org/listing/clean-technology-fund).



- As of January 2009, nearly \$1.6 billion of the target \$6.3 billion has been pledged to the SCF. To date, \$1.25 billion is still unallocated (see Table 2).<sup>88</sup> The funding is classified as official development assistance (ODA). *Note:* All CIF design documents stipulate that funding should be additional to existing ODA, but many G8 donors are likely to consider it part of existing ODA.

**Table 3: Pledges to the SCF (millions of US dollars)**

	FIP	PPCR	SREP	Unallocated	Total SCF
Australia	7	26			33
Canada		67			67
Germany		65			65
Japan		50		150	200
The Netherlands			50		50
Norway	50				50
Switzerland			20 [25]		20
UK	[147]*		[25]	1,101	1,101
<b>Total</b>	<b>57 [204]</b>	<b>208</b>	<b>70 [100]</b>	<b>1,251</b>	<b>1,585</b>

\*UK Capital contribution to FIP of GBP 100m

- The first programme under this fund, the Pilot Program for Climate Resilience (PPCR), is a pilot aimed at increasing climate resilience in developing countries. By November 2008, \$240 million had been pledged to the PPCR.<sup>89</sup> The World Bank estimates the fund could reach as much as \$500 million. The UK has not yet clarified how much of the c. \$1 billion will go to PPCR.
- A Forest Investment Program (FIP) and a Scaling-Up Renewable Energy Program (SREP) will be created in 2009. At January 2009, pledges for SREP included \$50 million from The Netherlands, £25 million from the UK and \$25 million from Switzerland. A target funding level of \$250 million and more is sought.

## 5.9 Forest Investment Programme (FIP) (under CIF SCF; World Bank administered)

The aim of the FIP is to scale up activities aimed at reducing emissions from deforestation and forest degradation in developing countries. This programme is part of the broader Climate Investment Funds (CIFs) managed by the World Bank.

- Aims to close the investment gap between 'readiness (FCPF Readiness Fund, UN-REDD) and performance-based payments for emissions reductions (FCPF, Voluntary Markets, Post-Kyoto Mechanism and non-market incentives).
- There is the 'Potsdam Mandate' to establish a FIP, within the SCF framework, by the end of 2008.
- \$58 million was pledged during the CIF pledging meeting on 26 September 2008. Two donors supported this programme: Australia (with \$7 million) and Norway (\$50 million).


<sup>88</sup> [www.climatefundsupdate.org/listing/special-climate-change-fund](http://www.climatefundsupdate.org/listing/special-climate-change-fund).

<sup>89</sup> [www.climatefundsupdate.org/listing/pilot-program-for-climate-resilience](http://www.climatefundsupdate.org/listing/pilot-program-for-climate-resilience).



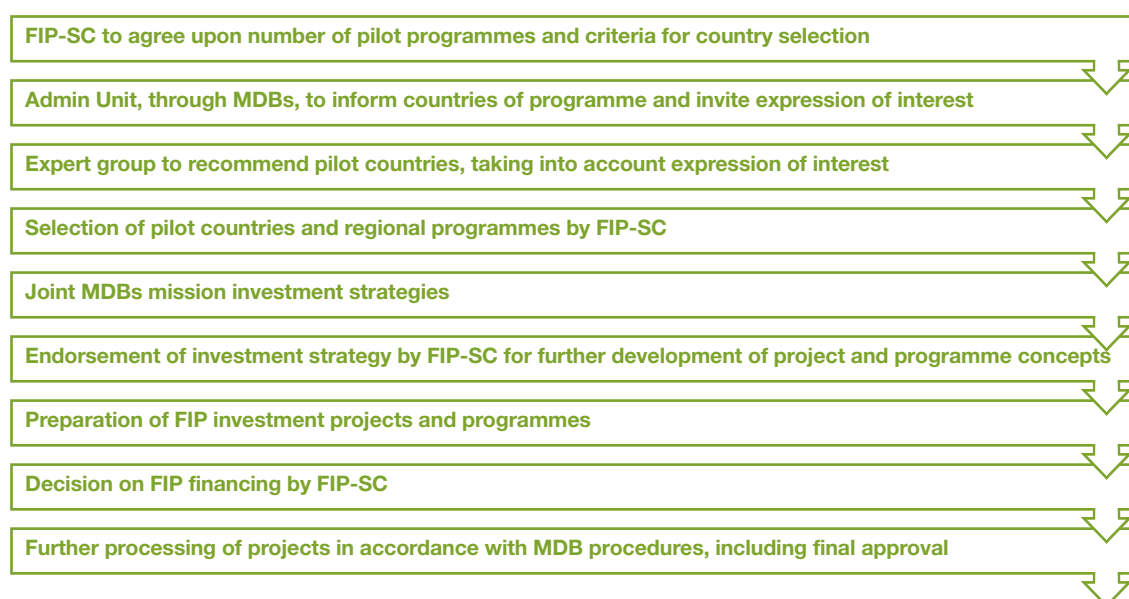
- The eligibility of a country for the FIP will be based on its eligibility for ODA (OECD Development Assistance Committee (OECD/DAC) guidelines) and it having an active MDB country programme.<sup>90</sup>
- The FIP aims to mobilise significantly increased funds to:
  - reduce emissions from deforestation and forest degradation
  - promote sustainable forest management
  - protect carbon reservoirs.
- The FIP has been developed based on a broad and transparent consultation process, taking into account country-led priority strategies and building on complementarities between existing forest initiatives.
- The FIP will (potentially) look to finance investments in (see Figure 6):
  - institutional capacity, forest governance and information
  - increasing forest benefit yields by forest resource investments
  - investments outside the forests sector.

### Box 1: The role of the FIP

Readiness (FCPF Readiness Fund, UN-REDD)	Investment needs	Payments for emission reductions (FCPF, Voluntary Markets, Post-Kyoto Mechanism, non-market incentives)
<ul style="list-style-type: none"> <li>• Emissions reference scenario</li> <li>• Forest carbon inventory</li> <li>• Stakeholder consultations</li> <li>• Identification of the drivers of deforestation/degradation</li> <li>• Elements of a national strategy to reduce emissions from deforestation and degradation</li> <li>• Development of monitoring and verification system</li> <li>• Capacity-building</li> </ul>	Closing the gap Through FIP? 	Performance-based payments (against measured reductions in emissions from deforestation or degradation)

Source: *Considerations for FIP Design*, – First Design Meeting, October 2008<sup>91</sup>

**Figure 6: The FIP investment strategy. (Source: Revised draft design document for the Forest Investment Program, April 2009; CIF/DMFIP.3/2.)**



<sup>90</sup> [www.climatefundsupdate.org/listing/forest-investment-program](http://www.climatefundsupdate.org/listing/forest-investment-program).

<sup>91</sup> [http://siteresources.worldbank.org/INTCC/Resources/Considerations\\_for\\_FIP\\_Design\\_Dieterle.pdf](http://siteresources.worldbank.org/INTCC/Resources/Considerations_for_FIP_Design_Dieterle.pdf).



### 5.10 Congo Basin Forest Fund (CBFF) (UK ETF/ICFI funded)

The CBFF is a £100 million fund financed initially by the UK and Norway and hosted by the AfDB. The aim is to fund projects through competitive bidding from Central African Forest Commission (COMIFAC) partners.

- The CBFF was established in June 2008 with the purpose to ‘check deforestation by building capacity in the local population and in institutions in the Congo Basin’.<sup>92</sup>
  - it will help local communities develop lifestyles that help preserve Congo Basin forests by ensuring financing activities and projects, especially those that are in line with the COMIFAC Convergence Plan
  - it is expected to work closely with other institutions and corporate bodies, including the private sector.
- The CBFF is hosted by the African Development Bank (AfDB) Group (mandated until 2018).
- The fund was initially financed by a grant of £100 million from the UK and Norway.
- It is a project funding initiative.
  - applications are made through open, competitive bidding from COMIFAC<sup>93</sup> partners (to include governments, NGOs, civil society and technical groups) (see Figure 7)
  - projects in excess of \$100,000 will be managed by the AfDB. Those under this threshold can be managed via fund-management agents.
- Projects will be eligible for funds if they can demonstrate that they will curb the destruction of forest by, for example, providing alternative sources of income or energy.
- The criteria for project submission are:
  - innovation and transformation (ie impact)
  - conformity with the CBFF objectives (slow deforestation and reduction of poverty)
  - conformity with the COMIFAC Convergence Plan (meeting one or more of the agreed strategic areas).
- The first call for concept notes in June 2008 resulted in 188 submissions, of which 94 met the necessary criteria and were invited to submit a full proposal. The final decision on the proposals to be funded was made in February 2009, and the next call for proposals was in May 2009.
- Other partners are expected to contribute to the fund.
- Project effectiveness will be monitored by satellite (mounted with high-definition cameras), which is due to be launched within the next two years.
- The 4th Governing Council meeting of the CBFF took place on 2–3 March 2009 to discuss the establishment of the secretariat in the AfDB and to decide on the proposals to be funded under the First Call for Proposals in June 2008.
- Additional funding has been provided for related projects, such as Forest Monitor’s ‘Developing Community Forestry in DRC’.<sup>94</sup> Funded by the CBFF start-up resources provided by the DFID,<sup>95</sup> this project was launched in February 2009, and will run for 18 months, finishing in June 2010. The project also aims to develop a 15-year programme to would facilitate the widespread adoption of community forestry in the Democratic Republic of Congo.

<sup>92</sup> [www.cbf-fund.org](http://www.cbf-fund.org) or [www.afdb.org/congobasin](http://www.afdb.org/congobasin)

<sup>93</sup> COMIFAC (Central Africa Forests Commission)

<sup>94</sup> [www.forestmonitor.org/en/community\\_forestry\\_drc#docs](http://www.forestmonitor.org/en/community_forestry_drc#docs)

<sup>95</sup> These resources are additional to the £100 million main CBFF Fund being resourced by the UK and Norwegian Governments



Figure 7: COMIFAC member countries.



Source: FAO<sup>96</sup>

- Note: The Congo basin Forest Partnership (CBFP)<sup>97</sup> was launched at the Johannesburg World Summit on Sustainable Development (WSSD) in 2002, and works with COMIFAC to promote the conservation and sustainable management of the forest ecosystems in the Congo Basin.

<sup>96</sup> [www.fao.org/docrep/009/a0970e/a0970e11.htm#map](http://www.fao.org/docrep/009/a0970e/a0970e11.htm#map).

<sup>97</sup> [www.cbfp.org/](http://www.cbfp.org/).



### 5.11 The Adaptation Fund (AF or KPAF) [(Kyoto Protocol)]

This fund seeks to monetise the Certified Emission Reductions (CERs) under the Clean Development Mechanism (CDM) to enable concrete adaptation projects and programmes to be rolled out in 2009.

- The fund was established by the UNFCCC to finance concrete adaptation projects and programmes in developing countries that are party to the Kyoto Protocol.<sup>98</sup>
- The fund is not reliant on ODA. It is financed by 2% of the CERs issued for projects within the CDM and with funds from other sources.
  - the current fund estimate is 5.3 million (based on 2% CERs).<sup>99</sup>
- The Conference of the Parties (COP) has appointed a Global Environment Facility (GEF) Secretariat, which is to provide its services on an interim basis.
- The 5th meeting of the board was held on 24–27 March 2009.
- The Adaptation Fund is supervised and managed by the Adaptation Fund Board (AFB). The AFB is composed of 16 members and 16 alternates, and meets at least twice a year.
- At CMP 4 (Poznań, December 2008) the administrative and legal arrangements were formally adopted. These included:
  - the rules of procedure of the AFB
  - a memorandum of understanding (MoU) establishing the GEF as Secretariat
  - the terms and conditions of the services to be provided by the World Bank
  - strategic priorities, policies and guidelines of the Adaptation Fund.
- Currently, the AFB is seeking to ensure that developing countries can access resources directly under the Adaptation Fund. To do this the AFB will be granted 'legal capacity' to discharge its functions. This legal capacity would have to be recognised in some domestic jurisdiction.
- Delivery mechanism: grants (no funds have yet been disbursed).

### 5.12 Global Climate Change Alliance (GCCA) (EC funded)

The GCCA was proposed by the EC in 2007, with a budget of €50–60 million to integrate climate change into poverty-reduction strategies in the least developed countries (LDCs).

- An alliance on climate change between the European Union and poor developing countries 'that are most affected and that have the least capacity to deal with climate change'.
- The GCCA is proposed by the EC to help the LDCs and Small Island Developing States (SIDS) to limit the impact of global warming.
- The EU aims to work jointly with countries to integrate climate change into poverty-reduction strategies. Measures will include better preparedness for natural disasters, which are expected to become more frequent and intense due to global warming.
- Aims to assist the most vulnerable countries in the prevention of, and their preparedness for, natural disasters.
- Assistance provided under the GCCA will focus on five areas:<sup>100</sup>
  - (1) implementing concrete adaptation measures
  - (2) reducing emissions from deforestation
  - (3) helping poor countries take advantage of the global carbon market
  - (4) helping poor countries to be better prepared for natural disasters
  - (5) integrating climate change into development cooperation and poverty-reduction strategies.

<sup>98</sup> <http://adaptation-fund.org> and [http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/adaptation\\_fund/items/3659.php](http://unfccc.int/cooperation_and_support/financial_mechanism/adaptation_fund/items/3659.php).

<sup>99</sup> <http://cdm.unfccc.int/Issuance/SOPByProjectsTable.html>.

<sup>100</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1352>.



- Aims to integrate assistance with poverty-reduction efforts in order to ensure sustainability.
- Systematic climate risk assessment and mainstreaming of climate change into development strategies and programmes (climate proofing) are imperative in this regard.
- The Commission has already earmarked €50 million to the GCCA over the period 2008–2010.
- An appeal has been made to the EU member states to dedicate part of their agreed commitments to increase ODA over the coming years to the cause of coping with climate change in the most vulnerable countries.
- Originally proposed by the European Commission in September 2007.

A report in September 2009 by the EP Development Committee<sup>101</sup> called for the GCCA to receive at least 25% of the revenue of the EU-ETS (in the next trading period).

- MEPs believe the long-term funding goal should be at least €2 billion per year by 2010, and €5–10 billion by 2020.
- Forest protection and the reduction of emissions caused by deforestation and forest degradation are a central concern of the alliance.

### 5.13 The Special Climate Change Fund (SCCF) (administered by GEF)

This is a \$90.3 million fund, supported by 13 donor countries, to finance adaptation (81%) and technology transfer (19%) projects.

- The fund was established in 2001 under the UNFCCC to finance projects relating to 'adaptation; technology transfer and capacity-building; energy, transport, industry, agriculture, forestry and waste management; and economic diversification'.<sup>102</sup>
- The aim is to complement other funding mechanisms for the implementation of the Convention.
- The fund is managed by the Global Environment Facility (GEF).
- As of March 2008 a total of \$90.3 million had been pledged by 13 contributing participants:
  - Canada, Denmark, Finland, Germany, Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK.<sup>103</sup>
- Payments actually received total \$73.7 million.
- While all non-Appendix 1 countries can apply, emphasis is given to vulnerable countries in Africa, Asia and the Small Island Developing States (SIDS).
- So far 14 projects have been approved (eg a \$3.8 million 'conservation adaptation project' in Guyana)<sup>104</sup> (see Figure 8).

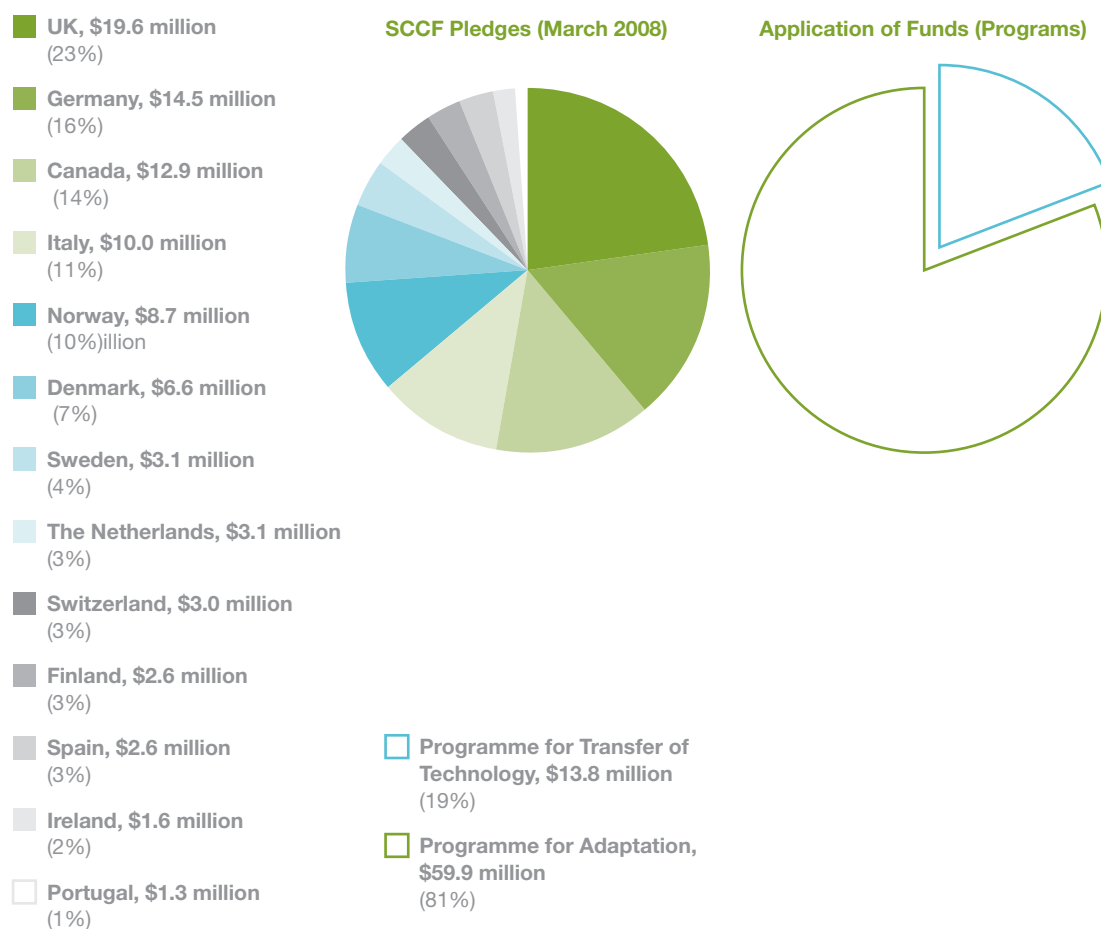
<sup>101</sup> [www.europarl.europa.eu/sides/getDoc.do?language=EN&type=IM-PRESS&reference=20080915IPR37244](http://www.europarl.europa.eu/sides/getDoc.do?language=EN&type=IM-PRESS&reference=20080915IPR37244)

<sup>102</sup> [http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/special\\_climate\\_change\\_fund/items/3657.php](http://unfccc.int/cooperation_and_support/financial_mechanism/special_climate_change_fund/items/3657.php).

<sup>103</sup> GEF, *Status Report on The Climate Change Funds as of March 4, 2008 (Report from the Trustee)* GEF/LDCF.SCCF.4/Inf.2. [www.gefweb.org/uploadedFiles/Documents/LDCFSCCF\\_Council\\_Documents/LDCFSCCF4\\_April\\_2008/LDCF.SCCF.4.Inf.2%20Trustee%20Status%20Report%2003.21.08.pdf](http://www.gefweb.org/uploadedFiles/Documents/LDCFSCCF_Council_Documents/LDCFSCCF4_April_2008/LDCF.SCCF.4.Inf.2%20Trustee%20Status%20Report%2003.21.08.pdf).

<sup>104</sup> [www.climatefundupdate.org/listing/special-climate-change-fund/projects](http://www.climatefundupdate.org/listing/special-climate-change-fund/projects).



**Figure 8: SCCF pledges and the application of funds**

#### 5.14 BioCarbon Fund (BioCF) (administered by the World Bank)

The World Bank has experience of designing and implementing pilot projects and activities that pioneer carbon finance (eg the Prototype Carbon Fund and the Community Development Carbon Fund). At present the bank has ten carbon funds, with a capital of approximately \$2 billion, that focus specifically on obligations to the first Kyoto commitment period (2008–2012).

The BioCarbon Fund (BioCF) focuses on afforestation and reforestation projects under the Kyoto Protocol, and is, with REDD activities at project level, currently financing three pilot projects in Colombia, Honduras and Madagascar.

The BioCF has developed a specific methodology for REDD projects.

#### 5.15 GEF Tropical Forest Account (TFA) initiative (GEF administered)

The TFA initiative was designed to incentivise countries in the Amazon and Congo Basins, and in the New Guinea and Borneo regions, to combine their country allocations in order to set up comprehensive projects and programs (on biodiversity, land degradation and climate change mitigation) in these regions.



- The initiative was launched at the Bali COP. The programme, which draws on Global and Regional Exclusion (GRE) resources, will be offered throughout the entire GEF-4 replenishment period. GEF will make an additional contribution, giving a funding envelope of about \$40 million.<sup>105</sup> The TFA potential could amount to \$50 million by the end of the GEF-4 period.
- Additional resources are derived from co-financing. In November 2008, the GEF Council approved the \$50 million structured finance managed GEF Congo Basin programme. So far this programme has attracted \$150 million in co-financing. The initiative targets six countries: Cameroon, Central African Republic, Republic of Congo, Democratic Republic of Congo, Equatorial Guinea and Gabon.
- The TFA was designed as an experiment in structured finance management that can be transferred into GEF-5 (2010–2013).<sup>106</sup>
- The GEF will fund projects to stop deforestation in 17 countries of the Amazon, Congo Basin, New Guinea and Borneo.
- Four broad themes are proposed:
  - the incorporation of forest management into efforts to protect biodiversity and deal with increased climate change
  - greater efficiency in land use, land-use change and forestry
  - strengthening of mechanisms designed to ensure sustained funding of forest ecosystem management in the Congo Basin
  - real-world application of the concept of payment for services rendered by ecosystems.
- The programme will be regional in nature, while accommodating national priorities. Its implementation will also be at country level, in order to promote concrete action.
- The programme is associated with the GEF's Sustainable Forest Management Program.

### 5.16 UK International Environmental Transformation Fund (ETF)

The UK Environmental Transformation Fund (ETF), which focuses on the development of new low-carbon energy and energy-efficiency technologies, began operation in April 2008. It is jointly administered by Defra and the Department for Business, Enterprise and Regulatory Reform (BERR). The ETF is composed of a UK and an international fund. The UK element of the fund will total £400 million; the original budget for the international fund was £800 million (DFID/DECC). Both funds span the three-year period to 2011.

In the 2007 budget, £50 million of the international fund was earmarked to protect the forests of the Congo Basin. The UK intends to make the full £800 million (~\$1.2 billion) from the international ETF available to the World Bank Climate Investment Funds (CIFs) (see Section 6.6).

### 5.17 Japan's Cool Earth Partnership

The Cool Earth Partnership aims to provide assistance to developing countries that are making efforts to reduce greenhouse gas emissions and to move to a low-carbon growth trajectory. Allocations will be made on the basis of policy consultations between Japan and those countries.

- Japan has pledged a total of \$10 billion (JPYen 1,250 billion) over five years:
  - up to \$2 billion (JPYen 250 billion) for adaptation to climate change and improved access to clean energy
  - up to \$8 billion (JPYen 1 trillion) for assistance for mitigation of climate change.

<sup>105</sup> [www.gefweb.org/uploadedfiles/26-27%20Libreville%20Gabon%20Speech%20English.pdf](http://www.gefweb.org/uploadedfiles/26-27%20Libreville%20Gabon%20Speech%20English.pdf).

<sup>106</sup> [www.thegef.org/uploadedFiles/Publications/forestry.pdf](http://www.thegef.org/uploadedFiles/Publications/forestry.pdf).

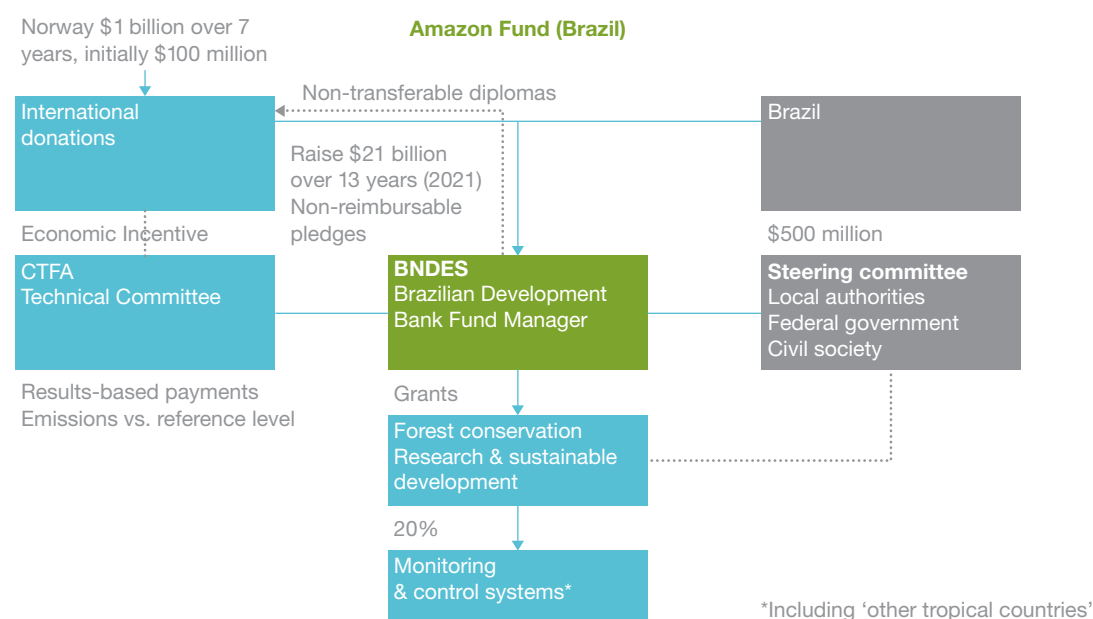


- Funds will be disbursed to support the following activities:
  - adaptation to climate change
  - improved access to clean energy
  - mitigation of climate change.
- Disbursement of funds is dependent on bilateral policy consultations with Japan. As of January 2009 the Partnership has:
  - made available \$300 million to Indonesia (a Climate Change Program loan)
  - had policy discussions with Tuvalu (coastal management)
  - supplied non-project grant aid to Senegal (\$8 million), Madagascar (\$9 million) and Guyana (\$5 million).
- Joint statements have been made with a number of other regions and countries.

### 5.18 Brazil's Amazon Fund (Fundo Amazônia) (administered by BNDES, Brazil)

Brazil's Amazon Fund has received an initial commitment of over \$100 million from Norway (drawn from the Norwegian International Climate and Forest Initiative).

**Figure 9: Brazil's Amazon Fund (Fundo Amazonia)**



- The fund was launched by Lula da Silva by presidential decree on 31 July 2008 as part of his Plan of Action for the Protection and Control of Deforestation in the Legal Amazon.<sup>107</sup>
- The funds raised are (see Figure 9) are as follows.
  - Brazil will allocate \$500 million towards the implementation of this plan, but estimate that a further \$1 billion per year is needed to implement it fully.
  - The fund can receive donations from countries, individuals and businesses. While the fund has been established to receive international donations, it will be run nationally, and its revenue will be managed by the National Economic and Social Development Bank (BNDES). BNDES is planning on opening a subsidiary in London to raise monies for the fund.<sup>108</sup>
  - The aim is to raise \$21 billion (£11 billion) over 13 years (by 2021).

<sup>107</sup> Embassy of Brazil, London: [www.brazil.org.uk/newsandmedia/pressreleases\\_files/20080607.html](http://www.brazil.org.uk/newsandmedia/pressreleases_files/20080607.html).



- In September 2008, the Norwegian government became the first to contribute to the fund, pledging \$100 million initially and \$1 billion (£668 million) over seven years (up to 2015).
- The fund is run on non-reimbursable financing. Contributors will not be eligible for carbon credits that may be generated by reductions in deforestation.<sup>109</sup> BNDES will issue nominal non-transferable diplomas recognising the contribution of donors – and will not imply equity rights or carbon credits to offset donations.<sup>110</sup>
- Payments to the fund will be linked directly to results (emission trends) and provide an economic incentive for reducing deforestation.<sup>111</sup> Reductions in deforestation will be assessed by the Technical Committee of Fundo Amazônia (CTFA).<sup>112</sup> The reference level will be the average of the current 10-year calculation period, and will be updated every five years. If emissions in a particular year are higher than the reference level, no payment will be made to the fund in the subsequent year.
- A Steering Committee is to be appointed, including representatives of the Amazonian local authorities, ministries of the federal government, the bank and civil society (environmental NGOs, indigenous peoples, industry, farmers, etc). The committee's resolutions must be approved by consensus.<sup>113</sup>
- Funds raised will support forest conservation through scientific research and sustainable development projects such as rubber tapping, forestry management and the creation of drugs from plants. The Fund will provide grants for projects in the following fields:
  - management of public forests and protected areas
  - environmental monitoring and control, environmental legislation
  - sustainable forest management
  - economic activities based on sustainable use of the forest
  - surveys of relevant areas (economic and ecological data), land-use planning and regulation
  - conservation and sustainable use of biodiversity
  - restoration of deforested areas.
- Up to 20% of the funding available may be used to develop monitoring and control systems for use in other ecosystems (eg other types of forest) and in other tropical countries.

### 5.19 The International Tropical Timber Organization (ITTO): REDDES Programme for Tropical Forests

Launched in April 2009, Reducing Deforestation and Forest Degradation and Enhancing Environmental Services (REDDES) is a call for proposals falling under the ITTO's Thematic Programme Advisory Committee (TPAC).

Priority will be given to proposals focusing on pilot UN-REDD programmes, capacity-building to improve effectiveness of activities and demonstration activities.

<sup>109</sup> Mongabay: <http://news.mongabay.com/2008/0802-amazon.html>.

<sup>110</sup> BNDES, see above.

<sup>111</sup> Office of the Prime Minister (Norway), Facts about the Rain Forest and the Amazon Fund: [www.regjeringen.no/en/dep/smk/Whats-new/News/2008/facts-about-the-rain-forest-and-the-amaz.html?id=526497](http://www.regjeringen.no/en/dep/smk/Whats-new/News/2008/facts-about-the-rain-forest-and-the-amaz.html?id=526497).

<sup>112</sup> BNDES: [www.bndes.gov.br/english/news/not119\\_08.asp](http://www.bndes.gov.br/english/news/not119_08.asp).

<sup>113</sup> BNDES: [www.bndes.gov.br/english/news/not191\\_08.asp](http://www.bndes.gov.br/english/news/not191_08.asp).



## 6 appendix 3: ODA funding sources (reference only)

### 6.1 Financial flows to forests

Table 3 gives a partial picture of the financial flows to forestry in developing countries (based on OECD/DAC statistics and UNCTAD).

- Current annual bilateral and multilateral flows to forests: \$1.9 billion = (50% increase over 2000–2007)
- Current annual FDI to forest industries: \$0.5 billion (30% increase over 2000–2007).

**Table 4: External financial flows to forests**

Source	2002 USD million*	2007 USD million*	Change (%)
<b>Public Sector</b>			
Bilateral	959.3	1,103.4	+15
Multilateral	335.0	806.7	+140.8
Total	1,294.3	1,910.1	+47.6
<b>Private Sector†</b>			
Foreign direct Investment	400.0‡	516.0††	+29
Other private financing	n.a.	n.a.	increase
<b>NGO, philanthropic and others</b>	<b>n.a.</b>	<b>n.a.</b>	<b>Probable increase</b>

\*at 2006 exchange rates and prices; †UNCTAD 2007; ‡2001-03 (based on Tomaselli 2006); ††2003-05  
Source: Simula 2008.

The level of ODA financing to forests includes approximately \$700m for forest conservation.

### 6.2 Forest ODA

ODA is an important source of finance for forest conservation, small producers and natural forest management, but less so for other activities such as production forests (plantations etc). For example:

- ODA share of conservation funding: Brazil 75%, Guatemala 65%, Nicaragua 85% and Bolivia 95% (FAO, recent years)
- ODA share of production forests funding: Guatemala 15%.



Table 5: Multilateral and bilateral financing for forests (2000–2007)

Source	2000–2002 (USD million/ yr)*	Share (%) 2000–02	2005–2007 (USD million/ yr)*	Share (%) 2005–07	Change (%)
<b>Bilateral</b>					
EC	101.2	7.82	115.7	10.48	14.25
Finland	20.3	2.12	12.7	1.15	(37.42)
France	21.3	2.22	19.3	1.75	(9.17)
Germany	130.9	13.65	126.0	11.42	(3.75)
Japan	329.0	34.29	530.5	48.08	61.25
The Netherlands	111.7	11.65	88.5	8.02	(20.81)
Switzerland	30.2	3.15	30.6	2.78	1.36
UK	39.2	4.09	28.7	2.6	(26.76)
US	95.9	10.0	97.6	8.85	1.77
Other	79.5	8.29	53.8	4.87	(32.4)
<i>Subtotal</i>	<i>959.3</i>	<i>100.0</i>	<i>1,103.4</i>	<i>100.0</i>	<i>15.02</i>
<b>Multilateral</b>					
AfDB	35.8	10.68	72.7	9.02	103.24
AsDB	6.9	2.05	12.4	1.54	79.9
GEF	104.1	31.07	109.4	13.57	5.14
IDB	2.1	0.63	9.1	1.13	331.28
ITTO	16.6	4.96	16.3	2.02	(1.78)
IFC	78.0	23.28	324.0	40.16	315.38
WB	91.5	27.31	262.7	32.56	187.07
<i>Subtotal</i>	<i>335.0</i>	<i>100.0</i>	<i>806.7</i>	<i>100.0</i>	<i>140.80</i>
<b>Grand total</b>	<b>1,294.3</b>		<b>1,910.1</b>		<b>47.57</b>
<b>Bilateral share %</b>	<b>74.12</b>		<b>57.77</b>		

\* Figures at 2006 prices and exchange rates.  
Source: Simula 2008.

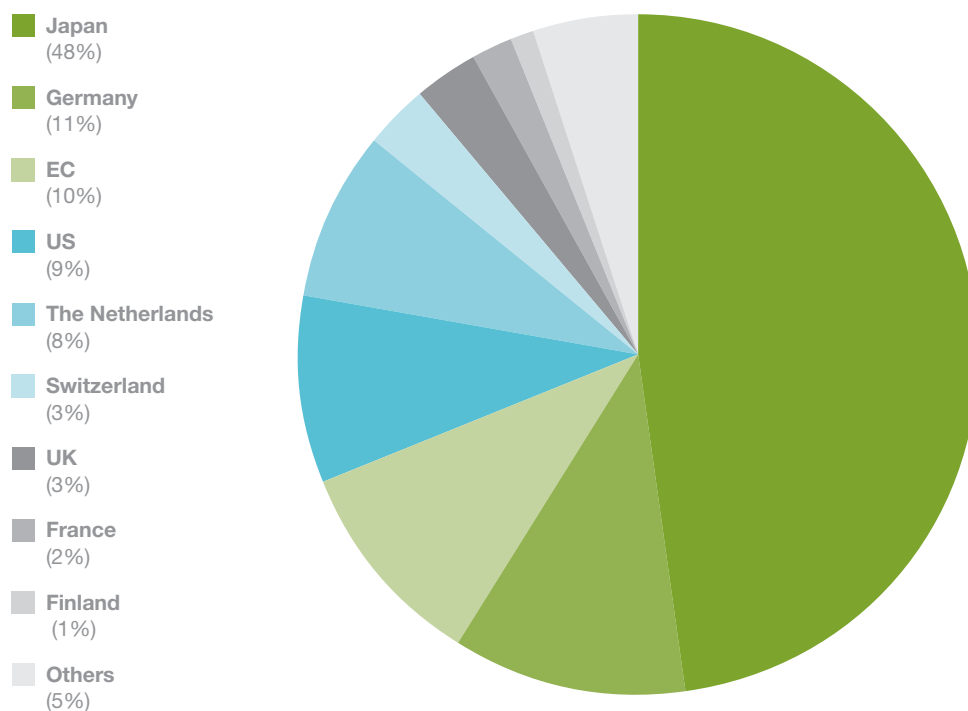


### 6.2.1: Sources of bilateral ODA for forests

- 95% of bilateral ODA to forests is provided by nine donors (Japan, Germany, the EU, the US, The Netherlands, Switzerland, the UK, France and Finland), with Japan's share accounting for 48% in 2005–2007.

**Figure 10: Sources of bilateral ODA 2005–2007**

**\$1.1 billion/year**



The reasons for the reduction in bilateral forest ODA are:

- 1) there is a general trend to move away from considering forests as a self-standing priority and to include them as part of the climate change agenda
- 2) the increasing use of multilateral agencies to channel funds (these agencies have a competitive advantage in recipient countries where bilateral donors cannot operate effectively due to government constraints).

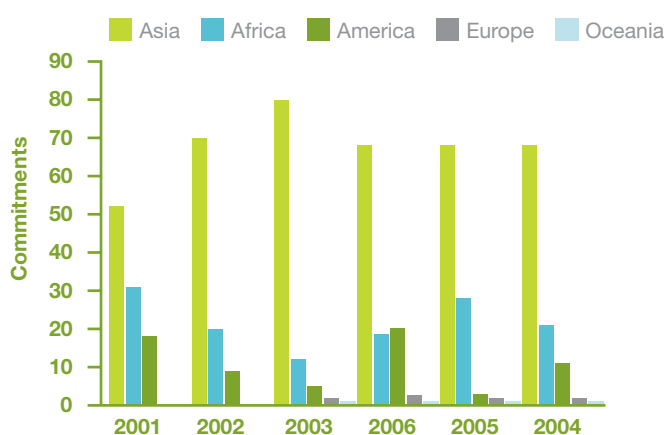
It is estimated that only about half of the total funding is recorded by DAC.

### 6.2.2: Recipients of bilateral ODA

- Since 2000, two-thirds of forestry ODA (according to DAC) has been allocated to Asia, 20% to Africa and 11% to Latin America (see Figure 11).
- In addition, 22% has been allocated to India, 13% to China and 12% to Vietnam (see Table 5).



Figure 11: Recipients of bilateral ODA.



Source: Simula

Table 6: Top ten recipients of DAC-recorded ODA to forestry and biodiversity in 2006

Recipient	Forestry* (USD million)	Share (%)	Biodiversity† (USD million)	Share (%)
India	120	22.3	325.8	13.5
China	72	13.4	454.3	18.9
Vietnam	67	12.5	93.4	3.9
Indonesia	25	4.6	70.9	2.9
Cameroon	20	3.7	–	–
Tanzania	14	2.6	–	–
Bolivia	11	2.0	–	–
Brazil	10	1.9	84.5	3.5
Colombia	9	1.7	–	–
Honduras	9	1.7	–	–
Ghana	–	–	62.0	2.6
Morocco	–	–	55.8	2.3
Bangladesh	–	–	48.0	2.0
Kazakhstan	–	–	45.8	1.9
Nicaragua	–	–	35.8	1.5
Others	182	33.8	1,129.9	47.0
<b>Total</b>	<b>538</b>	<b>100.0</b>	<b>2,406.2</b>	<b>100.0</b>

\* 2006; source OECD (2008). † Annual average 2003-2006 (2006 prices and exchange rates); source OECD (2008).

Source: Simula 2008

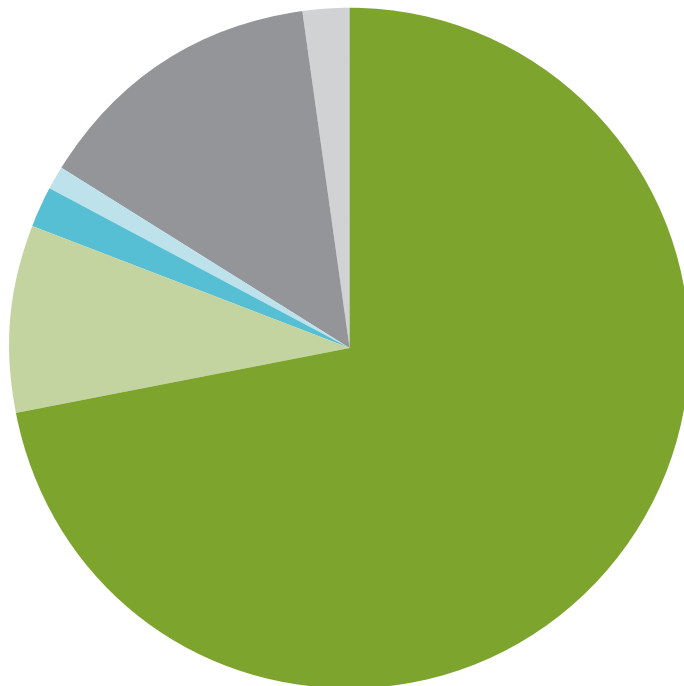
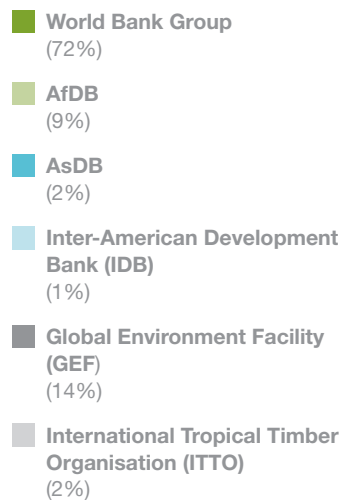


### 6.2.3: Multilateral sources

- The main source of funding is the World Bank Group (WBG), representing 73% of the funding in 2005–2007. Half of this is from the IFC in the form of equity and credit to private-sector enterprises.
- GEF accounted for 14% and AfDB for 9% of funding over the same period.

**Figure 12: Sources of multilateral funding 2005–2007**

**\$807 million/year**



## abbreviations list

AfDB	African Development Bank	FLEXA	fire, lighting, explosion and impact of aircraft
AFP	Adaptation Fund Board	FMO	(Dutch development finance institution)
AIDS	acquired immune deficiency syndrome	FSC	Forest Stewardship Council
AMC	Advance Market Commitment	FTE	Full Time Equivalent
A/R	afforestation and reforestation	GAVI	Global Alliance on Vaccinations and Immunisation
AUD	Australian dollars	GBP	British pound (pound sterling)
BERR	Department for Business, Enterprise & Regulatory Reform (UK)	GCCA	Global Climate Change Alliance
BioCF	BioCarbon Fund	GCFM	global climate financing mechanism
BNDES	Banco Nacional de Desenvolvimento Econômico e Social (BNDES (Brazilian the National Economic and Social Development Bank))	GDR	gross domestic product
BRE	Building Research Establishment (UK)	GEF	Global Environment Facility
CBFF	Congo Basin Forest Fund	GFTN	Global Forest & Trade Network
CBFP	Congo basin Forest Partnership	GIFC	Global Initiatives on Forests and Climate
CCB	Climate, Community and Biodiversity Standards	GRE	Global and Regional Exclusion
CCX	Chicago Climate Exchange	Gt	gigatonne (109 tonne)
CDC	CDC Group plc (UK development finance institution)	HNWI	high net worth individual
CDM	Clean Development Mechanism	ICFI	International Climate and Forest Initiative
CERs	certified emissions reductions	ICRAF	International Council for Research in Agroforestry
CIF	Climate Investment Funds	IDB	Inter-American Development Bank
CIFOR	Center for International Forestry Research	IFC	International Finance Corporation
CO <sub>2</sub>	carbon dioxide	IFCI	International Forest Carbon Initiative
CO <sub>2</sub> e	carbon dioxide equivalent	IFF	International finance facility
COC	chain of custody	IIED	International Institute of Environment and Development
COMIFAC	Central African Forest Commission	IFFIm	International Finance Facility for Immunisation
COP	Copenhagen Conference of the Parties	IGES	Institute for Global Environmental Strategies
CPF	Collaborative Partnership on Forests	ILO	International Labour Organization
CPI	Consumer Price Index	IPCC	Intergovernmental Panel on Climate Change
CSA	Canadian Standards Association	IPO	International public offering
CTF	Clean Technology Fund	IRR	Internal rate of return
CTFA	Technical Committee of the Amazon Fund	ITTO	International Tropical Timber Organization
DAC	Development Assistance Committee	ITTO MIS	International Tropical Timber Association Market Information Service
DECC	Department of Energy and Climate Change (UK)	IUFRO	International Union of Forest Research Organizations
DFI	development finance institution	JEREMIE	Joint European Resources for Micro to Medium Enterprises
DFID	Department for International Development (UK)	Jl	Joint Implementation
DFN	developing forest nation	JPYen	Japanese Yen
DR	Democratic Republic	KfW	KfW Bankengruppe (German development finance institution)
EC	European Community	kt	Kilotonne (103 tonne)
ESG	European standards and guidelines	LDC	Least developed country
ESS	Eco System Services Limited	LEI	Lembaga Ekolabal Indonesia
ETF	Environmental Transformation Fund	LIBOR	London Interbank Offered Rate
EU	European Union	LLP	limited liability partnership
EUEA	European Union Emissions Allowance	LP	limited partner
EU ETS	European Union Emissions Trading Scheme	LULUCF	land use and land-use change and forestry
EUR	Euro	MDB	multilateral development bank
EVCA	European Private Equity & Venture Capital Association	MDG	Millennium Development Goal
EVN	economic value to the nation	MEP	Member of the European Parliament
FAO	Food and Agriculture Organization of the United Nations	MIGA	multilateral investment guarantee agency
FCPF	Forest Carbon Partnership Facility	MPCI	multi-peril crop insurance
FIP	Forest Investment Programme	MRV	measurable, reportable, and verifiable
FLEGT	Forest Law Enforcement, Governance and Trade (EU)	Mt	megatonne (106 tonne)



MTCC	Malaysian Timber Certification Council	TPAC	Thematic Programme Advisory Committee (ITTO)
NA	not applicable		
NAV	Net Asset Value	UCITS	undertakings for collective investment in transferable securities
NCREIF	National Council of Real Estate Investment Fiduciaries	UK	United Kingdom
NFC	New Forests Company (Uganda) Ltd	UN	United Nations
NGO	non-governmental organisation	UNCCD	United Nations Convention to Combat Desertification
NOK	Norwegian Kroner		
NPV	net present value	UNDP	UN Development Programme
NTFP	non-timber forest products	UNEP	United Nations Environment Programme
ODA	overseas development assistance		
OECD	Organisation for Economic Co-Operation and Development	UNEP FI	United Nations Environment Programme Finance Initiative
OECD DAC	OECD Development Assistance Committee	UNFCCC	United Nations Framework Convention on Climate Change
OTC	over-the-counter	UNFF	United Nations Forum on Forests
PE	private equity	UN-REDD	United Nations REDD programme
PEFC	Programme for the Endorsement of Forest Certification schemes	US	United States of America
PES	payments for ecosystem services	USAID	United States of America; American US Agency for International Development
PIDG	Private Infrastructure Development Group		
PPCR	Pilot Programme for Climate Resilience	USD	US dollars
ppm	parts per million	VC4S	venture capital for sustainability
PPP	public-private partnership	VPA	voluntary partnership agreement
PRP	Prince's Rainforest Project	WBCSD	World Business Council for Sustainable Development
REDD,	reduced emissions from deforestation		
REDD+	and degradation together with other activities to enhance forests through afforestation, reforestation and sustainable forest management	WB-FCPF	World Bank Forest Carbon Partnership Facility
		WB-FIP	World Bank Forest Investment Programme
REDDES	Reducing Deforestation and Forest Degradation and Enhancing Environmental Services	WBG	World Bank Group
		WRI	World Resources Institute
REIT	real estate investment trust	WTO	World Trade Organisation
ROAM	return on assets managed	WWF	World Wildlife Fund
ROCE	return on capital invested	WWF GFTN	World Wildlife Fund Global Forest and Trade Network
R-PINs	Readiness Project Idea Notes		
RSPO	Roundtable on Sustainable Palm Oil	WSSD	World Summit on Sustainable Development
RWE	round-wood equivalent		
SCCF	Special Climate Change Fund		
SCF	Strategic Climate Fund		
SECO	State Secretariat for Economic Affairs (Switzerland)		
SFI	Sustainable Forestry Institute		
SFM	sustainable forestry management		
SGEC	Sustainable Green Ecosystem Council		
SIDA	Swedish International Development Cooperation Agency		
SIDS	small island developing states		
SIP	small investment programme		
SME	small and medium-sized enterprise		
SMFE	small and medium-sized forest enterprise		
SOFO	State of the World's Forests		
SPV	special purpose vehicle		
SRCCMD	social riots, civil commotion and material damage		
SREP	Scaling-up Renewable Energy		
SRI	socially responsible investments		
T	tonne		
TCER	temporary certified emission reduction		
TIMO	timber investment management organisation		
TFA	Tropical Forest Account		
TFF	tropical forest facility		
TFT	Tropical Forest Trust		



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