

## Position paper: Conserving tropical forests as a way of protecting the climate

Frankfurt, November 2008

### The context

**Rainforests are being destroyed at the rate of approximately 13 million ha a year. Many tropical forest countries are among the poorest in the world. These forests are home to over 100 million people, particularly indigenous groups and small farmers. Another 800 million live on the fringes of tropical forests or in savannahs and depend on the forest for food, firewood and medicine.**



The destruction of forests releases more greenhouse gases each year than the European Union in total. This corresponds to roughly one fifth of greenhouse gas emissions caused by humans worldwide. In December 2007 the parties to the United Nations Framework Convention on Climate Change (UNFCCC) adopted the "Bali Action Plan". This plan provides for pilot projects and incentives for Reducing Emissions from Deforestation and Degradation in tropical areas (REDD) to be developed on the road to the Copenhagen Conference of the Parties in 2009.

Protecting forests through innovative forest protection is very cost-efficient compared with many other options. Today people know better than some years ago what needs to be done and what instruments are effective. Since the beginning of the 1990s German Development Cooperation has been successful in helping protect tropical forests. Together with its partners in developing countries, the World Bank, NGOs and German technical cooperation organisations, KfW has implemented numerous

forest and biodiversity conservation programmes. Through these activities it has gathered valuable experience and developed instruments that may be conducive to efficient climate protection within the framework of REDD.

### 1. Strategic importance of the climate policy approach

Tropical forests store carbon quantities equal to around 50 years of global carbon emissions should they be released. However, rainforests are much more than mere carbon reservoirs! They are vast climate generators that convert solar energy into moisture and thereby also affect rainfall in temperate areas north and south of the equator. First and foremost, however, they constitute an environment for people and animals. No one questions the rich biodiversity and the enormous value which forests have as ecosystems. However, there is still no reliable method of determining their monetary value<sup>1</sup>, so that today a "pricing" can be made primarily within the framework of climate protection. Putting a price tag on forests is important because this demonstrates that protecting is much more reasonable economically than destroying them. This sort of approach also makes it possible to convince finance and economics ministers and enterprises in developing countries to become strategic partners in forest conservation.

As forests grow carbon dioxide is absorbed from the atmosphere in trunks, twigs, leaves, roots and soil. When forests are destroyed great quantities of this carbon dioxide are released. Deforestation is defined as the destruction of more than 90% of the biomass covering the soil. Degradation means thinning out and destroying forests to a lesser degree, although this also considerably reduces their capacity to work as a carbon sink and ecosystem, and it poses a threat to biological diversity.

<sup>1</sup> The results of the study headed by Pavan Sukhdev, director general of Deutsche Bank in London, on the costs of species extinction worldwide are still pending.

While it has been possible to monitor deforestation more and more accurately over the years through satellites, monitoring the degradation is still the greatest challenge. Preventing forest degradation is much more important for forest conservation than has been previously assumed, however. Besides, forests can have a sustainable benefit for the climate only if they are rich in species and constituted naturally so they can respond flexibly to climate change, meaning they have sufficient resilience. Yet one of the biggest threats to tropical forests is global warming itself. Although the climate models referring to regional temperature increases and possible tipping points for irreversible ecosystem transformations (desertification of tropical forests) are still inaccurate, the reciprocal effects are clear – without effective tropical forest protection it will not be possible to maintain global warming below 2 degrees Celsius. Unless progress is made in keeping temperatures from rising, the tropical forest ecosystem will not survive as a habitat for people and animals and hence will itself contribute to more climate change.

## **2. REDD – Compensation for "avoided deforestation"**

REDD – Reducing Emissions from Deforestation and Forest Degradation - is the new magic formula in international forest conservation. What is new about this formula is mainly the attempt to give forest conservation an economic value (especially via the carbon market). This value should be high enough to put an end to predatory exploitation being practised in the form of illegal timber felling, extensive pasture grazing and even technology-intensive soya farming.

What makes the REDD proposal better than previous approaches? Most of it has to do with the fact that it establishes a national baseline against which achievements in tropical forest conservation can be measured. A national baseline rules out leakage within a country. In other words, a successful project in region A can no longer coexist alongside increased forest destruction in region B. Rewards (in the form of emission credits and transfer payments) are given only if the national deforestation rate declines. This would increase the pressure for a coordinated and coherent forest conservation policy.

What is not yet solved are leakages between states. This risk differs from region to region. An important factor in Latin America is the

expansion of livestock farming and - although to a lesser extent - soya cultivation, while in Asia it is illegal logging and the expansion of oil palm plantations. The leakage problem, however, will be reduced if many countries join an international REDD deal. Within a short time the World Bank has received expressions of interest in the Forest Carbon Partnership Facility from 38 tropical forest countries. In other words, the more financial incentives are provided to practice forest conservation as a form of climate protection and the more countries participate on the basis of such incentives, the lower the risk of forest destruction leaking from country A to country B.

## **3. National and subnational schemes**

In international climate negotiations preference is now clearly being given to the national approach. A national baseline can be established taking into consideration the historic deforestation rates, or it may take into account expectations for the future. As it takes time to develop a national policy, one rapid pathway is to use the local project level. This option, however, should ensure that subnational target figures are linked with national target figures and that compensation is actually paid only if forest destruction declines overall. In this context high demands will be placed from the start on monitoring and surveillance.

Some countries have raised conceptual reservations against a subnational approach. They fear that it will discourage countries from making a national commitment. On the other hand, many countries advocate project activities at the local level which could start immediately. Such activities can also accelerate the preparation process at the national level by creating the need for a regulatory framework. A REDD programme financed under German Development Cooperation in Indonesia is currently under preparation that is already initiating demonstration activities on the ground in advance of the national baseline (see box).

## **4. Funds and the market**

Reservations raised by industrialised and developing countries during the negotiations of the Kyoto Protocol in 1997 have resulted in forest sinks not being included in the Protocol. Industrialised countries feared that fossil fuel reduction targets would be watered down by offsetting them against sinks because the avoidance of emissions through forest conservation incurs considerably lower costs than lowering emissions in the energy sector. De-

veloping countries, on the other hand, saw a threat to their national sovereignty and to the development prospects associated with the use of tropical forests. In the end, the decision resulted in the second largest source of CO<sub>2</sub> emissions after the energy industry not being systematically included in climate protection.



Unlike in the current Kyoto Protocol, the ongoing negotiations for a post-2012 regime provide for making joint considerations on the reduction of emissions from the burning of fossil fuels and deforestation right from the beginning. As a prerequisite, the reduction targets of the industrialised countries must be increased significantly. If this happens there will be many arguments for practising forest conservation as a cost-efficient form of climate protection through emissions trading. A market solution of this sort would create reliable rules that would apply not only to the tropical forest countries - which will have to make an advance input - but also to investors. Moreover, it would raise large sums of money to add to classical development finance.

Still, there is good reason to be sceptical as to whether it will actually be possible to increase the reduction targets sufficiently in the industrialised countries any time soon. As a precaution the European Commission in its draft amendment to the Emissions Trading Directive of January 2008 has ruled out the use of emissions certificates generated from REDD up to the year 2020. At the same time it proposes using at least 20% of the expected revenue of around EUR 30 - 50 billion from the auction of emission rights for climate protection targets, including avoidance of deforestation.<sup>2</sup>

---

<sup>2</sup> Income from the auction of emission rights in air transport should be available for climate protection overall in the future, including forest conservation.

#### Box 1

### REDD demonstration measures in Indonesia

One of the countries on which the REDD demonstration activities will focus is Indonesia. Because of its high deforestation rate Indonesia has been classified as the world's third-largest greenhouse gas emitter (according to the World Bank, 85% of Indonesia's emissions are caused by deforestation). Approximately two million ha of forest is lost every year, and illegal logging causes widespread forest destruction. The governments of Germany and Indonesia in 2007 therefore agreed to include "climate change" as a new development cooperation priority area. A so-called "Forest and Climate Protection Programme" will be implemented under this focus. Implementation will be under the responsibility of the Indonesian Ministry of Forestry in cooperation with KfW Entwicklungsbank, GTZ and the German Development Service (DED).

The aim of the programme is to develop and test at various levels REDD demonstration measures that can be latched on to the mechanisms still to be set up nationally and internationally.

The main target group of the programme is the local level (districts, private organisations, villages/ municipalities). Supporting public forestry agencies and improving the living conditions of poor, forest-dependent village communities are integral parts of the overall approach.

The most important programme activities consist in supporting the Indonesian side in the following areas:

- creation of necessary conditions at national level and, in selected districts, support for the reform of the forest administration,
- definition of benchmark emission levels (baselines for carbon emissions);
- identification of project participants and implementation of activities on-site;
- development of REDD financing mechanisms;
- REDD monitoring;
- presentation of first lessons learned and results gained from REDD projects for national and international debate;
- tailoring of the projects to future voluntary emission trading markets;
- monitoring of carbon stocks (remote sensing, field inventories) unless covered by other donors.

Instead of creating a market-based REDD mechanism this would produce one that would be linked to the emission market. Such an approach would rule out negative repercussions on the European carbon market and on the

CDM market while at the same time creating a reliable source of financing.

Already today forest conservation and biodiversity projects can be financed through the voluntary emissions reductions (VER) market. This market has developed dynamically in recent years (USD 265 million overall in 2007). This instrument alone, however, cannot be expected to generate sufficient financial transfers in a volume that will rein in the destruction of tropical forests.

Besides market instruments and instruments associated with the market there are several new voluntary fund initiatives (the World Bank Forest Investment Fund, Brazil's Fundo Amazônia, Congo Basin Forest Fund) as well as the larger bilateral initiative by Norway that is intended to contribute in the short term to reducing deforestation rates in Latin America, Africa and Asia. For the period from 2009 to 2012 the German Government will provide an additional EUR 500 million for biodiversity and tropical forest conservation, and an additional EUR 500 million per year for this purpose from 2013 onward.

In other words, we are currently dealing with at least three proposals with very different advantages and disadvantages. For a transition period it would therefore be appropriate to try several approaches simultaneously in order to test their technical and political viability. In the medium term it is probable that public and private financial sources will actually be combined with revenue from emissions trading because, as highlighted in the Eliasch Review<sup>3</sup>, the funds from emissions trading in tropical forest certificates in the first years alone will be far from sufficient to stop deforestation. In the long term a market mechanism will be attractive because it will be able to mobilise large sums of money.

One thing that is clear, however, is that we need systematic inclusion of tropical forest conservation in a post-2012 deal to act as a political signal.

It would be a mistake to block tropical forest conservation politically by debating the issue of "fund versus market" because most of the challenges to an effective implementation of tropical forest conservation are comparable. This begins with the definition of national deforestation scenarios, institutional strengthening and monitoring of deforestation, and ranges to the design

of transfer mechanisms that reach the indigenous communities and other populations living within the forests as well. The latter is of great political importance and will be very decisive for the success of REDD. Tropical forest conservation can only succeed if it includes the people who live in and depend on the forests for their survival.

## 5. The cost of tropical forest conservation

For Brazilian Amazonia, studies<sup>4</sup> estimate that deforestation can be stopped if every tonne of CO<sub>2</sub>e<sup>5</sup> is priced at USD 5.50.

What should be done? Brazil's forest destruction makes it the world's fourth largest CO<sub>2</sub> emitter. The Amazon forests alone are a carbon sink of approximately 50 billion tonnes stretching across an area of 3.3 million square kilometres (on average approximately 151 tonnes of carbon per hectare). Given the rising worldwide demand for livestock fodder and meat it must be assumed that 55% of Brazil's Amazon rainforests will have been cut down or at least considerably thinned out by the year 2030 if no action is taken. This would release an additional 20 billion tonnes of CO<sub>2</sub> emissions.

The Woods Hole Research Center is developing a scenario on how to contain forest destruction in Brazilian Amazonia within 10 years. It considers the opportunity cost of soya production, cattle farming and commercial logging for the next 30 years and arrives at a CO<sub>2</sub> price of USD 5.50 per tonne - enough to keep even the most profitable soya farming operation out of the tropical forest.<sup>6</sup> The overall opportunity cost for the entire period would amount to USD 257 billion. This cost and, hence, the respective CO<sub>2</sub> price drops significantly to USD 123 billion, or USD 2.80 per tonne of carbon dioxide, under the assumption that soya and beef production for profit are authorised on 6% (370,000 square kilometres) of the Amazon land areas that currently have the highest opportunity cost.

The Stern Review of 2006 assumes that deforestation in the most important tropical forest

---

<sup>3</sup> Eliasch Review (2008), Climate Change: Financing Global Forests, [www.occ.gov.uk/activities/eliasch.htm](http://www.occ.gov.uk/activities/eliasch.htm)

---

<sup>4</sup> Daniel Nepstad et. al: The costs and benefits of reducing carbon emissions from deforestation and forest degradation in the Brazilian Amazon, 2007

<sup>5</sup> CO<sub>2</sub> equivalent (CO<sub>2</sub>e), a measurement used to describe the global warming potential of a greenhouse gas. CO<sub>2</sub> is the reference gas; the other greenhouse gases are therefore quantified in CO<sub>2</sub> equivalents.

<sup>6</sup> By comparison, 1 tonne of CO<sub>2</sub> was traded in the EU's ETS at an average price of EUR 25.50 in the first half of 2008.

countries could be reduced by 46% by the year 2015. According to Stern's calculations, this would cost USD 5 to 15 billion each year. More recent surveys, such as a review of deforestation consequences performed by the EU and the Eliasch Review, estimate that the sum will be twice as high.<sup>7</sup>

## 6. Relevance for KfW

Over the past years German Development Cooperation in the area of tropical forest conservation has focused primarily on the following approaches:

- establishment and management of protected areas;
- identification and demarcation of indigenous territories;
- control and monitoring of legal and illegal logging;
- prevention and combat of forest fires;
- promotion of the sustainable management of natural resources;
- payments for ecosystem services;
- reform of land ownership;
- zoning, regional development and institutional capacity building;
- afforestation and forest management.

In all these areas KfW has acquired expertise together with its partners that is of great relevance for both subnational and national REDD schemes.

Bilateral REDD sector programmes offer an opportunity for flexibly combining specific project or programme measures aimed at reducing deforestation with compensation from REDD emission reductions at national level. Under such a scheme the purchase and international marketing of REDD certificates could be managed by a national mechanism. Existing public-private nature conservation funds, many of which have already partnered with KfW, could be used.

### Box 2

#### Tropical forest conservation and REDD in Brazilian Amazonia

Roughly 75% of Brazil's CO<sub>2</sub> emissions are due to alterations of land use. The deforestation of Amazonia accounts for at least 60% of these alterations. Since the regional development of Amazonia began in the 1960s, around 18% of the original forest cover has been destroyed. A further 29% is considered already damaged or immediately threatened. The driving factors of deforestation include livestock farming, agribusiness, road construction, illegal logging and settlement. Scarce presence by the state and unclear land ownership rights, which facilitates illegal land possession and violent land conflicts, contribute to the destruction.

German Development Cooperation has supported Brazil in tropical forest conservation for many years in the framework of the Pilot Programme to Conserve the Brazilian Rain Forest. Without a doubt, the Pilot Programme has achieved numerous positive results and generated valuable findings that can be put to use for the long-term conservation of the forests. Yet it did not succeed in permanently reversing the trend of deforestation rates.

A consensus has been reached that new approaches and instruments will be required to protect and conserve forests sustainably and on a broad scale. REDD is one possible approach that has already been applied under various initiatives. With its Fundo Amazônia the Brazilian Government has established a fund that is designed to be replenished from voluntary compensation payments for avoided deforestation and to finance deforestation mitigation measures. The federal state of Amazonas has created a legal framework that is to enable emissions reductions achieved by the identification and maintenance of nature conservation areas to be marketed. The same federal state has created the so-called Bolsa Floresta, a transfer mechanism designed to compensate forest users for preserving the "standing forest". However, other federal states, user groups and NGOs are also in the process of developing REDD projects.

It is essential for German Development Cooperation to support these approaches and develop them further -- also in order to contribute to the debate in Brazil and on an international level. For example, in the south and southeast of the federal state of Amazonas, which is under heavy deforestation pressure, KfW Entwicklungsbank is currently preparing a programme to combat deforestation together with the federal state of Amazonas that is to be integrated into an REDD approach at the subnational level.

<sup>7</sup> In its Communication (COM(2008) 645 of 17 October 2008) "Addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss" the EU concludes that an estimated amount of between EUR 15 and 25 billion per annum will be needed to halve deforestation by 2020. For a comparable scenario the Eliasch Review concludes that USD 17 to 33 billion will be needed up to the year 2030.

Given the high uncertainties and risks still associated with a national REDD scheme, enabling effective deforestation reduction through specific programmes and measures at the local level will be a central element of any REDD

programme. These could be a number of measures which are already being financed under German Financial Cooperation as described above. Alternatively, these measures could be implemented under the umbrella of a REDD sector programme, with the disbursement of instalments made conditional primarily on the supply of proof of effective reductions in deforestation rates.



REDD could also be implemented under the scheme of "payments for environmental services", in which direct transfer payments are made to the target group. Programmes of this kind are already under implementation in various countries like Mexico and Costa Rica, as well as within the framework of German Financial Cooperation, for instance in Ecuador and Peru. In most of the projects the concept being implemented so far is based on rewarding different, indirect environmental services, usually by introducing environmentally compatible resource management or resource protection measures, but as yet without specific reference to deforestation or CO<sub>2</sub> emission reduction. In the future these programmes can be tailored specifically to REDD, using most of the lessons learned in projects and instruments so far applied. In particular, such projects make it possible to (a) focus on regions with high deforestation rates and (b) target the payments for environmental services at developmentally preferred beneficiary groups.

Similar to the Forest Carbon Partnership Facility it would be conceivable to set up a fund under German Financial Cooperation that could be used across country borders in order to flexibly finance REDD programmes or REDD projects in priority pilot countries.

## 7. Conclusion

- Forest conservation provides high avoidance potential at a cost that is lower than in other sectors, such as electricity generation;
- Market-driven mechanisms can contribute substantially to forest conservation and thus to climate protection if the reduction targets of the industrialised countries are sufficiently increased at the same time under a post-Kyoto deal in order to guarantee the "additionality" of forest emission avoidance;
- Even without access to regulated emissions trading it is possible to finance forest conservation within the context of REDD using market-driven mechanisms (money obtained from emissions trading) and by allocating money from funds. Moreover, the voluntary market (VERs) can also support the financing of forest conservation.
- In the short and medium term it can be assumed that public and private financing sources will be combined with revenue from emissions trading to finance tropical forest conservation;
- The broad range of lessons learned in the framework of German Financial Cooperation in tropical forest conservation is highly relevant for REDD.

### **For further information please contact:**

Dr Karl-Heinz Stecher  
Tel: ++49 (0)69/7431-8720  
E-mail: [Karl-Heinz.Stecher@kfw.de](mailto:Karl-Heinz.Stecher@kfw.de)

KfW Entwicklungsbank  
Palmengartenstraße 5 – 9  
60325 Frankfurt am Main  
[www.kfw-entwicklungsbank.de](http://www.kfw-entwicklungsbank.de)