Conserving forests to protect our climate

COOPERATION WITH DEVELOPING COUNTRIES – CLIMATE AND DEVELOPMENT

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Forests must be conserved as natural habitats and as a livelihood for future generations.

Forests are more than areas of natural beauty, more than a habitat for plant and animal life, and more than recreation areas for people. Forests protect us in many ways and therefore deserve protection themselves. We need the forests because of their exceptional biodiversity, but also as carbon stocks and as green bridges to a future with lower emissions – we need the forests to keep global warming within tolerable limits. However, international climate negotiations were slow to grasp the importance of the contribution that can be made by REDD (Reducing Emissions from Deforestation and Degradation), the reduction of greenhouse gas emissions resulting from the destruction of or damage to biodiversity-rich tropical forests. The potential for reducing emissions in this area alone corresponds roughly to the current carbon dioxide output of the EU. On the path to an international set of climate convention rules and regulations which incorporate forest protection, bilateral cooperation plays an important pioneering role. Building on long-standing, trust-based cooperation with governmental and non-governmental partners, KfW contributes its technical and regional expertise and helps to ensure that the implemented measures are consistent in terms of development policy.

Fortunately the protection of tropical forests is not starting from scratch. Following the suggestion of the German Government at the G7 summit in Houston in 1990 to set up a pilot program for the conservation of the Brazilian rainforests (PPG7), KfW has contributed to international forest conservation with suggestions and impetus, and has successfully built up a relationship based on trust with partners in developing countries. Since the beginning of the 1990s, KfW Entwicklungsbank has supported measures totalling EUR 1.4 billion on behalf of the
German Federal Ministry for Economic Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung – BMZ) and – since 2008 – also together with the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit – BMU). The range extends from regulating land and usage rights and controlling illegal logging to the creation of protected areas and the promotion of communal forest conservation programs. Thanks to these pilot programs, we now know how forests can be effectively conserved for the benefit of people and nature.

In most countries the development of the forest cover follows a trend in which industrial growth is initially met by a sharp reduction of the forest cover, leading to the almost entire destruction of the primeval forests. Then, the forest cover starts to increase again from its low levels in response to reforestation measures, which unfortunately are often biodiversity-poor. We have to break this cycle. In many countries in Latin America, the Congo basin and in Southeast Asia, forest stocks are declining still further, while growth has been recorded once again in China, India and Costa Rica. REDD gives us the chance to elevate forest conservation as a form of climate protection to a new level with a much broader impact, whilst at the same time making a contribution towards sustainable development in the partner countries.

A lot about REDD is new. This makes it so much more important for KfW to be able to draw on experience, contacts and expertise gained in many long years of work in the field of biodiversity conservation and sustainable forest management. One new aspect is that the climate negotiations have brought international attention to conserving forests. New is also the scale of the targets: plans are to rapidly reduce the current deforestation rate of about 13 million hectares per year. This will require investments going into tens of billions every year. Another new aspect is the fact that programs are incorporating monitoring and control elements from the outset to ensure transparency and credibility: under REDD, payments are not made until real emissions reductions have actually been achieved. This approach helps partner countries to appreciate conservation of forests as a genuine economic alternative – an alternative which actually brings in more revenue than most of the destructive options. This is because the forest is given a monetary value which is high enough to protect it against intruders and destruction. This sends a positive signal to politics and the economy. In the process, forest protection gains new supporters – with new opportunities for sustainable growth opening up for the people in the partner countries. For this reason, KfW will continue to work to conserve the forests for the benefit of man, nature and the climate in the future.

Dr Norbert Kloppenburg
(Member of the Executive Board, KfW Bankengruppe)
A NEW PERSPECTIVE ON FORESTS

HELPING TO PROTECT THE CLIMATE AND TO SAVE BIODIVERSITY
Conserving forests promotes biodiversity and stabilises the climate to a very significant extent. For this reason, delayed UN decisions on climate must not lead to a political deadlock for forest conservation. A key factor for its success is whether or not it will be possible to adopt a pragmatic approach which combines the strengths of the different players to create synergies. KfW is one of the pioneers in the conservation of forests and biodiversity. With its ability to innovate, its practical experience and the trust it enjoys from its partners, KfW is hoping to make a contribution to the successful implementation of climate protection and conservation of biodiversity through forest conservation.

Every year, the destruction of forests claims a total land area the size of England. Many of the countries with tropical forests are among the poorest countries in the world. The survival of more than a billion people, particularly indigenous groups and small-scale farmers, depends on these forests. They provide them with firewood, food and medicine. Consequently, conserving the tropical forests has direct social benefits. Biodiversity conservation is also closely linked to the conservation of forests. The tropical regions are real treasure troves, containing the greatest diversity of species anywhere on Earth.

Almost 13% of all annual greenhouse gas emissions are caused by changes in land use, for example by the conversion of forests to grazing land (source: World Resources Institute). The destruction of tropical forests is responsible for a large proportion of these emissions, as the process of burning off the forests releases the carbon stored in the trees in the form of CO₂.

The role of forest conservation in the climate debate

Despite its great significance in terms of climate protection, the conservation of tropical forests was long excluded from the international UN climate negotiations. It was not until 2005 that the issue was brought back into the international climate debate by a group of developing countries rich in tropical forests, particularly Costa Rica and Papua New Guinea, under the banner of REDD (Reducing Emissions from Deforestation and Degradation), motivated in part by the fact that the conservation of forest land can be a comparatively inexpensive way to contribute to climate protection. In addition to the reduction of deforestation and forest degradation, the REDD+ approach also includes sustainable forest management and the “enhancement of carbon stocks”, for example through improved forest management, restoration of forests and reforestation.

Today, REDD is being pushed forward despite the recently stalled climate negotiations. In May 2010, 55 countries set up the “REDD+ Partnership” in Oslo. As one of the most important donors in the field of tropical forest protection, Germany is also part of this partnership. The core objective of the initiative is to continue the development of REDD and implement it in an interim phase in which no new international climate agreement is yet in place. The industrial nations have promised a “REDD+ Fast-Start-Financing” budget of USD 4 billion for this period from 2010 to 2012. Some of the programs implemented by KfW on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) also fall within the terms of these financial commitments.

Swift action is needed

The combination of forest conservation and climate protection opens up new perspectives, so REDD is a great opportunity to preserve the tropical forests. As living spaces for people, animals and plants, forests are part of an ecosystem and therefore much more than just carbon stocks. The challenge now is to exploit the political leverage currently enjoyed by the issue of forest conservation due to the huge international attention being paid to it and its leading role in shaping a new international climate regime. The EU recommends that gross deforestation without taking into account any reforestation should be reduced by 50% by 2020. However, such ambitious goals can only be achieved if prompt and targeted steps are taken and advantage is drawn from experiences gained in the past. Two core questions which need to be addressed are these: which of these experiences are particularly relevant for REDD? And: how will “traditional” forest conservation programs need to be refined so that they can make a sustainable contribution to climate protection?
Slashing and burning destroys the habitats of many animals and plants.

Success depends on working with the people, not against them

Germany is one of the largest donors in the field of tropical forest conservation. Since the early 1990s, KfW has provided assistance on behalf of BMZ – and for a few years now also on behalf of BMU – totalling EUR 1.4 billion. Together with the partners in the developing countries, protected areas have been established, usage and ownership rights have been assigned and community forest conservation programs have been sponsored. Monitoring and controlling of illegal logging and the prevention of fires have been improved.

Establishing protected areas is a central instrument in the fight against uncontrolled deforestation and loss of biodiversity. This is because they form important barriers against illegal land seizure and destruction of the rainforest. With German support, Brazil for example has already set up more than 200,000 km² of these areas in the Amazon region – with demonstrable success. Investments in Brazil cover setting up and equipping park administrations, developing management plans and strengthening the cooperation with local people. "Getting the local population involved is very important," explains Jens Ochtrop, who manages the program in the offices of KfW Entwicklungsbank in Brasilia. "Nature conservation is something we can only achieve working with people, never against them."

Putting a price tag on the environment

Another instrument for conservation of nature and resources are so-called "payments for environmental services", which have now been introduced in many developing countries. Small-scale farmers or entire local communities are given direct payments as a reward for protecting water catchment areas or biodiversity. This is still often done without a direct link to how deforestation or CO₂ emissions could be avoided – which is precisely the starting point for further developments aimed at climate protection. KfW is contributing both to the "readiness" process as well as to the implementation of REDD plans across wide areas of land. Similar assistance is also being provided for the development and implementation of financial incentive systems (see pages 11–12).

These types of instruments can also be used in forestry. In addition to their benefits for the environment, forests also generate one commodity in particular which can be put to direct use: wood. However, the commercial value of wood is also an inherent risk, as it creates an incentive for illegal logging. An economically attractive alternative to clear cutting is the sustainable management and use of tropical forests, which can generate additional income for the local population. The reforestation and cultivation of unused, bare and degraded areas opens up alternative sources of firewood and construction timber. This can reduce the pressure on remaining natural forests, which usually absorb more carbon than plantations and are particularly important for saving biodiversity. With the aid of intelligent financing solutions which create appropriate incentives, such as e.g. the "tree savings book" in Vietnam, large quantities of CO₂ can be additionally absorbed by forests.
MR HONG’S TREE SAVINGS BOOK

PLANTING TREES IN VIETNAM TO HELP PROTECT THE CLIMATE

A little green book has changed the life of Mr Hong: a savings book. In 2002, the Vietnamese Agribank gave it to him with a credit balance of around USD 600. In return, the 65-year-old Hong planted around three hectares of his land in the village of Giap Son in northern Vietnam with pine trees and walnut trees. “This improves water supplies to the village and the irrigation of the rice fields, protects the climate and now accounts for a fifth of my earnings,” he explains. The credit balance on his savings book has been paid out to him over the last eight years with interest and compound interest. Now not much remains. However, in the mean time Mr Hong’s trees have grown well. He will soon be able to sell the first timber and resin harvest. His forest is now worth nearly 20 times as much as it was eight years ago.

Hong’s family is one of 294 in the village and one of around 100,000 throughout the whole of Vietnam that have taken part in the reforestation programs financed by KfW on behalf of BMZ since the 1990s. More than 130,000 hectares of forest land has been recultivated – an amount which corresponds to almost 3% of the entire increase in the amount of land covered by forests in Vietnam in the last 20 years. Around EUR 70 million has been made available through KfW for this purpose across 14 provinces in Vietnam. This funding forms part of Vietnam’s political aim of increasing the country’s forest coverage of nearly 28% in the early-1990s to above 40% by 2015. “However, the Vietnamese model has been so successful that this goal has already been met,” explains Hubertus Kraienhorst, forest expert at KfW in Frankfurt in view of Vietnam’s 2010 forest inventory. The maturing forests absorb carbon from the atmosphere and thus contribute directly to climate protection. “Through the years, every Euro spent removes about half a ton of CO₂ from the atmosphere,” adds Kraienhorst.

This is, of course, also good business for the environment.

The tree savings book is an innovative and highly successful program. It is based on a very simple principle: reforestation and forest management are attractive enough for the local population from an economic point of view, since Vietnam is a rapidly growing economy in which construction timber is scarce. However, the trees first need to grow for a number of years before the wood can be harvested and sold. In the past, only very few small-scale farmers were able to bridge this long gap with their own reserves, which is why they did not reforest themselves. However, the tree savings book has changed this calculation: for each hectare of successfully reforested land, farmers are given a savings account balance of up to USD 250 per hectare at the start of the project, which is paid out successively over a period of six to nine years to bridge the first income-free years. This is quite a considerable amount, given that the average annual income of a Vietnamese rice farmer is just under USD 130.

Certainly for Mr Hong, the tree savings book came at exactly the right time. When he signed up for the program in 2002, his son was just turning 18. “He helped me to plant and look after the seedlings,” says Mr Hong with a twinkle in his eye. “Today he is grateful to me for it.” This is because, thanks to the additional income from the reforestation program, he is able to finance his son’s professional training. There is also enough money for additional seeds and fertilizer, allowing Mr Hong to sell even more rice than before. As a result, he will soon no longer need the little green book. His one-year-old granddaughter plays with it on the veranda of the farmhouse. Mr Hong adds: “But my forest is staying put.”
LESS EMISSIONS FROM DEFORESTATION

THE REDD APPROACH
The REDD approach enables comprehensive greenhouse gas reductions in developing countries at comparatively low costs. The basic idea is to assign a quantifiable monetary value to the carbon stored in forests and to thus incorporate the conservation of the forest in economic decision-making processes. As simple as this idea may seem, putting it into practice is a significantly more complex undertaking. The solution requires answers to different structural, technical and methodical questions. The challenges and procedures from years of development cooperation in the field of forest conservation remain important. Some new ones have been added: the focus on regions in which the destruction of forests is particularly severe, the principle of payments only being made as a reward for real, verified emission reductions, and the processes of measuring and checking the emission reductions. The aim is to link decentralized initiatives and develop new financing instruments.

In order to deliver additional benefits (i.e. so-called “additionality”), forest conservation must particularly focus on areas in which there is otherwise a real threat of loss. This is because the designation of non-threatened areas alone will (certainly in the short term) not have any impact in terms of CO₂ or climate. However, this does not mean that the initiative should only focus on countries or regions with high rates of deforestation. It is also possible that the risk of forest loss can rise in areas in which it is currently low as a result of developmental dynamics or as a result of national or international displacement effects, called leakage. Individual countries have already embarked on this path with German support. Under the Brazilian “Action Plan for Prevention and Control of Deforestation in the Amazon” (PPCDAm), efforts are focussing on 43 municipalities in the Amazon region with the highest deforestation rates. At the same time, structure-building measures like the designation of nature conservation areas or the demarcation of Indian reserves, including those beyond the “deforestation front”, are being expanded.

**Measurement and monitoring as a matter of principle**

REDD programs include monitoring elements so that any real reduction in emissions can also be clearly proved. The introduction of a national carbon accounting system plays a central role (see pages 14–15). This also includes the quantification of the biomass which is stored in the existing forests so that estimates can be made of how much CO₂ would be released if the forests were cut down. In order to be able to measure the actual deforestation taking place, a monitoring system – usually satellite based – is needed. In addition, a national reference scenario (“business as usual”) needs to be defined as a means of comparison with the actual deforestation rates.

The Ecuadorian Government launched its Socio Bosque (PSB) program in 2008 under the auspices of the Ministry of the Environment, which pays direct forest preservation incentives to forest owners (see page 27). In essence, this is a rural support program which is being expanded to a national REDD program with support from KfW. It incorporates plans to set up a carbon accounting system, and the illegal timber trade will be made more difficult thanks to an efficient forest monitoring system. One important aspect is the focus on areas in which the deforestation dynamics are particularly high, such as in the province of Esmeralda.
A REDD program in three phases

A REDD program is implemented in three phases, which may also overlap. In Phase 1 – Readiness – the institutional and technical requirements necessary for efficient forest policies are put in place. One example of this includes establishing the carbon accounting system. In the readiness process, KfW finances the installation of a satellite-based monitoring system with field stations, or the establishment of national emission registries. In Phase 2 – Investment and implementation – locally confined demonstration projects are implemented and the national REDD policies are rolled out across the country. In Phase 3 – Performance-based payments – payments are then made in return for the achieved emission reductions. For this purpose KfW promotes the development and implementation of financial incentive systems – such as government aid for forest preservation or money for environmental services. In addition, it also makes sure that the projects are designed in such a way as to reach the local population and ensure the preservation of biodiversity.

With the current biodiversity and forest portfolio, KfW is contributing to the conservation of a total of 64 million hectares of forest – an area of land almost twice the size of Germany. In the field of REDD initiatives, KfW supports countries which, according to information from FAO (Food and Agriculture Organization, UN), were responsible for nearly 60% of global forest destruction in the period from 2000 to 2005. Many of these countries have deforestation rates of between 1 and 2% per year. The forest clearance in Brazil and Indonesia alone were responsible for 44% of global forest destruction during the period mentioned above.

The examples from Brazil, Indonesia and Ecuador on the following pages show how REDD projects can be implemented in practice.
Deforestation is responsible for over half of the Brazilian greenhouse gas emissions. Since the exploitation of the Amazon Rainforest began in the 1960s, almost a fifth of the original forest cover has been destroyed, particularly through livestock farming, soybean cultivation, road building and illegal logging. The situation is made worse by the lack of a state presence in many areas and the uncertain land rights situation, which has allowed illegal land seizures and violent land conflicts to take place.

In 2004 the Brazilian Government introduced a new policy designed to fight deforestation in the Amazon region – the “Action Plan for Prevention and Control of Deforestation in the Amazon”. In just five years, the deforestation rate has been reduced by 75% from 27,000 km² in 2004 to 7,000 km² in 2009.

In the process, Germany has supported Brazil in the last 15 years through KfW and GTZ with a total of more than EUR 300 million. With German aid, Brazil has set up 53 protected areas with a total land area of 200,000 km² and 99 indigenous territories totalling more than 380,000 km². With a combined land mass - bigger than France - these areas act like green barriers against deforestation. Not only does this reduce emissions, but it also helps to preserve numerous animal and plant species in this region. Innovative local approaches to sustainable forest management have been piloted in over 500 small-scale projects. Better equipped environmental authorities in four federal states in the Amazon region are supporting the projects. In addition, deforestation on private land is being monitored with the aid of technology.

Furthermore, KfW is also taking an active role in developing forest conservation further in the federal states Amazonas and Acre, which aim to refinance parts of their progressive environmental policy with sub-national REDD programs via "emerging carbon markets".
Carbon accounting: keeping a record of reduced CO₂ emissions

The Amazon Fund in Brazil

The Brazilian Government set up the so-called "Fundo Amazônia" (Amazon Fund) in August 2008, in which the Brazilian National Development Bank BNDES took on the role of a voluntary REDD financing mechanism. The principle is simple: if the annual deforestation in the Amazon falls below a defined benchmark value, private and public donors can reward this performance by making payments into the fund. In return, the donors receive documents which confirm the reduction in emissions. However, these documents cannot be traded or included in international emission reduction obligations. Norway and Germany have together committed a total of USD 173 million for the Amazon Fund in order to bolster the positive trend in Brazil. The German contribution is made by KfW through Financial Cooperation (FC) and by GTZ through Technical Cooperation.

At the heart of the REDD carbon accounting model is the reference scenario ("business as usual"). In Brazil, this is based on the average rate of deforestation between the years 1996 to 2005: 19,625 km² per year. The difference between the reference scenario and the actual deforestation is the calculated avoided deforestation, which serves as the basis for calculating the annual avoidance of emissions which can be remunerated from the Amazon Fund.

This is only possible with the aid of a monitoring system, which is usually satellite-based. The Brazilian PRODES system has been operated by the country’s own space research institute INPE since 1988 and delivers reliable data about deforestation in the Amazon which is freely accessible on the Internet. Non-governmental organizations operate their own monitoring systems in parallel to check the validity of official statistics.

The carbon stored in the tropical forests of the Amazon varies between 50 and 400 tons per hectare. Reliable measurements can only be taken on-site, and are very expensive to carry out for the whole of the Amazon region. Consequently, a simplified method has been adopted in Brazil: a relatively low "flat rate" of 100 tons of carbon (corresponding to 366 tons of CO₂) is assumed per hectare. Although this means that Brazil is effectively "giving away" emission reductions, it significantly reduces the transaction costs.

In October 2009 the Brazilian Development Bank issued an emission reduction certificate to Norway for 4.19 million tons of CO₂ (MtCO₂), which was purchased with the first Norwegian tranche (USD 21 million) at a fixed price of USD 5 per ton of CO₂ from the Amazon Fund. These emissions reductions date back to 2006, the first crediting year.

For 2006, Brazil has calculated total emissions reductions of 200 MtCO₂ based on the following calculation: the reference scenario for 2006 is 19,625 km². In fact, the total deforestation for 2006 was 14,286 km². The difference of 5,339 km² is the calculated avoided deforestation, and according to the Brazilian "flat rate" this corresponds to the avoidance of 195.4 MtCO₂. This amount was rounded up by the scientific council of the Amazon Fund to 200 MtCO₂ for 2006. This means that Brazil could still receive compensation for nearly 196 MtCO₂, of additional emissions reductions for 2006 alone. According to the prices of the Amazon Fund, this corresponds to almost USD 1 billion. Following the same calculations, Brazil is still entitled to further offset payments totalling USD 1.5 billion for 2007 and around USD 1.2 billion for 2008.

One previously unsolved problem associated with this method of carbon accounting is the possible double counting of REDD emissions reductions. Several public and private REDD projects and programs sell emissions
reductions in the Amazon in "voluntary markets" in which players in the market that do not have an obligation to reduce emissions trade certificates for reasons of corporate responsibility. Individual emissions reductions are therefore possibly being sold twice. The Brazilian Government has already set up a task force to find a solution to this problem.

In Brazil, vast areas of forest are protected with satellite-based systems against illegal deforestation.

Annual rates of deforestation in the Amazon region (in km²)

![Annual deforestation chart]

* Average rate of deforestation 1996-2005
Indonesia is one of the world’s largest emitters of greenhouse gases. According to government information, half of Indonesia’s total emissions are caused by changes in land use and forest clearances. In addition to the massive degradation of forests due to illegal logging, every year a total of around 1 million hectares is entirely destroyed.

The governments of Indonesia and Germany agreed in 2007 on a new “Forest and Climate Change” program, for which EUR 26 million is being made available by Germany. The Indonesian Ministry of Forestry will be supported by KfW, GTZ and DED in the development and implementation of REDD measures at national and local level. Initially, the main concern is to establish the necessary institutional, political and technical framework, i.e. to establish readiness for the REDD program. Steps include defining the reference emissions level (i.e. the baselines for measurement of changes in carbon emissions), developing REDD financing mechanisms and establishing the REDD monitoring system. In addition, the program will establish alternative sources of income which ensure sustainable land use and conservation of biodiversity. The measures designed to counter deforestation and forest degradation are implemented in close cooperation with other involved groups, such as administrations, target groups and non-governmental organizations.

KfW is financing REDD demonstration projects in several districts in Kalimantan. Here, support is being provided for sustainable forest management, for example by promoting community forests and reduced impact logging. The target groups for these measures are mainly groups which are involved at local level: for example, improved forest management will benefit the poor communities in particular, whose existence depends on the forest.
Huge demand for finance

The REDD financial architecture

In order to implement the REDD program, vast levels of funding will need to be made available. According to estimates, between USD 10 - 38 billion will be needed every year to halve deforestation worldwide.

To date, the sources of finance for REDD have been limited to public development cooperation within the framework of "Official Development Assistance" (ODA) and voluntary carbon markets. The total ODA funds pledged for REDD for the period from 2010 to 2012 are around USD 4 billion.

The donor countries and beneficiaries are currently detailing the arrangements in a joint forum, the so-called "REDD + Partnership" which was launched in 2010 in Oslo. By contrast, the voluntary carbon markets predominantly bring private groups together, who mobilised almost USD 700 million in 2008, of which only a fraction is allocated to REDD. In total, this means that – even in the most optimistic scenario – the currently available funds do not even cover one fifth of the costs required to halve deforestation worldwide.

There are two options for the long-term financing of REDD: firstly via binding emission trading on the carbon market or secondly via special international funds. A combination of the two options is also possible.

In order to incorporate REDD step-by-step into the legally regulated carbon markets – the so-called compliance markets – it would be conceivable on the one hand to establish an international market under the umbrella of a follow-up agreement to the Kyoto Protocol. Alternatively, carbon markets in individual countries or regions – as in the case of the EU – could allow REDD offsets (referred to as carbon offset payments) for meeting national climate protection targets on the basis of their environmental legislation.

To limit the risk of there being too many and too cheap tropical forest certificates in these cases, the option of "conditioned market integration", for example through limitation of the trade amounts, can also be considered. Higher emission reduction targets are needed to the same extent in which REDD is to additionally contribute to reductions in greenhouse gas emissions in other sectors.

In the event of binding financing via funds, these would be met via the auctioning of emission rights in legally regulated carbon markets which already exist. However, this mechanism will only provide reliable incentives to reduce emissions if fixed amounts or shares flow into the REDD funds in a transparent manner, and if these funds really are only made available for performance-based payments in cases where the reduction in emissions is verified.

The tropical, forest-rich developing countries can distribute the funds centrally or at local level: central processing via REDD funds requires all international REDD payments which are due to a forest-rich country to be collected at a single point and then passed on to individual projects. The Brazilian Amazon Fund is an example of a fund which works according to this principle (see page 14). This option avoids a range of difficult legal and technical issues – such as the allocation of carbon rights – but it will be measured in terms of how successful attempts are to use the money effectively at local level.

In the case of the decentralised solution, funds are freely negotiated between suppliers of emissions reductions and clients wishing to purchase certificates according to the relevant national standards. In the tropical, forest-rich developing countries, certificates are made available through private or public REDD projects and programs. Potential buyers of certificates come from countries with national or international emissions reduction targets. Such distribution must be embedded in a national framework ("nested approach"). Particularly in the current transition phase where – in some cases – there are still gaps in the national frameworks, the issue of striking the right balance between the reliability of investments for project financiers and the verification of the effectiveness of REDD projects in terms of climate protection is not yet resolved. The potential consequences of a lack of clear national rules include double payments for emissions reductions, conflicting measurement standards and over-estimation of the effectiveness of the climate protection impact of individual REDD projects ("hot air"), which could render the certificates generated in this way unusable for current investors.

One major challenge for establishing a REDD financial architecture in the future will be to match the needs of tropical, forest-rich developing countries with the available technical and financial resources on offer from the donors ("matching"). The first attempts in this direction have already been undertaken in the context of the "REDD + Partnership". In the long term, it will be necessary to set up an international REDD registry which performs the central role of a clearinghouse and guarantees that REDD financing actually results in the desired emissions reductions.
Izabella Teixeira has been Brazil’s Minister of the Environment since April 2010 in Lula da Silva’s government. From 2008 to 2009 she held the office of Deputy Minister in Brazil’s Environment Ministry. Before that, she had been working since 1984 as a civil servant in the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) in various roles, including Director of Environmental Quality. In 2007 she moved from her position as the Deputy Minister to the State Environment Ministry of the federal state of Rio de Janeiro. In the Brazilian Environment Ministry, Izabella Teixeira was responsible – among other things – for coordinating international cooperation in the field of the environment, so she is very familiar with the work of KfW. She teaches at various Brazilian universities and is a widely respected expert on the subject of strategic environmental impact assessment. She has a Masters Degree in Energy Planning and a PhD from the University of Rio de Janeiro in Environmental Planning.

**During the last five years, Brazil has managed to significantly reduce the rate of deforestation in the Amazon. How was this result achieved?**

Since 2004 the Brazilian Government has been carrying out a plan against forest clearing which is structured on three combined axes: monitoring and control, spatial planning and land development, and promotion of productive activities. We see the success in reducing deforestation as a product of this plan, because this is exactly what we lacked: a view that considers the various causes of deforestation and promotes integrated actions.

To get an idea of the scale we’re talking about: through this plan, there were over 600 inspection operations which brought in more than BRL 5 billion (corresponding to around EUR 2.17 billion as of July 2010) in fines, and resulted in the confiscation of more than 60,000 head of cattle seized within protected areas.

In addition, the largest number of protected areas was created on the planet. Together with the governments of the federal states we created 50 million hectares of protected areas, many of them at the front lines of the expansion of deforestation.

Without this integrated view, the problem of deforestation is not likely to be overcome. These measures have had a greater effect than just reducing the rate of deforestation. In some regions the feeling that the Brazilian State was not present was widespread – and this led to land grabbing and agrarian violence. Through the implementation of the plan and other government actions, the presence of the State has been gradually reaching the most sensitive regions of the Amazon.
What are the lessons learnt from over 15 years of cooperation between Brazil and Germany in the conservation of tropical forests?

The Brazilian-German cooperation, which includes KfW, is considered by us as one of the most successful. Together, we as Brazilians and Germans have learned to deal constructively with the diversity of stakeholders present in tropical forests, in the Amazon and in the Atlantic Forest. And although the stakeholder groups involved sometimes have conflicting perspectives, in the end everyone is committed to the cause of sustainable development. We have learned to value and strengthen this diversity.

After all, we recognized that the environmental agenda should be viewed in the framework of national development and therefore from a broader perspective. The achievements are so great that we can now see a significant difference to areas like Cerrado (savannah) and Caatinga (dry savannah), where the German cooperation was not active. That’s why I asked for the expansion of our cooperation to other regions of the country. These regions also have an importance for the global environment, not only in terms of biodiversity, but also in terms of climate change and water conservation.

I would say that today we are experiencing a transition in Brazilian-German cooperation. We have increasingly been asked to apply an integrated view and to invest in areas and subjects that are particularly important to each one of us.

How much does tropical forest conservation cost? Is it true that REDD (Reducing Emissions from Deforestation and Forest Degradation) is a quick and inexpensive mechanism for conserving the Brazilian forests?

Of course it is easier to preserve than to recover these areas. I do believe that REDD can be a great incentive for countries that still have many natural forests, such as Brazil. That was the position of Brazil in the negotiations before and after Copenhagen. We need to create financial mechanisms to promote forest conservation policies related to reducing greenhouse gas emissions.

Here in Brazil, the Amazon Fund is, in a way, already a typical mechanism for REDD and it has the advantage of relying on services rendered. In other words, funds are raised only after the reduction of deforestation emissions. I believe that it can be a very useful instrument - not only for Germany, but for all the rich countries in the world - provided that it actually means an addition to their own reduction efforts. What we want is to deliver a cleaner planet for future generations.

But I wish that our technical cooperation would focus on issues beyond REDD (although this in itself is appropriate), such as, for example, other forms of payment for environmental services, forest management, protected areas management and strengthening of markets for products of sociobiodiversity.

Furthermore, I believe that we still have many opportunities for cooperation within REDD. The Amazon Fund, which is eligible to receive donations, is already established and the first projects are already providing benefits. Today we seek more agile mechanisms for the selection and implementation of projects with international funding. Especially in the past, we took paths that imposed obstacles and led to poor implementation. The Amazon Fund is a promise that such mechanisms are more successful.

And when it comes to international negotiations, it would be very opportune that our delegations work together in order to encourage the construction of mechanisms that lead to the conservation of tropical forests, besides other efforts to reduce greenhouse gas emissions.
LIVELIHOOD FOR HUMANS AND ANIMALS

CONSERVATION OF FORESTS AND BIODIVERSITY
Tropical rainforests are home to rich biodiversity and provide many, often poor, people in developing countries with a basis for life and a livelihood. For this reason, setting up protected areas with participatory management structures has been an important part of Financial Cooperation for many years. Innovative mechanisms like nature conservation funds help secure the long-term financing of a number of regions. The funds for REDD can also help to create incentives for preserving natural ecosystems outside of protected areas.

Depending on the region and sector, a different value is placed on the benefits of biodiversity. For example, the value of coral reefs for the fishing industry is estimated at USD 3,800 per hectare and year, whereas its value in terms of natural disaster risk management for coastal inhabitants is put at USD 189,000, with this value increasing to as much as USD 1 million for tourism. We are not always aware that, in one way or another, we all depend on this great diversity.

The term ‘biodiversity’ is used to describe the diversity of ecosystems, species and genes. Together with the global climate, it forms the basis for life on Earth. People benefit directly from some services provided by nature, for example in the form of food, basic ingredients for medicines, raw materials like wood or local recreation areas. Nature also serves as a model for technical innovations, for example in the field of bionics. Other, less obvious advantages of biodiversity, such as reducing the consequences of natural disasters, the regulation of local climate and water cycles or the degradation of pollutants are often almost completely overlooked. At the moment, the value and benefits of biodiversity for humans cannot be comprehensively understood due to their sheer complexity. In order to preserve these “silent reserves” it is imperative to conserve natural and near-natural habitats.

Often there is a lack of an adequate legal framework which defines clear usage and ownership rights – an important condition for the protection and sustainable use of natural resources. Wherever clear rules are lacking or cannot be enforced there is a higher incentive for short-term, unsustainable exploitation – a situation which is also known as the “tragedy of the commons”. Authorities are often ill-equipped, and their employees lack the necessary training.

As a result, the “law of the jungle” prevails, particularly in the more remote regions, and the weak – usually poor or indigenous people or small-scale farmers – are deprived of their long-term livelihoods. Particularly as the global concerns for “forest and nature conservation” do not seem to be paying off at the moment, the industrial nations must do everything they can to support the efforts of the developing countries.
Biodiversity must be strengthened inside and outside of protected areas.

Successes of KfW involvement

For KfW Entwicklungsbank, forests form a major point of focus in the area of "natural resources": Since 1990, a portfolio of nature conservation related projects amounting to about EUR 1.4 billion has been built up within the framework of Financial Cooperation – predominantly in and around forest areas. In its capacity as a development bank and an environmental bank, KfW promotes sustainable concepts which serve both nature and the local people in the long term. Key elements include jointly drawn up land use and land management plans for protected areas or for sustainable forest management zones, as well as a participatory role in decision-making processes and in the implementation of decisions. At the same time, the necessary training and infrastructure must be in place to allow the responsible parties – authorities, local community representatives etc. – to fulfil their duties. Examples of projects where this has been put into practice include the cross-border conservation area systems in Central Africa and the community forests of Namibia.

Unfortunately, only very few protected areas are financially self-supporting. For this reason there has also been an increased demand in recent years for financing instruments like nature conservation funds, which are designed to deliver long-term financial security. The principle is simple: the foundation capital remains untouched, while ongoing costs are met by interest earnings. The "Caucasus Protected Areas Fund" shows how this type of mechanism can work (see page 24). However, even this approach is not enough to conserve large areas of forest outside of conservation areas.
REDD and the conservation of biodiversity

REDD offers a chance to strengthen biodiversity outside of conservation areas as well. Of course, reducing emissions does not automatically conserve biodiversity – many valuable areas of unspoiled nature are found outside the carbon-rich ecosystems of the tropical rainforests. For example, the páramo (grass and high-altitude moor lands in the South American Andes) perform vital functions in the supply of drinking water to Peru, Ecuador, and Columbia. The mangroves along the coast of Vietnam protect the coastal regions against storm floods. Coral reefs are both treasure troves of biodiversity and breeding grounds for many different species of fish.

All of these ecosystems will benefit either very little or not at all from REDD, so they will continue to require their own protection mechanisms.

In tropical forests as well, a positive carbon balance does not necessarily equate to the preservation of biodiversity. For example, the conversion of a natural forest into palm oil plantations restores part of the carbon storage capacity, but in terms of the resident flora and fauna this type of intervention is fatal. This is why KfW Entwicklungsbank is very careful to ensure that climate protection and biodiversity always play a central role in its forest conservation projects.
Situated between the Black Sea and the Caspian Sea, the Caucasus offers an exceptional diversity of species and habitats. At present however, it is still known more as a crisis region than because of its significance in terms of conserving biodiversity. The financial resources are still insufficient for the 115 protected areas in the three southern Caucasus countries (Armenia, Azerbaijan and Georgia) with a total area of around 1.7 million hectares.

In order to enable long-term financing and help the countries to implement the program of work of the Convention on Biological Diversity, KfW set up the “Caucasus Protected Areas Fund” (CPAF) on behalf of BMZ in 2006 as a foundation according to German law. The southern Caucasus nations can apply for grants of up to 50% from this foundation. To date, two protected areas in Georgia and Armenia have been supported by the CPAF.

Funding is provided for management plans, the cost of the rangers who protect the conservation areas against poaching and illegal logging, maintenance of the network of paths, trails and emergency shelters, as well as for staff training.

Today, the foundation has an endowment capital of nearly EUR 10 million. This is thanks to the participation of the German Government and international environmental foundations like Conservation International and the WWF, along with solid financial management. Various donors, including the German Government, have pledged a further EUR 8 million. In total, some EUR 50 million of endowment capital is required in order to support all of the protected areas in the Caucasus which are important for the conservation of biodiversity.

Nature conservation in the Caucasus Region requires a long-term financial basis.
For many people in Namibia, the forest supplies firewood, construction materials and food.

In Namibia, a country situated between two deserts, larger forested areas are only found in the northern regions. Here, the forest is an important source of livelihood.

However, these forests are under threat particularly from overexploitation and illegal logging: according to the evaluation of satellite images, the land area covered by forests in the Caprivi, Kavango and Otjozondjupa regions is decreasing by 2 to 3% every year. If this trend continues, the current 61,000 km² of tree savannah and forest lands in the northeast of the country will halve in size within just 25 years.

For this reason Namibia launched a sustainable forest management project in 2004 which is supported by KfW Entwicklungsbank with EUR 5.5 million and by the German Development Service (DED). Here, the state-run forestry commission transfers usage rights for the forest and tree savannah to the local communities. Interested communities and the village forestry committees set up by them are granted these rights with the requirement and obligation to conserve, protect and invest in the forest. Training is provided covering issues relating to forest care and maintenance, reforestation, cutting forest aisles in order to stem the spread of bush fires, as well as on sustainable use.

The first community forest was designated in 2006, and by the start of 2010 the number had risen to 13 with a total land area of some 465,000 hectares. With around 36,000 people already profiting directly or indirectly from this development, a further 43 community forests are in the formation phase.

Local communities have now branched out their use of the forests to generate additional sources of income. One example is the devil’s claw, which is one of the most important medicinal plants in the country and in great demand in the European pharmaceutical industry. The oil from mongongo nuts (also known as manketti nuts) and from marula fruit is in high demand in the cosmetics industry in Europe and the USA. The dead wood is used as firewood and for wood carvings.

The people here have long understood that, as the forest is their source of income and the basis of their livelihoods, they have a duty to conserve and protect it. During the inauguration ceremony for a community forest, one of the village elders made an enthusiastic appeal: “Let us all work together to take good care of the forests.” Compliance with regulations is now monitored, and anyone who cuts down wood without a licence faces harsh penalties.
The national parks conserve Africa’s biodiversity.

Central Africa’s Congo Basin is a paradise for elephants, lowland gorillas, chimpanzees and bongo antelopes. Three national parks come together across an area of 28,000 km² (approximately 30 times the size of Berlin): Lobéke in Cameroon, Dzanga-Ndoki in the Central African Republic (CAR), and Nouabale-Ndoki in the Republic of Congo. Numerous rivers feed into a forest region with a unique diversity of animal and plant species.

This paradise was long under threat: industrial exploitation of the forests commenced in the early 1970s. Corrupt government officials did nothing to stop either the wood barons or the increasing levels of poaching. Sawmills and workers’ quarters in the forest restricted the animals’ habitats even further.

With support from Germany, the governments of these three countries have drawn up management concepts for the parks and their border areas. Park officers and armed gamekeepers on patrol are allowed to move freely across borders into the protected areas. One problem is the continued lack of adequate funding for the park management. Only a fraction of the ongoing costs of more than EUR 1 million per year can be met by revenue generated from tourism, since the lack of hotels and roads will probably also keep the number of visitors at a relatively modest level in the future.

A regional environmental foundation, the “Fondation Tri-National de la Sangha”, was founded as the basis for sustainable financing of the parks. Its work is supervised by a supervisory board made up of representatives from the governments and civil society of the three countries, KfW, AFD, WWF and the Wildlife Conservation Society. Using the interest earned from their targeted trust fund of EUR 30 million, the operators can set up bases, purchase equipment, carry out repairs and pay the patrols which last for several days. This financing structure enables long-term planning and efficient implementation of the necessary measures required to preserve biodiversity and for sustainable development of the border regions.
At around 1.5%, the rate of deforestation in Ecuador is the highest in Latin America. This corresponds to a loss of around 30,000 km² of forest, or more than 10% of the total land area of Ecuador, during the last 20 years. The causes for this include continuing development pressures resulting from oil and gas production, illegal logging and the expanding “agricultural front” with large-scale plantations and grazing lands.

In view of the great importance of forest conservation in terms of climate protection, the German Government is supporting the forest conservation efforts in Ecuador through KfW and GTZ within the framework of a REDD initiative with a total of EUR 14 million. At the heart of these efforts is the Socio Bosque (PSB) program, which was launched in 2008 at the initiative of Ecuador.

Provided certain conditions are met, PSB rewards forest conservation by making offset payments to forest owners and thus offers an economically viable alternative to deforestation. Although the incentives are low (USD 0.5 - 50 per hectare and year), they are very significant particularly for indigenous communities and Afro-Ecuadorian communities. Demand is correspondingly high. PSB signs agreements for a period of 20 years with the partners – either local communities or private individuals – and checks compliance with the terms of the agreements once a year. At present, around 400,000 hectares of forest are being conserved with the available PSB funds – but the actual demand is estimated as being 10 times as high.

In addition to the program for small-scale farmers and indigenous groups, the Ecuadorian Government is also improving the way the wood industry is monitored and controlled. For example, an innovative Internet platform was introduced in 2009 in order to record and monitor approvals and licences for forest use. In addition to direct funding measures designed to secure the conservation of further forest areas, one of the main objectives of German-Ecuadorian cooperation is to access additional international funding for REDD, so that sustainable financing is secured for its tasks.
WORLDWIDE COMMITMENT

AN OVERVIEW OF KFW ENTWICKLUNGSBANK PROJECTS FOR THE CONSERVATION OF FORESTS AND BIODIVERSITY BY COUNTRY

Total volume of forest and biodiversity conservation projects (incl. REDD) supported through KfW Entwicklungsbank

<table>
<thead>
<tr>
<th>Region</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Europe</td>
<td>EUR 58 million</td>
</tr>
<tr>
<td>Asia</td>
<td>EUR 272 million</td>
</tr>
<tr>
<td>Africa</td>
<td>EUR 310 million</td>
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<tr>
<td>Latin America</td>
<td>EUR 475 million</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>EUR 1.1 billion</strong></td>
</tr>
</tbody>
</table>

Existing portfolio as of May 2010

- REDD cooperation countries
- Further cooperation countries for forest and biodiversity conservation projects
- Further FC partner countries
- Regional offices of KfW Entwicklungsbank and DEG

May 2010
Conserving forests to protect our climate