

# ITTO Tropical Forest

## UPDATE

A newsletter from the International Tropical Timber Organization to promote the conservation and sustainable development of tropical forests



## Climate changing for tropical forests

This issue of TFU is published as substantial levels of assistance start to flow to some tropical countries through various climate-related initiatives. This is indeed a welcome development for these countries. As ITTO and others have pointed out for many years, it was always unrealistic to expect one (usually under-valued) resource – timber - to fund the bulk of the costs tropical countries incur to sustainably manage tropical forests and maintain the myriad benefits they provide. Now that funds are starting to flow to tropical countries via international REDD initiatives and voluntary carbon offset projects, there is hope that the hitherto intractable problem of loss and degradation of tropical forests can at last begin to be stemmed and reversed.

In order for this hope to be realized, a lot still needs to happen. While voluntary carbon markets and bilateral initiatives will remain important, the billions of dollars that ITTO and others have estimated are required to safeguard and sustainably manage tropical forests will require a concerted effort from the entire global community. While negotiations underway in the UNFCCC (most recently in Poznan, Poland last December) are a cause for tempered optimism in this regard, the potential to channel resources to tropical forests under any successor



**Inside** ▶ *Carbon trading in Philippines*  
 ▶ *Land-use carbon credits* ▶ *CDM and forestry...*

# Contents ▶

... Editorial continued

Editorial .....	1
Great expectations .....	3
Carbon trading in the Philippines ..	6
Emerging market for land-use carbon credits .....	9
Wood-based bioenergy .....	12
The CPF's strategic framework for forests and climate change ...	16
UN-REDD ready for action .....	17

## Regular features

Fellowship report .....	19
Recently funded projects .....	22
Market trends .....	24
Recent editions .....	27
Topical and tropical .....	29
Meetings .....	30
Out on a limb .....	32

to the UNFCCC's Kyoto Protocol, which expires in 2012, will have to be improved significantly over present arrangements in order to have any impact. As the first three articles in this issue make clear, the level of assistance provided to tropical forests through the Kyoto Protocol's existing Clean Development Mechanism (CDM) has so far been a bitter disappointment to many.

The need for sustainable forest management (SFM) to be part of any scheme to reduce deforestation and forest degradation in the tropics is becoming generally accepted. The role of conservation and forest management in reducing carbon emissions from tropical forests is now part of the negotiating text for UNFCCC delegates, and most people now agree that simply rewarding countries for reversing deforestation will probably displace the problem to other places in the tropics that have so far kept their forests relatively intact. A recently published paper<sup>1</sup> by several prominent foresters shows that improved management (including reduced impact logging – RIL) led to a drop in tropical forest carbon emissions of about 30% relative to conventional logging practices, leading to potential emission reductions of at least 10% of those possible from eliminating tropical deforestation at relatively low costs. ITTO continues to argue that SFM must be part of any scheme to reduce emissions from tropical forests and that its work to monitor and report on SFM in the tropics can play a key part in helping to implement any such scheme.

ITTO also sees a need for enhanced private sector engagement in global forest carbon initiatives. This includes companies from outside the forest sector seeking offsets, the market for which is growing rapidly (page 9), although the recent global economic turmoil has depressed carbon prices along with everything else. ITTO has recently signed an agreement to promote SFM and conservation for voluntary carbon offsets in three tropical pilot forests with 7&i, the Japanese parent company of the 7-11 convenience store chain, and other such agreements are in the works. However, the tropical forest industry should also become more engaged in international climate negotiations since they stand to gain from any agreements reached to promote SFM

and through other emerging opportunities like bio-energy (page 12). ITTO's close links to the forest sector in tropical countries can help to ensure their closer involvement in these processes.

At its November 2008 session, the International Tropical Timber Council approved a pilot thematic program on Reducing Deforestation and Forest Degradation and Enhancing Environmental Services in Tropical Forests (REDDES). This multi-year, multi-million dollar program, to be implemented in close collaboration with partners involved in related CPF (page 16) and UN-REDD (page 17) initiatives, will include activities focusing on SFM and private sector engagement, as well as assessment and monitoring work, capacity building and demonstration projects. Local communities and forest dwellers will also be targeted by REDDES, given their vital roles in contributing to sustainability in many tropical forests.

Initial funding for REDDES (\$3.5 million) has been provided by Norway, which has been a global leader in jump-starting many international and bilateral forest carbon initiatives (see *Out on a Limb*). ITTO looks forward to engaging with other donors, key partners and its member countries as it implements the REDDES program, thereby contributing to both SFM and the global fight against climate change.

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<sup>1</sup>Putz F.E., Zuidema P.A., Pinard M.A., Boot R.G.A., Sayer J.A., et al. 2008. *Improved Tropical Forest Management for Carbon Retention*. PLoS Biol 6(7): e166 doi:10.1371/journal.pbio.0060166



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**Cover image** Madidi National Park, Bolivia. Photo: H. Castro

## **Why there are so few forestry projects under the Clean Development Mechanism**

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**Pot of gold?:** Cenepa river, Tambopata, Peru. *Photographer: C. Chavez*

**T**here were high hopes and expectations for financing sustainable plantation practices in tropical forests when the Kyoto Protocol was adopted in December 1997 within the United Nations Framework Convention on Climate Change (UNFCCC), since the Protocol's Clean Development Mechanism (CDM) allowed for afforestation and reforestation (A/R) activities in developing countries (so-called non-Annex-I countries to the UNFCCC). It was estimated that a maximum of 121 million tonnes of carbon dioxide equivalents (Mt CO<sub>2</sub>e) per year could be traded based on the upper limit of 1% of participating Annex-I Parties' base-year emissions times five (Haite 2004). This meant that even at the low prices of US\$ 3 to 5 per tonne of CO<sub>2</sub>e A/R CDM activities had the potential to raise US\$360–600 million per year during the first commitment period, although net benefits were expected to be somewhat lower once the transaction costs of Certified Emission Reductions (CERS) were taken into account.

***Afforestation and reforestation project activities have been the least successful among all the sectors covered by the CDM in spite of efforts by several national and international bodies including ITTO.***

These hopes have not been fulfilled to date. Afforestation and reforestation project activities have been the least successful among all the sectors covered by the CDM in spite of efforts by several national and international bodies including ITTO. This article provides a brief overview of ITTO experience related to A/R CDM projects and reviews technical challenges of accounting for carbon stock changes in A/R CDM and in more recent schemes for reducing emissions from deforestation and forest degradation in developing countries (REDD). It then discusses governance concerns regarding forestry mitigation

options and changes that may be considered for A/R CDM projects under the Kyoto Protocol's second commitment period.

### **ITTO experience**

ITTO has always recognized the valuable ecosystem services rendered by tropical forests. Such ecosystems include habitat for millions of species, produce a large proportion of the world's supply of fresh water, and are crucial in the global carbon cycle.

An early attempt by ITTO to promote the valorization of environmental services was the Colombian pilot project "Alternative Financing Model for Sustainable Forest Management in San Nicolas" (PD 54/99 Rev.1 (F)) which is currently finalizing its second phase (PD 240/03 Rev. 1 (F)). CORNARE (Regional Autonomous Corporation of Rio Negro – Nare), the co-executing Swiss agency EMPA (Swiss Federal Institute for Materials and Technology Research and Testing), the municipalities and the community in Valles de San Nicolas jointly developed these projects in the north-east region of Antioquia. The objective of the projects has been to test an innovative financing method that combines sustainable management of tropical forests with the potential that the CDM of the Kyoto Protocol offers the forest sector. The project has produced a master management plan that includes conservation, plantations, agroforestry and restoration activities. Based on this master plan, carbon sequestration and greenhouse gas (GHG) emission reductions were calculated. The methodology developed by this project was approved by the CDM Executive Board in 2008 after a delay of several years and the project is now in the process of validating its methodology. The project has signed a purchase contract with the BioCarbon Fund for any CERS produced until 2012 and has also negotiated GHG emission reductions from reduced deforestation and forest degradation in the voluntary market. In order to achieve these results the project has

facilitated the creation of the *Corporación MASBOSQUES*, a public-private partnership responsible for the implementation of the plan as well as for the carbon business, developed capacity building schemes for understanding the carbon potential of forestry and produced several inputs for the negotiations on A/R CDM.

These initial experiences demonstrated the need to support capacity building in ITTO producer members. ITTO consequently joined forces with concerned international organizations and non-governmental organizations to build the capacity to develop and implement A/R CDM project activities. ITTO published a guidebook for the formulation of A/R CDM projects with the assistance of Winrock International. Since 2006, ITTO has also organized six regional workshops<sup>1</sup> to promote the understanding of the rules and procedures of AR-CDM and encourage country level initiatives in promoting A/R CDM project activities in line with the *ITTO Guidelines for the Restoration, Management and Rehabilitation of Degraded and Secondary Tropical Forests*.

The six regional workshops have provided training for more than 300 technicians and policy-makers in ITTO producer member countries. The workshops served to enhance knowledge and understanding of A/R CDM projects (including project design and baseline establishment/ monitoring methodologies), as well as financial and investment issues, among the forestry professionals of ITTO member countries. Support for development of six pilot projects in Africa, Asia and Latin America has been provided with the aim of initiating A/R CDM projects in these continents.

## Slow progress

In spite of the many efforts made by international, regional and national organizations, the contribution of afforestation and reforestation to the generation of carbon credits under the CDM has been negligible so far. Only 1% of CDM projects registered as of late 2008 have been in the forestry sector. ITTO's experience has shown that developing A/R CDM projects is very time consuming and expensive due to complicated rules and modalities. The difficulties identified can be categorized as technical and economic. They include the lack of capacity to identify, formulate and implement A/R CDM projects in accordance with the modalities and procedures of the CDM project cycle as well as the underlying inability of project developers to attract financing to allow for the implementation of these projects. This situation is aggravated by the lack of seed capital and technical capacity to kick-start the project development process. The following sections provide detailed descriptions of the causes of the extremely slow progress to date in implementing A/R CDM projects.

### Technical causes

*Five pools to account for.* Carbon in forestry mitigation activities can be found and measured in five so called "pools" or "reservoirs": Below-ground biomass, above-ground biomass, litter, dead wood and soil organic carbon. Ideally, data should be collected for changes in carbon stocks in all five pools, but doing so in an accurate and cost effective manner remains a major challenge. In order to facilitate the calculation of such changes, models and algorithms have been developed, especially for the two first pools. However, basic

information on carbon stocks and stock changes in each pool remains scarce and/or inaccurate, particularly in developing countries. Hence, Parties to the Kyoto Protocol have agreed that A/R CDM project proposals may choose not to account for one or more carbon pools, as long as the excluded pool is not a net GHG emitter (Decision 19/CP.9, later adopted by the Parties to the Kyoto Protocol as Decision 5/CMP.1).

*Difficulty in selecting eligible land.* The first criteria for an A/R CDM project is that the land involved is eligible. If the activity involves reforestation, the land must have been categorized as non-forest as of 31 December 1989 and at the beginning of the project. If the project involves afforestation, then the land must have been categorized as non-forest for the past 50 years. Evidence of land categorization is to be provided by project proponents. While it is not compulsory, validating land categorization invariably requires satellite images at least for the year 1989. These are almost always very difficult or impossible to obtain. When available, such images are often of poor resolutions that can not conclusively establish the status of land in the reference year and require a high level of capacity and equipment to analyze reliably.

*Quantification of carbon potential.* Each A/R CDM project has to quantify the potential sinks of carbon (C) during the project duration. This involves comparing the sinks with and without project activities, with three factors to be considered: baseline, additionality and leakage. The baseline is the change in C without the project, while the additionality is the changes in C with the project. The concept of leakage refers to additional emissions due to implementation of the project that happen outside the project border (e.g. GHG emissions due to increases in oil consumption for transportation of timber products). The C sink potential is calculated as:

$$C(\text{potential}) = C(\text{in the additionality}) - C(\text{in the baseline}) - \text{leakages}$$

The Executive Board of the CDM has approved methodologies and tools for making these calculations. These are highly complex, require a high level of expertise and require significant amounts of data that are often not available.

*Permanence.* Non-permanence in A/R CDM projects is dealt with using short-term credits (CERs). There are two options a) temporary credits or b) long term credits<sup>2</sup>. These credits have a lower price than credits from the energy sector, where the question of permanence is not considered, making A/R CDM projects less attractive.

*Data deficiency.* The carbon potential of an A/R CDM activity can only be established with accurate data on growth, root-shoot ratio, wood density and biomass volume tables of all the existing species in the area. Growth data of the species to be planted is also required. Estimates of non-CO<sub>2</sub> greenhouse gas emissions during the project activities (e.g. arising from use of fertilizer and irrigation) are also required. Such data are rarely available and the default data provided by IPCC is very sketchy, not covering many tropical forestry species. This makes the ex-ante and ex-post estimation of carbon sequestration required in A/R CDM projects a very time consuming, costly and difficult exercise.

### Economic causes

*Development costs.* The costs of developing an A/R CDM project, validating it under the CDM rules and getting it registered are beyond the reach of most developing nations. There have been few concerted efforts by developed

<sup>1</sup> ASEAN-ITTO Regional Workshop on Perspectives of CDM Forestry Projects in Asia and The Pacific (Phnom Penh, Cambodia, 22-24 March 2006); ITTO Workshop on AR CDM for Sub-Saharan Africa (Accra, Ghana, 2-6 October 2006); Latin American Regional Workshop on Afforestation and Reforestation Projects Development (Lima, Peru, 19-23 March 2007); African Regional Workshop on Afforestation and Reforestation Projects Development under the CDM (Abidjan, Côte d'Ivoire, 23-27 June 2008); Asia-Pacific Regional Workshop on Afforestation and Reforestation Projects Development under the CDM (Seoul, Korea, 8 - 12 Sep 2008); and Latin American Regional Workshop on Afforestation and Reforestation Projects Development under the CDM (Puerto Vallarta, Jalisco, Mexico, 29 September - 3 October 2008).

<sup>2</sup> Temporary CERs expire at the end of commitment period subsequent to the commitment period for which they are issued; long-term CERs expire at the end of the crediting period of the afforestation or reforestation project activity they were issued for.

countries and their bilateral aid agencies to provide adequate seed funds for project development. Since there has been only one A/R CDM project approved as of late 2008, there are few examples to guide project proponents and every step in project formulation is therefore a new step in unknown territory. This is a significant deterrent to the formulation of new A/R CDM projects.

*Validation costs.* The “conservative approach” advocated by the CDM has led to a situation in which every doubt is counted as a proven flaw and every uncertainty results not in adoption of a statistical range for a given variable but its most conservative value. The validation process is often delayed, with more visits and working days of validating agencies required to ascertain any deviation from these conservative values, increasing validation costs.

*Costs of monitoring C.* Accuracy requirements in measurements of C during the project length are very high, with direct consequences for the number of plots and the frequency of monitoring activities (and therefore costs).

*Cost of verification and certification of C.* Although there is no verification process in A/R CDM yet, the lack of experience of all parties involved are expected to lead to high costs for validation and certification processes.

*Lack of financing.* Another difficult challenge for project developers has been the identification of investors or project donors at an early stage of project development. There is a major challenge of developing innovative financing mechanisms (e.g. private-public partnerships) for A/R CDM projects.

*Reduced access to markets.* The exclusion of carbon credits from tropical forests in the EU Emissions Trading Scheme (ETS) has had a negative impact on A/R CDM project activities for generating funding for tropical forests. In addition to the technical challenges in promoting A/R CDM, integrating carbon credits from tropical forests into the existing carbon markets such as EU ETS will be extremely important to create greater supply of forest-based carbon credits which would represent the value of conserving biodiversity plus carbon sequestration with the engagement of indigenous peoples and local communities. Identification of policy approaches and positive incentives on issues relating to REDD; and the role of conservation, SFM and enhancement of forest carbon stocks in developing countries is emphasized in the UNFCCC's Bali Action Plan. If the UNFCCC is to be successful in reducing emissions while strengthening carbon sequestration as an important mitigation activity, it must address increasing markets for forest-based carbon credits which would allow Annex I Parties to meet a percentage of their total emissions reduction targets through the purchase of more forest carbon credits. In this respect, the 1% ceiling on the use of A/R CDM sink credits by Annex-I countries should be reviewed, taking into account the co-benefits of forest-based carbon credits compared to those provided by any other sector.

## **Governance concerns regarding mitigation options in forestry**

Besides the technical challenges of accounting for changes in carbon stocks in tropical forests, a major concern of many promoting the maximum use of mitigation options in forestry to contribute to sustainable development remains the impact of governance on any mitigation option. Parties to the UNFCCC require a regulatory system that promotes or at least allows the implementation of mitigation options in coordination with other developments in the forest sector.

A key issue in this respect is the need to clarify tenure and use rights not only for land but also for the five carbon pools. The fact that forest owners and users are in many cases not the same has implications for forest management. Even more important is the fact that hundreds of millions of

people living in or near forests and making use of forest lands and resources have no or few secure rights nor tenure over these lands and resources. In many cases, the lack of rights and tenure is directly related to their poverty and to the destruction and degradation of those resources.

For the first commitment period, the A/R CDM regulations require that “changes in circumstances within the project boundary that affect legal title to the land or rights of access to the carbon pools” be clarified and be subject to monitoring and verification (Dec. 19/CP.9). In cases where the ownership of the pools is not clear or when different carbon pools have different owners, it is extremely difficult to determine who owns the carbon credits. If there is no clarity of ownership for CERS, any market transaction can be questioned, bringing many difficulties for both credit sellers and buyers. This difficulty can be solved at the level of national legislation or by using specific and clear agreements and contracts between the owners of carbon pools in a given project.

For a post-2012 climate change regime, the concerns related to the CDM will remain and new concerns related to REDD and ownership of forest land will gain importance. The key question remains: who owns the emission reductions and therefore who should be compensated for emission reductions? If there is a payment scheme (market or non-market based) how are these payments to be distributed between owners and users?

## **Conclusion**

Less than one year remains before the UNFCCC's COP 15 in Copenhagen to review the rules and procedures of A/R CDM. Unless there are substantial modifications to the current rules and procedures, A/R CDM projects are unlikely to become any more common in tropical forests in the second commitment period of the Kyoto Protocol.

It is hoped that Kyoto Protocol negotiators will work towards simplification and streamlining of A/R CDM project requirements as well as providing credit opportunities for forest restoration and sustainable forest management activities in the second commitment period. Forging a decision in Copenhagen to simplify A/R CDM project requirements will depend upon how key constraints of A/R CDM are defined, and how common understanding on such issues can be developed. A sounder and more cost-effective framework for carbon sink projects under CDM will help to promote sustainable management of tropical forests through constituting a payment for an important ecosystem service provided by them.

## **Acknowledgement**

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# Carbon trading in the Philippines

**Numerous challenges to overcome for smallholders to benefit**

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**Growing trees takes time:** If carbon trading is not profitable smallholders won't participate. Photo: A.E. Pasa

**F**orests provide enormous environmental services to various societies on earth. However, in many countries – such as the Philippines – the undue pressure imposed on forests by increasing populations has relentlessly damaged these ecosystems. The Philippines was the world's leading tropical hardwood producer in 1975, but became a timber-importing nation in 1994 (Chiong-Javier 2001). The Philippine Government has since designed various programs to protect and conserve the remaining forest<sup>1</sup>. The Community-Based Forest Management Program (CBFMP) introduced in 1995 in particular recognized the indispensable role of local people in managing the remaining forest resources in the country. The focus of forest management has thus shifted from technical commercial forestry to a more people-oriented social forestry. The more recent scenario is a paradigm shift in the forestry sector to small-scale, multiple-product-based, people-oriented, and community-based sustainable forest management (Mangaoang 2002). However, improving the socio-economic condition of the rural populace (particularly smallholders) remains a challenge for the Philippine government.

**The focus of forest management has thus shifted from technical commercial forestry to a more people-oriented social forestry.**

One opportunity for farmers to increase their annual income is through some form of payment for the environmental services they provide, since vegetation in their small-scale tree farms, agroforestry farms and Community-Based Forest

Management Projects undoubtedly sequester and store carbon, enhance biodiversity as well as conserve soil and water resources. At present, however, there is very limited information in the Philippines about rewards and rewarding approaches with reference to forest environmental services. This is particularly true in the case of carbon trading mechanisms. This article attempts to fill this information gap.

## **Rewarding environmental services**

Rewarding – or as more commonly known – payment for environmental services (PES) is an emerging initiative in forestry and agroforestry development programs. For example, the program 'Rewarding the Upland Poor for their Environmental Services (RUPES)' explores new ways of addressing poverty (Van Noordwijk 2007). The goal of the program is to enhance livelihood and resource security for the upland poor in Asia, and maintain or enhance environmental functions (De los Angeles 2007). Opportunities exist for local farmers to maintain or restore local agro-ecosystem functions that protect watersheds, conserve biodiversity and sequester carbon. These include financial incentives and resource security that promote conservation. In addition, new market mechanisms that have the potential to reward the upland poor communities for effective and sustainable natural resources management, are emerging. These opportunities are supported by the global political commitment of halving poverty by 2015 (RUPES 2002).

RUPES trials are currently underway at the Kalahan Reserve in Luzon, the Philippines and Kulekhani watershed in Nepal (Chandler 2004). Other trials are being conducted in Bakun Reserve, an indigenous cultural community in northern Luzon, the Philippines as well as in Singkarak and Bungo, Indonesia (Van Noordwijk 2007). While there is no carbon trading

<sup>1</sup> These include the Integrated Social Forestry Program (ISFP), Upland Development Program (UDP), National Forestation Program (NFP), Forest Land Management Program (FLMP), Low Income Upland Communities Project (LIUCP), Community Forestry Program (CFP), Regional Resources Management Project (RRMP), Forestry Sector Project (FSP), and Community-Based Forest Management Program (CBFMP) (Harrison et al. 2005).

yet by the two trial sites in the Philippines, both are working towards this (Pindog and Rice 2007).

## **Carbon trading**

Currently, the Philippines is implementing three World Bank-supported greenhouse gas (GHG) emission reduction projects. These include the watershed rehabilitation project of Laguna Lake focusing on reforestation and agroforestry, the Laguna de Bay watershed project focusing on methane emission reduction from waste management projects and the North Wind Bangui Bay project in the northern tip of Luzon focusing on carbon-free energy generation (www.carbonfinance.org 2007).

Potential opportunities exist for smallholders to increase their annual income through forestry carbon trading. Calderon (2002) pointed out that despite the uncertainties regarding the inclusion of carbon forestry projects under Clean Development Mechanism (CDM), many parties are already engaging in forestry carbon trading. While the price per ton of carbon varies, it is clear that substantial amounts of money are involved. In Australia, the Sydney Futures Exchange has already established a carbon credit trading market, and many carbon emitters are already buying credits from forest growers (AAS n.d. cited by Calderon 2002). In December 2006, the total Carbon Financial Instrument (CFI) volume traded on the Chicago Climate Exchange (CCX) platform was 10 272 400 metric tons (mt) of carbon dioxide while the European Climate Exchange traded 443 496 000 mt of carbon dioxide (CCX 2006).

## **Challenges**

There are several reasons why carbon trading in the Philippines has not drawn much attention among smallholders. These are also challenges that need to be overcome and are described in some detail here.

### **1. Price stability and profitability of carbon**

Carbon as a commodity will be in the form of carbon emission reduction certificates that will be traded between the buying and selling parties. The price will be determined through the interaction of the parties involved. For the sellers, the main consideration will be how much it would cost them to establish and maintain the carbon offset project, as well as the foregone values or opportunity costs. The buyers, on the other hand, would be interested to buy the carbon credits only if these are cheaper than the cost of reducing emissions at source (Calderon 2002). These market forces lead to instability of carbon price per tCO<sub>2</sub>e. The CCX market 2006 report showed that the price of carbon ranged from \$1.75 to \$4.5 per tCO<sub>2</sub>e. A farmer in Claveria, Misamis Oriental, Philippines can earn in 120 days PHP30 000 or \$640 per hectare from growing corn. This means that in a year, a farmer would generate \$1920 (assuming three croppings per annum). If one has a hectare of land planted with *Gmelina arboria* ten years ago with 400 stems having an average diameter of 25 cm and average height of 20 meters, he would have an income of \$3383.65 (assuming 45% of plant biomass is carbon with 15% carbon added from roots, leaves, branches and twigs at \$4.5 per tCO<sub>2</sub>e).

But that return comes only after ten years of growing *Gmelina*. If the farmers in Claveria can earn more than five times per hectare from corn instead of *Gmelina* after ten years, it is no surprise why few have engaged in forest carbon trading. Besides, the risk of planting trees due to diseases, forest fires, and other anthropogenic factors (in view of the long gestation period) is very high. Mercado (2007) concluded that carbon trading would not be attractive to the rural poor unless a more profitable carbon trading mechanism could be established.

### **2. Complicated transactions and the need for intermediary body**

Like in the Philippines, many people in Southeast Asian countries expect substantial financial returns from carbon after a multi-year investment in planting trees. But generating funds from forestry carbon projects through the Afforestation/Reforestation Clean Development Mechanism (AR-CDM) under the Kyoto Protocol is an enormous task. In most cases, smallholders alone cannot solely accomplish the required documents. In Vietnam, SNV (Netherlands Development Organization) as an intermediary organization is helping farmers obtain benefits from forestry carbon through the AR-CDM (Doets 2007). Their work now is in progress but despite their effort, many problems still exist including among others the inaccessibility and variability of spatial and land-use data necessary to develop an AR-CDM Project (Doets, Son and Tam 2006).

Such experiences provide a glimpse of the complicated processes required before benefits from forestry carbon project can be obtained. The presence of an intermediary agency officially designated by the government to support smallholders is crucial. In the Philippines, the Department of Environment and Natural Resources (DENR) could serve such a role since it has regional offices throughout the country that could assist smallholders to benefit from emerging carbon trading.

### **3. Absence of clear trading schemes**

A clear and transparent carbon trading scheme specifying the quantification method, price per tCO<sub>2</sub>e, payment scheme and harvesting modalities is necessary to attract the smallholders. If established, there would be greater flexibility on the part of smallholders to work towards AR-CDM projects or participate in carbon trading schemes. Profitable carbon trading could also result in increased supply of timber for the wood industry as there would be more people engaged in tree farming. Questions regarding carbon price, payment scheme, future utilization of mature trees, the need for designated regional markets where the harvested timber (that passed through carbon trading) could be sold still need to be resolved.

### **4. Small landholdings, land tenure and land ownership**

Aggregating environmental services, particularly carbon, into saleable form from small-scale farms is beset by the issue of land ownership. While it is relatively easy to process

documents from a single, big land owner, it requires more effort to integrate varied aspirations and demands from the fragmented small-scale tree farm owners. This would likely discourage carbon buyers from negotiating with the small land holders unless a unified and smooth agreement can be achieved. Besides, many small-scale farmers may not actually own the land they are currently cultivating. The original owners would still dictate the land use, which might prevent the tenant's participation in any carbon trading scheme.

### 5. Natural calamities

The implementation of a clear and transparent carbon trading scheme in the Philippines is made more complicated by the frequent calamities (particularly typhoons) that have cost the country so much. Millions of dollars in damages to roads, bridges, and public buildings are incurred annually. Due to the prevalence of destructive typhoons, the Philippines National Disaster Coordinating Council must come up with a scheme to insure smallholder tree farms.

### 6. Long-term security and stakeholder participation

Many smallholders are rightly skeptical of poverty alleviation schemes promoted by the government. In the past, the Philippine government implemented several forestry initiatives geared toward eradicating poverty in the rural communities but their success has been marginal. Only when smallholders find that carbon trading truly provides long-term benefits to them will their participation in such schemes be assured.

### 7. Insufficient information dissemination

The Philippines is taking a major and innovative step into a new renewable energy era with the signing of the first GHG reduction purchase agreement (ERPA) for a wind farm project in the ASEAN Region, under the CDM of the Kyoto Protocol ([www.carbonfinance.org](http://www.carbonfinance.org) 2007). The watershed rehabilitation project of Laguna de Bay is also a major and ground-breaking development in carbon trading in the Philippines with potential benefits for smallholders. However, information on these developments has not reached the majority of smallholders. There is still a need to disseminate such information so that necessary steps can be taken by the various stakeholders (including smallholders in the Visayas and Mindanao Islands) to obtain benefits from carbon trading under these and other projects.

## Conclusion

Carbon trading is a potential means by which smallholders could enhance their revenue from small-scale tree farming and agroforestry systems. If the above challenges can be resolved, thereby providing a clear and transparent trading mechanism for carbon, smallholders engaged in tree farming are expected to benefit. Smallholders from selected sites in Leyte Province are already counting on the Philippine government and non-government organizations to help them play a greater role in carbon trading in the country.

The Philippine government intends to establish a PES program in the country. On 9 March 2007, the Philippine government conducted the National Multi-Sectoral Forum on 'Costing for Environmental Services: Implications to Policies' as a formal recognition of the PES program in policy formulation. However, implementing the programs articulated during that forum remains a great challenge. Although initial progress has been made (e.g. the three World Bank-supported projects), expanding the scope of projects to the national level is important.

The government has a clear role to play to ensure that the rural poor or smallholders generate financial benefits from these mechanisms, including establishing links between carbon buyers and seller, providing extension

services to tree farmers, etc. The successful implementation of a clear and beneficial carbon trading scheme in the country will not only provide benefits to smallholders but also widen the supply of timber for the wood industry.

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# Emerging market for land-use carbon credits

**Regulatory momentum and reliable standards support growth**

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**Becoming clearer:** Carbon credits can add value to well managed tropical forests. *Photo: H. Castro*

It is widely accepted that detrimental land-use actions generate at least 18% of global greenhouse gas (GHG) emissions worldwide, mostly from deforestation.<sup>1</sup> FAO estimates global forest loss at about 13 million hectares per year, roughly the size of Switzerland, releasing around 1650 MtCO<sub>2</sub> each year. Despite this significant contribution to global emissions, land-use projects represent less than 1% of the official carbon offset market.<sup>2</sup> The rapidly growing worldwide carbon market was estimated by the World Bank to be worth over US\$64 billion in 2007, more than doubling from the previous year's \$31 billion. The market is estimated to exceed \$100 billion in 2008. Emission reduction projects (offsets) accounted for 21% of the total in 2007, with the remainder accounted for by allowances issued by governments for regulatory schemes under the European Union/Emission Trading Scheme (EU/ETS). Voluntary carbon offset transactions from emission reduction projects were worth \$265 million in 2007.<sup>3</sup>

Within the Clean Development Mechanism (CDM), as of October, 2008, only one Afforestation/Reforestation (A/R) project was approved and registered. An additional 32 A/R projects have been submitted for registration under the CDM and are currently being considered. A drawback to A/R projects under the CDM is that they are not accepted under the current EU/ETS scheme and are exclusively traded on the voluntary market.

***The rapidly growing worldwide carbon market was estimated by the World Bank to be worth over US\$64 billion in 2007, more than doubling from the previous year's \$31 billion.***

In 2007, 18% of traded volume on the voluntary market was accounted for by forestry and agricultural soils projects.<sup>4</sup> Credits from land-use projects often trade at a significant discount to other project types, such as renewable energy,

industrial gas, or fuel switching. Still, voluntary buyers and buyers motivated by emerging regulatory schemes are showing growing interest in purchasing credits from projects previously designated as Land Use and Land Use Change and Forestry (LULUCF), now referred to as Agriculture, Forestry, and Land Use (AFOLU). This new designation accounts for a broader set of project types including A/R, improved forest management, reduced emissions from deforestation and degradation (REDD), and agricultural land management.

## **Evolving regulatory environment**

Expansion of the market for land-use project generated carbon credits is driven by changes in the regulatory environment. The EU has recently made a commitment to address the global problem of deforestation. In the absence of regulatory acceptance, voluntary interest in AFOLU projects from institutional and retail buyers is growing.

Japan recently announced that it will institute a voluntary emissions reduction plan where companies would voluntarily agree to cut emissions. The pricing and allocation of allowances has yet to be determined and the Japanese government is reluctant to impose mandatory compliance measures. Nevertheless, Japan has been an important player in the worldwide carbon market and has been a strong supporter of forestry projects.

When Australia's new government took office in December 2007, it immediately signed onto the Kyoto Agreement and began to put in place its rules for GHG reductions. Australia has set up a climate exchange to trade emission reduction credits, and it has proposed recognizing credits from agricultural land use and forestry and appears to be on track in meeting its Kyoto emission reduction targets.

Pending federal legislation in the U.S. and regional initiatives devising legislation to limit GHG emissions and establish cap and trade systems include acceptance of domestic and international forestry projects as offsets. Given the size of the U.S. regulatory market the impact on the demand for land-use credits will be significant. The Dingell-Boucher Bill currently being proposed to the U.S. House of Representatives includes two provisions for carbon offset credits to fulfill compliance obligations in the future cap and trade program. One provision of the legislation creates a domestic U.S. offset program, enabling qualifying emission-reduction projects within the U.S. to generate credits for use within the cap and trade system. Besides allowing for credits from methane capture and destruction projects, this provision specifies that A/R, forest management, reduced deforestation and agricultural projects would be included. A second provision creates an international emission offset program that allows the use of credits generated from international projects for compliance as well and specially outlines forest restoration and conservation as allowable project types.

### Market standards

In Bali (December 2007), the UNFCCC included REDD on its post-2012 roadmap, with more details expected to emerge from its next COP in December 2009. The World Bank, through its Forest Carbon Partnership Facility, is supporting reduced/avoided deforestation efforts at the country level. In addition, the voluntary market for AFOLU projects is growing and gaining credibility with market participants. To date, six projects, a mix of A/R and REDD, have been approved under the Climate, Community and Biodiversity Standard (CCBS) and ten others are currently being audited. CCBS has limited requirements for carbon accounting for AFOLU projects, but it provides valuable metrics for ensuring social and biodiversity benefits. By contrast, the Voluntary Carbon Standard (VCS) provides guidance for accurate accounting of carbon stocks, leakage, and additionality, though no methodologies have been approved to date. Terra Global Capital proposed the first VCS REDD methodology in September, 2008, which is currently under third party validation. It is anticipated that this methodology will be the first approved under the VCS for REDD.

### VCS best

Table 1. Land-use project types and available carbon standards

CATEGORY	EXAMPLES	CDM	VCS
Afforestation/Reforestation	<ul style="list-style-type: none"> <li>Tree planting with or w/o harvest, on deforested land</li> <li>Agro-forestry on deforested land</li> <li>Assigned natural regeneration, on deforested land</li> </ul>	<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> </ul> deforested prior 1990	<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> </ul> deforested >10yrs prior project start
Avoided Deforestation (REDD)	<ul style="list-style-type: none"> <li>Reduction of degradation and deforestation</li> <li>Enrichment planting or ANR, on degraded lands</li> </ul>		<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>
Improved Forest Management	<ul style="list-style-type: none"> <li>Conversion from commercial to sustainable timber harvesting</li> <li>Extending rotations of harvests</li> <li>Other treatments to restore forest value</li> </ul>		<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> </ul>
Agriculture Land Management	<ul style="list-style-type: none"> <li>Conservation tillage</li> <li>Optimized fertilization (reducing N<sub>2</sub>O emissions)</li> <li>Improved water management rice (reducing CH<sub>4</sub>)</li> <li>Rangeland management</li> </ul>		<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> </ul>

Market growth is being driven by these standards that provide transparency for buyers and sellers, carbon accounting methods that are robust and credible, and registration processes that are streamlined and cost effective. But the methodological approaches of the various standards do vary, as they seek to quantify baselines, leakage, and additionality across varying AFOLU project types. The two main standards currently accepted for AFOLU projects are VCS and CDM. These differ significantly in the types of projects accepted and the details of land eligibility (Table 1).

### Prices

Market prices for carbon credits from REDD projects vary widely and are difficult to compare due to varying terms. Based on a limited sample size, they have to date been observed to range from \$2 to \$12 per ton. While the contribution of VCS and CCBS registration ensures a high degree of carbon accounting and social and biodiversity benefits, it is unclear how much of a premium the market will place on credits with both CCBS and VCS registration. Nonetheless, REDD projects as a whole are anticipated to play an important role in the market for worldwide carbon offsets.

Discrepancies in market prices for land use carbon credits are common because they originate from different project types and the motivations of buyer vary widely. Prices vary with respect to the regulatory framework and standards to which they have been submitted, and reflect the relative value and risks they represent to potential buyers. A recent survey of the voluntary market by Ecosystems Marketplace noted the following prices were reported for voluntary market transactions per ton of CO<sub>2</sub>:

- A/R plantation/monocrop - \$8.20 per ton
- A/R restoration of native species - \$ 6.20 per ton
- Avoided deforestation - \$4.80 per ton
- Agricultural soil - \$3.90 per ton<sup>5</sup>

### Demand side drivers

The impending legislation at the national and regional levels in the U.S. and cap and trade systems being implemented in the EU, Australia and Japan, mean that emission caps will continue to tighten and compliance costs will likely increase. Thus, the need for cost effective abatement solutions is high, particularly given the recent economic downturn. Credits from land use projects will continue to provide a low to medium cost abatement solution for compliance with these regulatory schemes<sup>6</sup> and for voluntary buyers. Since the voluntary market is expected to grow to US \$50 billion by 2012, the demand for land-use projects with desirable co-benefits to voluntary buyers<sup>7</sup> will impact the market growth for land use credits. For pre-compliance

companies and investors, the U.S. market which is predicted to be worth \$1 trillion by 2020, provides an opportunity to invest early in anticipation of increased regulation and market appreciation. With offset credits from forestry projects specifically allowed in all versions of the proposed U.S. legislation<sup>8</sup> it is anticipated that the pre-compliance demand for AFOLU projects will increase over the next 2-5 years.

The Kyoto compliance markets are currently limited for forestry (CDM only allows afforestation/reforestation). Companies with Corporate Social Responsibility (CSR) goals have recently been looking more to buy land-use credits, as they have started to understand the issues of permanence and timing of offsets versus their emissions. These companies are actually looking to land-use projects as a cost effective offset source and additionally they value the co-benefits of increased biodiversity, poverty reduction and improved water quality.

Buyers often focus on two issues beyond the importance they place on accurate carbon accounting. One is permanence: the notion that the offsets created and sold from a project will not be reversed by natural or man-made events that release the project's previously sequestered carbon. The second one is additionality: confirming that that the project resulted in lower green house gas emissions than what would have occurred under a 'business as usual' scenario.

Buyers currently in the market have been categorized as follows:

- Regulatory compliance buyers who need to purchase offsets to meet their regulatory caps;
- CSR companies who purchase credits to meet objectives of environmental responsibility;
- Pre-compliance or early action buyers from corporate entities who will eventually have to comply with a standard;
- Speculators or investors who want to take advantage of possible future price increases; and
- Retail buyers who want to take personal action to offset their carbon footprints.

While each of these buyers has different motivations and pricing objectives, they all need to rely on transparent standards for carbon accounting and the ability to understand the risk related to their carbon offsets purchases.

### **Can AFOLU projects be brought to market in scale?**

It is estimated that reforestation of only 1% of eligible tropical land could give rise to \$5 billion in carbon credits.<sup>9</sup> Each year US \$8 billion worth of carbon (valued at US \$5 per ton) is emitted due to deforestation. Thus the ability for both A/R and REDD to contribute to reducing GHG is significant. However, if forests are to be replanted, stabilized, or deforestation avoided, the developers of such projects will need expertise, capital, and technical support to bring credible projects to market and to implement them. It is also possible that other ecosystem credits including water quality, biodiversity and poverty reduction can attract additional buyers and higher value for bundled co-benefits. The supply of credits from AFOLU projects will be linked to the availability of funding, standards and technical expertise to project developers.

Bringing AFOLU projects to market is a complex matter. Projects have multiple stakeholders and require contributions and coordination across countries, technical skill sets that are not readily available in many developing countries, and a high degree of motivation on the part of local participants.

In-country technical expertise to manage the implementation and monitoring of the projects requires local level capacity to ensure successful outcomes.

Often projects require up-front funding to support startup costs for project development and carbon measurement. Having such funding in place early allows for a better chance of project success. In addition, it must be established who is the legal owner of the credits, and how the transaction can be structured to ensure that credits are only sold once and that a viable counterparty can sign the emissions reduction purchase agreement with buyers. In many countries, it is unclear as to who owns the carbon credits, whether it is actually the land owner, long term land tenants and/or implementer of the project activities. Thus agreements between potential credit owners need to be put in place to ensure that rights to credits are clear between all parties.

Finally, to ensure that income streams can flow fairly to multiple participants, including local communities, revenue flows need to be accurately predicted and mechanisms put in place to distribute carbon benefits. This means that all financial aspects of the project need to be thoroughly planned and monitored effectively, so all costs and revenues can be accounted for and payments made in a timely and routine fashion.

### **Conclusion**

The AFOLU carbon market is growing at a rapid rate. The demand for land-based offset credits will undoubtedly increase further with changes in the regulatory systems of developed countries, and because there is no other single source that could potentially meet this growing demand. The measurement, permanence, additionality, and risk issues of AFOLU projects will be better understood and managed, and as the market matures numbers of buyers and early investors will increase. Such maturation will occur as quality projects are brought to market, transparent and rigorous standards are applied, ample technical expertise to measure carbon is developed, and adequate financing to initiate projects is efficiently sourced.

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- <sup>8</sup> *New Carbon Finance*, Feb 2008
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**Forests can provide tropical countries with a carbon-neutral renewable energy source**

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**Potential energy:** Wood waste at a Cameroon plymill. *Photo: T. Yanuariadi*

For many years, the socio-economic and environmental advantages of forest-based wood energy, an almost carbon-neutral source of energy, have been disregarded or underestimated. Finally, wood-based bioenergy is starting to receive its dues as an asset to forestry, but it still remains to be fully appreciated and implemented in forest and timber-related policies and strategies.

## **Renewable energy makes headway**

Bioenergy and the role of forest resources were among the key issues discussed at the World Food Security Conference held in Rome in June 2008 and during the energy discussions at two G8 summits: in Heiligendamm, Germany, in 2007 and in Hokkaido, Japan, in 2008. At the 14th Conference of the Parties to the United Nations Convention on Climate Change, convened in Poznan, Poland in December 2008, forests were at the very centre of debate.

***Finally, wood-based bioenergy is starting to receive its dues as an asset to forestry, but it still remains to be fully appreciated and implemented in forest and timber-related policies and strategies.***

Recent in-depth assessments of the comparative economic and environmental advantages of various technologies and pathways for energy generation based on renewable energy resources (solar, wind, hydro, biomass) have delivered results very favourable for wood-based biomass. A comparative analysis in Germany has shown that wood-based bioenergy (wood and woodchips) have a striking advantage over agriculture-based bioenergy (biofuels, biogas) in terms of CO<sub>2</sub> mitigation performance, CO<sub>2</sub> mitigation costs and other policy-relevant parameters (Figure 1). On this basis, it was recommended that policies for bioenergy generation in Germany should

focus more on lignocellulose (wood), co-generation systems for woodchip and plant heating systems, energy efficiency, improving resource efficiency (reduce ecological footprint) and energy savings to meet overall socio-economic and environmental policy objectives.

## **Opportunity for forest policy**

Several ITTO-supported studies have shown that substantial volumes of wood residues – up to 50% or more – produced by forest and wood-industry operations in the tropics remain unused. In Brazil, for example, logging residues amount to 600 million tonnes per year that could be used to generate 36 000 megawatts of electricity, the equivalent of three large hydropower stations. Figure 2 shows the different types of waste generated at each stage of the tropical timber production chain.

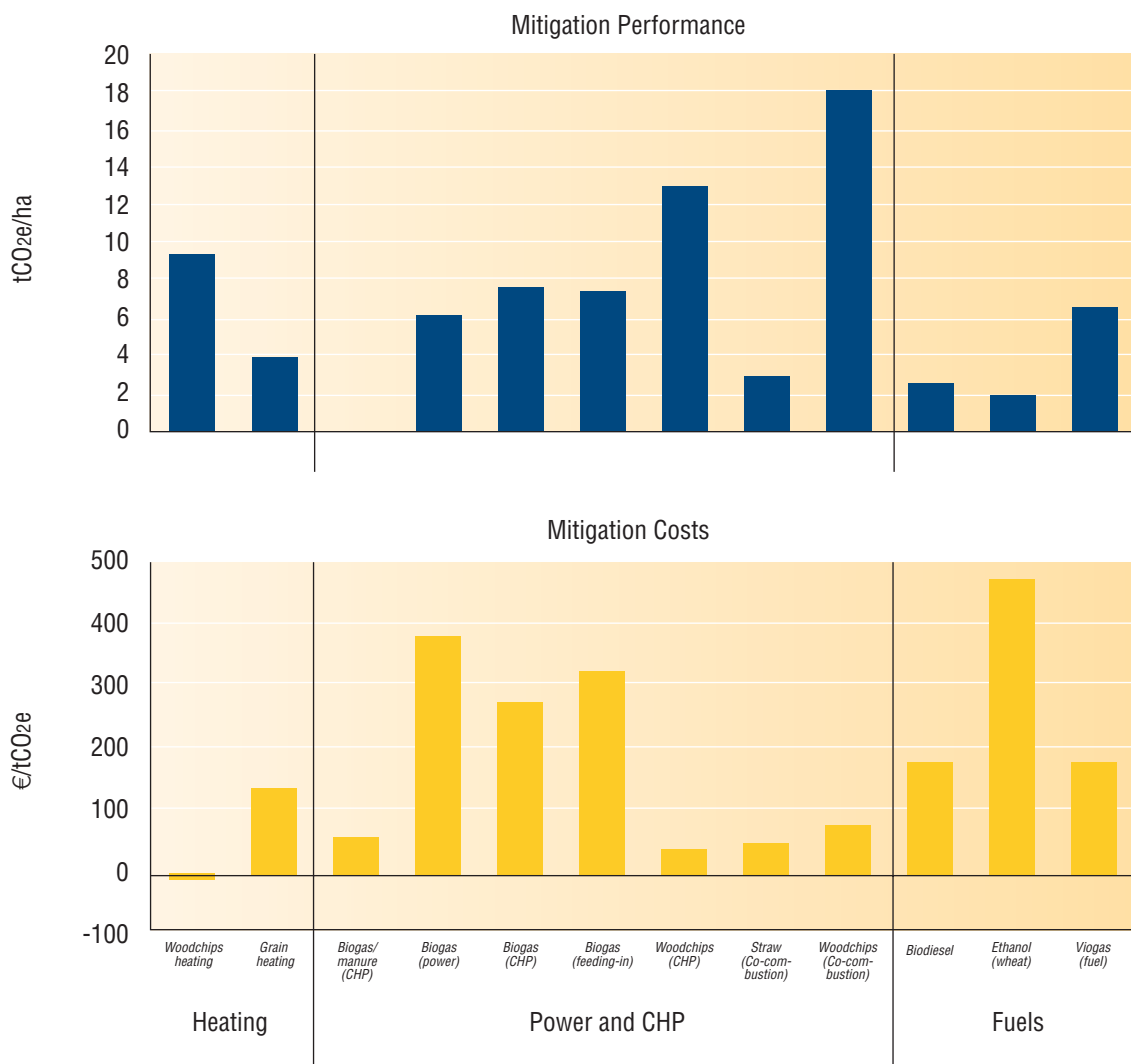
The forestry and timber sector could gain significantly by engaging in bioenergy development and exploiting the advantages offered by wood-based energy resources. Tremendous opportunities exist for turning wood-based residues and wastes into value and wealth through energy production. Timber companies stand to increase their profitability and countries to reduce their greenhouse gas emissions. Moreover, the resultant increased revenues in the forest sector will increase the financial viability of sustainable forest management (SFM).

## **Wood energy is environmentally friendly**

In many countries, wood is coming back into favour as a renewable and climate-friendly source of raw material and energy. On the other hand, there is great concern about the continued high rate of deforestation in the tropics and what this means for climate change, biodiversity and other forest values. The underlying causes of deforestation are varied, but

## Mitigating factors

Figure 1. Performance and cost of different feedstocks



Source: Adapted from Federal Ministry of Food, Agriculture and Consumer Protection (2007).

perhaps the single biggest factor is the competitive advantage of converting natural forests into agricultural land. In many countries, including in the tropics, forest plantations are increasingly replacing natural forests as the primary source of wood and fuelwood supply. The use of wood residues for energy generation offers an additional way of adding value to natural forests, increasing their financial viability and, perhaps, helping to stem the rate of conversion to other uses.

The potential of forests and wood and wood-based bioenergy to contribute to the mitigation of climate change is now almost undisputed. There appears to be a growing understanding, too, that earnings from wood-based biomass and credits for greenhouse gas emission reductions (through, for example, the Clean Development Mechanism) offer considerable potential for supporting the achievement of forest policy objectives under SFM.

### Energy grows on trees

In Hannover, Germany, in 2007, ITTO collaborated with FAO to convene an international conference on wood-based bioenergy (see *Recent Editions*) that delivered five key messages:

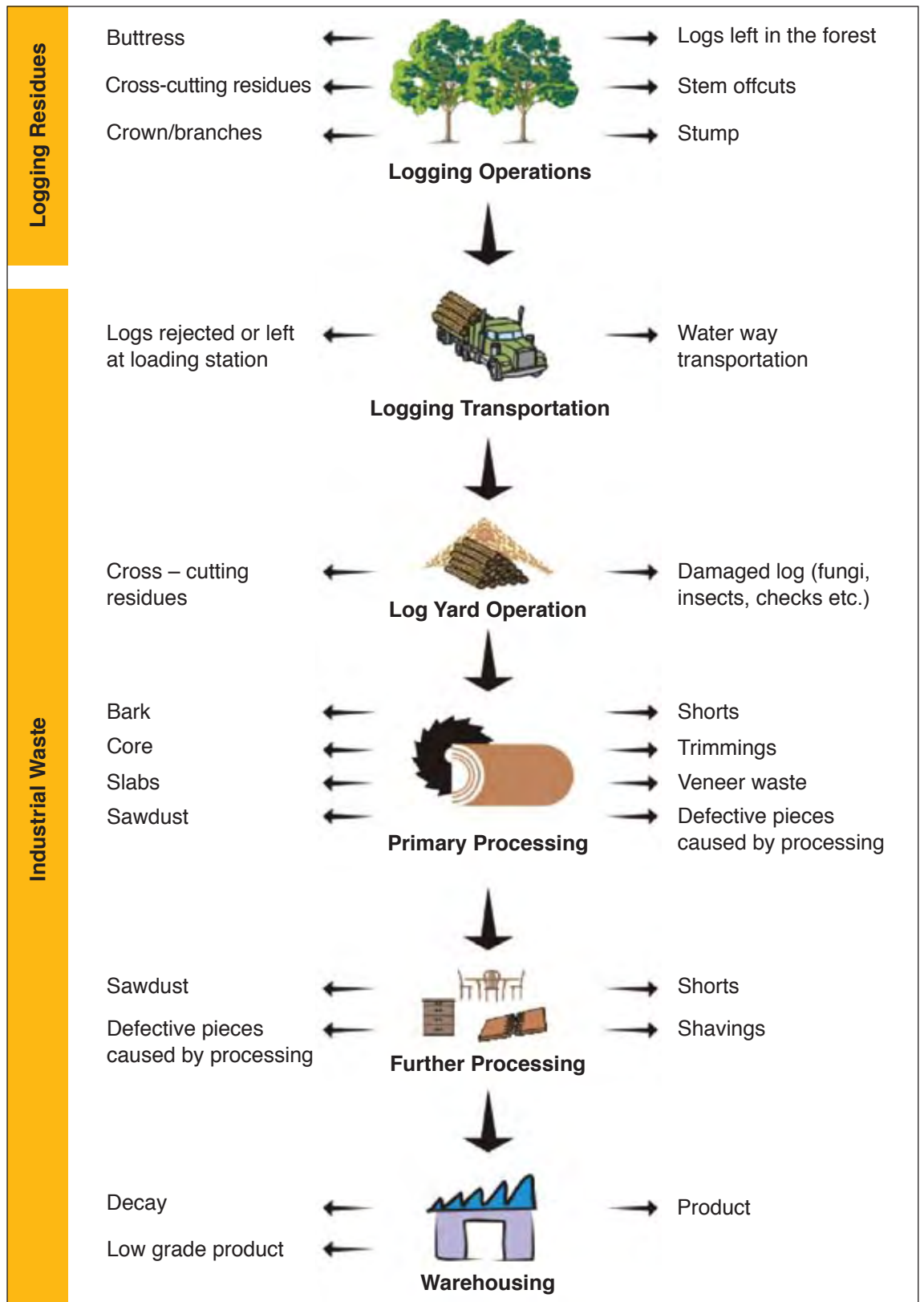
1. wood-based bioenergy offers countries opportunity to improve their energy security;
2. wood-based bioenergy can help reduce emissions of greenhouse gases;
3. the use of wood-residues and wastes allows forestry and wood industries to increase revenue and the cost-effectiveness of their operations and to improve energy efficiency;
4. the wood-based bioenergy sector must be developed on the basis of SFM; and
5. the development of wood-based bioenergy in tropical countries needs to be supported by the international community, including through the transfer of appropriate technology, investment and capacity-building.

The conference also stated four principles that should guide the development of the wood-based bioenergy sector:

1. wood-based bioenergy is a rapidly developing sector. Detailed investigation into its potential and the policy and other measures needed to stimulate it at the country level is warranted;

## Waste flows

Figure 2. Waste generation in tropical timber production chain



- measures to increase the use of wood-based bioenergy must always be within the limits of SFM;
- Policies affecting wood-based bioenergy, and their implementation, should not create undue market distortions; and
- The transfer to developing countries of energy- and resource-efficient technologies for wood-based bioenergy must be a priority.

In November 2007, ITTO decided to follow up this conference by initiating and supporting the development of wood-based bioenergy in tropical timber producer countries through studies and by convening three regional forums on wood-based bioenergy, one each for Africa, Asia-Pacific and Latin America. Each of these forums was to focus on the promotion of wood-based bioenergy using wood residues and wastes.

In cooperation with FAO, ITTO duly convened a regional forum in Africa (Douala, Cameroon, September 2008, supported by GTZ) and in Asia-Pacific (Jakarta, Indonesia, October 2008). The conclusions of these two events not only support the need for ongoing action to raise awareness in member countries on the potential of wood-based bioenergy, but also the need for a roadmap to promote the future development of wood-based bioenergy in ITTO producer countries. A third regional forum is planned in Brazil for Latin America and Caribbean in June 2009.

Few ITTO producer countries have reliable databases on wood-residue supply potential from forest operations and timber processing, although some have benefited from FAO projects based on the WISDOM system to assess and map wood energy resources and to promote the use of standardized terminology. Many countries have noted that traditional supply systems for fuelwood and charcoal at the rural and suburban levels need to be respected when the development of a wood-based bioenergy sector is considered. Awareness of the technical requirements (e.g. machinery for the conversion of wood into energy and byproducts) for building a wood-based bioenergy sector is growing but is still fragmented and more awareness is needed.

Some countries have attracted private investment or built wood-based power plants through public-private partnerships. Several countries are improving technologies for the manufacture of charcoal. Only a few countries have started activities to generate gas or liquid biofuels from wood residues. There is almost no evidence that wood-based bioenergy has been systematically integrated into overall energy policies. Moreover, in only one or two countries do forest policies encompass wood-based bioenergy or set out measures for using the value-adding potential of wood residues or enlarging supply potential through energy plantations.

Both regional forums found that projects for resource assessment and studies to assess available conversion technologies for wood residues and waste were the most important first steps towards the development of effective strategies and policies for the wood-based bioenergy sector. A study to assess best practice and successful policies in countries that have developed their wood-based bioenergy sectors might be helpful for ITTO producer countries. Capacity-building is also essential.

Wood-based bioenergy development could benefit from links to or integration with projects using other forms of renewable energy (solar, wind, hydro, agricultural biomass).

In some cases the combined production of agriculture-based and wood-based bioenergy has brought good results in the co-generation of electricity and heat or the production of biofuels. Cooperation among countries within regions to develop their wood-based bioenergy sectors could create synergies.

## Steps forward

A change of attitude is needed if better use is to be made of wood waste from forest operations. Technological innovations are available to undertake value-adding processing, manufacture and energy generation but in ITTO producer countries are mostly unused. In fact, efficient waste utilization can support tropical producers in embarking on entirely new product lines while at the same time fostering environmental protection. The dumping of waste into landfills and waterways would be reduced. By substituting fossil fuels with wood-based bioenergy, an important climatic gain would be realized. Reductions in CO<sub>2</sub> emissions might generate payback through carbon offset trading. Domestic bioenergy could increase energy self-sufficiency, particularly in rural areas.

The 2007 conference in Hannover was timely, initiating a process of increasing awareness in tropical countries on the large potential and multiple opportunities that wood-based bioenergy offers and setting the stage for the targeted development of the sector. The two regional forums have shown the need to proceed with country-based steps, supported by the regional exchange of information and a gradual building up of cooperation.

The promotion of wood-based bioenergy is clearly consistent with the conservation and sustainable management, use and trade of tropical forest resources. Further steps forward include:

- the integration of wood energy in forest policy;
- improved regional cooperation and alliances for the development of wood-based bioenergy databases, technology and market development; and
- full recognition that wood-based bioenergy is climate-friendly and environmentally friendly and can and should be used to support SFM.

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# The CPF's strategic framework for forests and climate change

By ITTO Secretariat

The Collaborative Partnership on Forests (CPF) is a voluntary arrangement of 14 major forest-related international organizations, institutions and secretariats<sup>1</sup> created in response to a resolution by the Economic and Social Council of the United Nations. All members have substantial programs on forests and they work together to support the implementation of internationally agreed actions towards sustainable forest management, for the benefit of people and the environment.

The CPF recently prepared a strategic framework on forests and climate change with the aim of supporting the United Nations Framework Convention on Climate Change (UNFCCC) process. It lays the groundwork for a coordinated response from the forest sector to climate change, notably through the widespread adoption of sustainable forest management and its integration into broader development strategies.

Through this framework, the CPF aspires to show how forests, when sustainably managed, can play a positive role in climate change mitigation and adaptation. The framework includes the following key messages:

1. Sustainable forest management provides an effective framework for forest-based climate change mitigation and adaptation (see figure).

<sup>1</sup> CPF members are: the Center for International Forestry Research (CIFOR), the Food and Agriculture Organization of the United Nations (FAO), the Global Environmental Facility (GEF) Secretariat, the International Tropical Timber Organization (ITTO), the International Union for Conservation of Nature (IUCN), the International Union of Forest Research Organizations (IUFRO), the Convention on Biological Diversity (CBD) Secretariat, the United Nations Convention to Combat Desertification (UNCCD) Secretariat, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Forum on Forests (UNFF) Secretariat, the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat, the World Agroforestry Centre (ICRAF), and the World Bank.

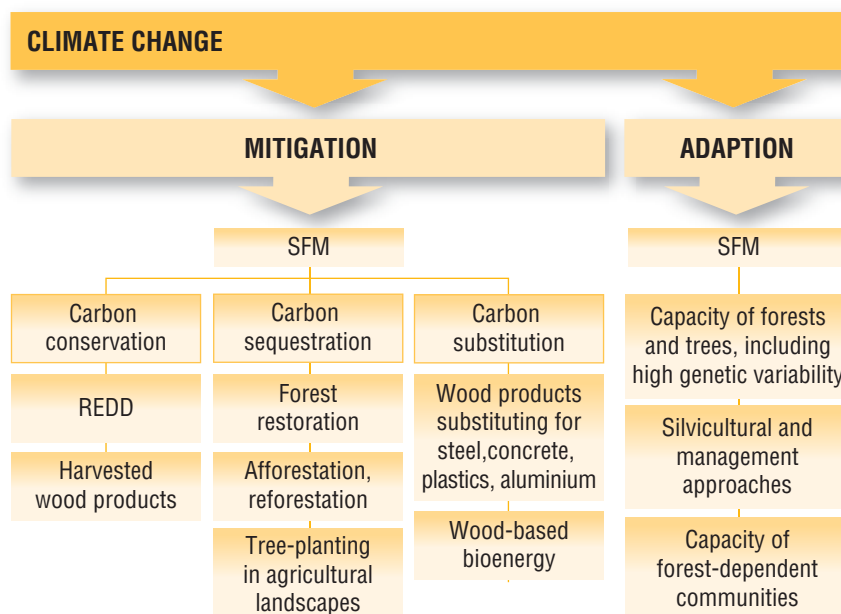
2. Forest-based climate change mitigation and adaptation measures should proceed concurrently
3. Inter-sectoral collaboration, economic incentives, and the provision of alternative livelihoods are essential for reducing deforestation and forest degradation
4. Capacity-building and governance reforms are urgently required
5. Accurate forest monitoring and assessment helps informed decision-making but requires greater coordination at all levels
6. CPF members are committed to a collaborative and comprehensive approach to forest-based climate change mitigation and adaptation.

With their broad experience in the promotion of SFM, forest conservation, poverty alleviation and forest governance, the members of the CPF can greatly facilitate comprehensive approaches to the role of forests in climate change mitigation and adaptation. The CPF itself provides a mechanism by which its members can coordinate their climate-related actions.

CPF members are working together to provide information, support the implementation of SFM, and inform the development and negotiation of forest-based climate change policies at all levels. Within their respective mandates, they are also committed to working collaboratively to assist countries to:

- Incorporate adaptation and mitigation, including REDD and other climate change initiatives, into national forest programmes, and to integrate national forest programmes within national development strategies through multi-stakeholder consultations.
- Build capacity for CPF and forest-based climate change mitigation and adaptation.
- Enhance the biophysical adaptation of forests to climate change while safeguarding the livelihoods of forest-dependent communities and small forest owners and protecting forest biodiversity and other essential forest services.
- Reduce and eventually eliminate unsustainable forest activities, thus reducing greenhouse gas emissions and enhancing forest-based carbon sequestration and storage.
- Enhance capacity to design, monitor, verify and report on their climate change mitigation and adaptation efforts.
- Improve the science-policy interface and ensure that decision-making at all levels is based on timely, reliable and scientifically sound information.
- Explore ways of securing international and national financing and private-sector investment to assist countries in achieving compliance with the provisions of arrangements on climate change and other conventions and instruments related to forests.
- Work in concert with other sectors such as agriculture, energy, transport, urban development and law enforcement towards realizing these elements.

## Possible forest-related responses to climate change



The CPF strategic framework is available online at: <http://www.fao.org/forestry/cpf-climatechange/en/>.



## **\$35 million partnership aims to build strategies for the sustainable management of tropical forests**

**By Peter Holmgren**

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The UN-Collaborative Partnership for Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) is a joint effort between FAO, UNDP and UNEP to combat climate change through the creation of a technical and financial mechanism to reverse unsustainable practices of natural resource management. The UN-REDD program encourages coordinated and collaborative UN support to countries, thus maximizing efficiencies and effectiveness of the organizations' collective input, consistent with the 'One UN' approach advocated by UN members.

The UN-REDD program has two components: (i) assisting developing countries to prepare and implement national REDD strategies and mechanisms; and (ii) supporting the development of standardized solutions and approaches based on sound science for a REDD instrument linked with the UNFCCC. The program helps empower countries to manage their REDD processes and facilitate access to financial and technical assistance tailored to their specific needs. The application of UNDP, UNEP and FAO rights-based and participatory approaches will also help ensure and protect the rights of indigenous and forest-dwelling people. This program will seek and promote the active involvement of local communities, relevant stakeholders and institutions in the design and implementation of REDD plans.

### ***The program helps empower countries to manage their REDD processes and facilitate access to financial and technical assistance tailored to their specific needs.***

Nine pilot countries have been identified for the implementation of UN-REDD: Bolivia, Indonesia, Democratic Republic of Congo, Panama, Papua New Guinea, Paraguay, Tanzania, Vietnam and Zambia.

### ***Features of UN-REDD***

UN-REDD will have an impact at the international and national levels. The program will provide and improve guidance on monitoring, assessment, reporting and verification approaches, with specific actions on remote sensing applications at the country level and training including assessment of forest cover change and forest degradation. It will also increase international mechanisms for engagement of stakeholders on the elaboration of a REDD agenda, and promote successful implementation practices by increasing communication mechanisms including web pages. The program will also improve communication between representatives of indigenous people, civil society and the private sector on the preparation of national REDD strategies and in monitoring and verification of REDD-related information.

The collaborative program will also improve the analytical and technical framework for the assessment, monitoring and verification of REDD co-benefits and implications for decision making processes. Tools for the collection of information related to ecosystems services will be developed and used. Information on socio-economic and cultural variables

identified as drivers for deforestation and forest degradation will also be collected.

### ***Challenges and key considerations***

One of the fundamental challenges for the implementation of UN-REDD is the need to ensure full national ownership of the process. National programs will take account of information needs, capacity building requirements, infrastructure and impact(s) on national laws and policies. Local practices for sustainable forest and natural resources management will be promoted.

The active participation of stakeholders (e.g. governments, private sector, NGO's, research and academics) during the establishment of implementation parameters, assessments of emissions, adoption of technologies for the appropriate management of natural resources, and continuous monitoring requires a permanent facilitation process which will be supported by the partner agencies in countries.

UN-REDD will face challenges of estimating CO<sub>2</sub> emissions and sinks, as well as in monitoring and verifying these at the national level. UN-REDD will also deal with other forest/climate change parameters that have not been well covered in scientific literature, including forest degradation, biodiversity estimations, food security, poverty alleviation and co-benefits. These parameters should also be regularly evaluated, monitored, reported on and verified at the national level.

Transparency in reporting systems will be fundamental, as buyers of reduced emissions will request accurate information, accountability, and verification of their investments, including the level of uncertainties inherent in the reporting process.

Countries will request support to enhance technical and institutional capacities for REDD monitoring, assessment, reporting and verification. International, regional and south-south collaboration is essential to enhance and develop a critical mass of competence. National capacity building will be undertaken according to individual country size, economic and socio-cultural situations, environmental conditions, development priorities, and coordination between existing development processes.

Political commitment and motivation at the highest level for the implementation of REDD in countries is critical to guarantee sustainability. This implies financing mechanisms, provision of human resources, official recognition in accountability systems, legislative mandate, adequate institutional arrangements, public awareness of the process, as well as good communication and information mechanisms.

The following key considerations need to be addressed by UN-REDD:

- Basic accounting parameters for REDD are not known, e.g. how forest degradation is to be incorporated;



**Targeted:** Degraded forest and eroded slopes in Leuwiling, Java, Indonesia. *Photo: E. Muller*

- The economic potential for REDD credits is not known. Nor are possible premiums arising from higher quality/accuracy in accounting, which in turn will determine appropriate levels of investments in monitoring systems;
- Technological and methodological options should be kept open with respect to accuracy, precision, periodicity and other aspects that will determine the level of investment required;
- Within-country implementation of REDD may lead to still unknown requirements for monitoring and reporting at local levels; and
- The role of co-benefits within the REDD mechanism, and the monitoring needs that may be associated with them, is not known.

***Representatives from the UN-REDD collaborative partnership, UN agencies in countries, donor agencies, national authorities and local REDD actors will jointly evaluate the status of the country in relation to forest management; information services and needs; legal parameters; and capacity building and training requests.***

### **Current status and prospects**

Norway has committed \$35 million to UN-REDD and it is anticipated that other donors will also become involved. Country missions were being planned or taking place in each of the nine selected countries in the last quarter of 2008.

Representatives from the UN-REDD collaborative partnership, UN agencies in countries, donor agencies, national authorities and local REDD actors will jointly evaluate the status of the country in relation to forest management; information services and needs; legal parameters; and capacity building and training requests. These missions will prepare reports incorporating national UN-REDD objectives and expectations. The missions will also increase international development partners' knowledge of the forest situation in countries and possible REDD approaches. This will build the foundation for a national UN-REDD program, including mutually agreed areas where support is to be directed.

With the participation of all stakeholders and the requisite political will, UN-REDD may play a significant role in climate change mitigation and adaptation, capable of yielding significant sustainable development benefits and of generating new financing streams for sustainable forest management in developing countries.



## Tree growth performance in private plantations in Nepal's central Terai region

By Arun Dhakal

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The forest policy of Nepal places higher emphasis on community forestry development rather than on private forestry. However, farmers of Nepal's central Terai region have long focused on the establishment of private tree plantations, with community forestry generally not having been encouraged in this region. Private forestry can be a viable option for promoting sustainable management of the national forest in the Terai because pressures on the national forest are reduced when farmers get their basic needs (i.e. fuelwood and fodder) from their own private plantations which are grown primarily for commercial purposes.

The main commercial species in central Terai are *Dalbergia sissoo*, *Eucalyptus camaldulensis*, *Gmelina arborea*, *Tectona grandis* and *Anthocephalus chinensis*. Although farmers are commercially motivated, they lack the skills and knowledge to maximize income from their forests. Species' growth rates and market values determine the income that farmers can gain from their plantation investment. However, there have been no studies to assess the growth patterns and performance of these species so that farmers can select the right species and right harvesting age for the best economic return on their investment. This study examined the growth performance of these five economically important tropical timber species in two different types of plantations: bond plantation (plantation along bonds of the cultivated field) and stand plantation.

**Private forestry can be a viable option for promoting sustainable management of the national forest in the Terai because pressures on the national forest are reduced when farmers get their basic needs**

### Methods

Primary data were collected from nine village development committees (VDCs) of Dhanusha district, where Nepal Agroforestry Foundation (NAF) has been working in private forestry promotion for 15 years. Interviews with the private tree growers were conducted to see how beneficial it was to have a forest stand in place of traditional cereal based farming systems. For the market study, five local saw mill operators were consulted to ascertain market trends for these five species. Growth performance of each species in the two plantation types was assessed by measuring diameter and height. Private tree growers having an area of at least five *katha* (about 0.15 ha) were selected for this purpose and every third tree was measured (systematic sampling with random start).

### Preferred species

In general, farmers preferred three species in both stand and bond plantations: *D. sissoo*, *E. camaldulensis* and *G. arborea*. *T. grandis* and *A. chinensis* were not preferred in bond plantations since these species had negative shading effects on the major crops. For pole production, farmers gave high priority to *E. camaldulensis* and for timber and fuelwood shifted to *D. sissoo*, *G. arborea*, *T. grandis* and *A. chinensis*.

Farmers' specific preferences varied with plantation objectives. For pole production, *Eucalyptus camaldulensis*



Springing up: Bond plantation of *E. camaldulensis*. Photo: A. Dhakal

was the only species preferred by all private tree growers since it is comparatively taller and has considerably faster radial growth than the other four species under study. When it came to timber production, however, this species was the least preferred. However, the preference of tree growers for other timber species was mixed. A majority of the respondents gave higher preference to *Dalbergia sissoo* followed by *Gmelina arborea* and *Tectona grandis* as second and third respectively. Only farmers with bond plantations considered *E. camaldulensis* for timber due to its faster growth and hence quicker expected economic returns. *Anthocephalus chinensis* and *Tectona grandis* were found to be less preferred for bond plantations since these two species shared comparatively higher crown coverage and bigger leaf surface areas, resulting in heavy shading of the main agricultural crops in these plantations and hence detrimental effects on production.

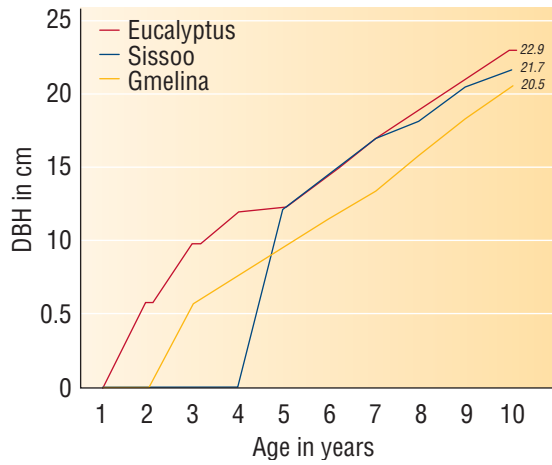
Farmers' preference for *D. sissoo* as a source of timber has been tempered in the recent past due to die-back caused by a still unidentified organism. Preference has shifted to *G. arborea* gradually because it is reasonably similar to *D. sissoo* in terms of durability, growth pattern and appearance.

### Growth performance

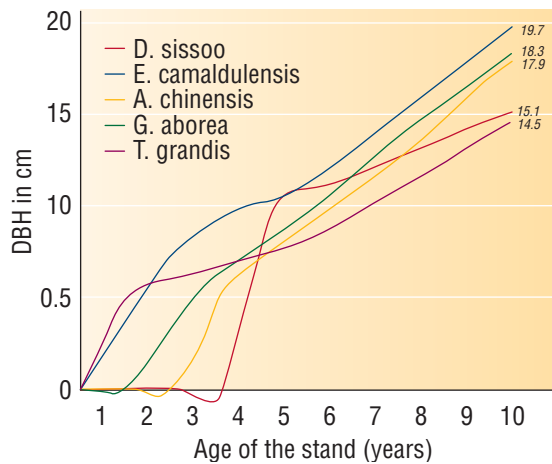
The growth performance of the three species used in bond plantations (*D. sissoo*, *E. camaldulensis* and *G. arborea*) or is shown in Figure 1. The bond plantation was found to be beneficial for farmers as all three tree species performed better in bond than in stand plantations. In the bond plantation, *D. sissoo* was second highest in term of DBH growth after *E. camaldulensis* but the same species had a comparatively slower growth rate in stand plantations. While somewhat slower, *E. camaldulensis* was also the tree having the fastest growth in stand plantations (Figure 2). The growth curve of the bond plantation indicated that *G. arborea* had a steady growth pattern over time while *E. camaldulensis* and *D. sissoo* grew somewhat abruptly. In stand plantations, *E. camaldulensis*, *A. chinensis*, *T. grandis* and *G. arborea* grew steadily while *D. sissoo* grew abruptly from age four as in the bond plantation.

## Fast eucalyptus

**Figure 1.** DBH growth curves of 10 year old bond plantations of study species



**Figure 2.** DBH growth curves of 10 year old stand plantations of study species

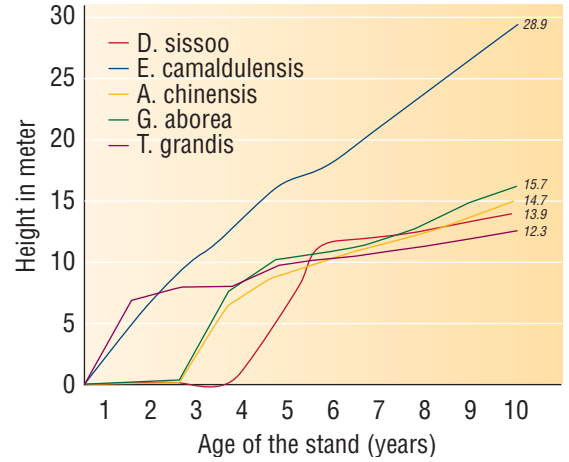


In terms of height growth, four species (*D. sissoo*, *A. chinensis*, *G. arborea* and *T. grandis*) had similar growth reaching 12.3 - 15.7 meters after 10 years (Figure 3). *E. camaldulensis* grew almost twice as fast as the other four species, showing clearly why it is farmers' preferred species for both types of plantation, particularly for pole production.

## Timber values and optimal sizes

In the study area, the price of timber or logs is determined according to size by the local saw- and ply- and paper mill operators. Girth is used to fix the market rate per cubic foot of timber. The minimum size for a log is 2 feet in girth and 6 feet in length. With an increase in girth size, per unit value of the timber also increases. The figures below are based on data from 2002 to 2007 according to actual sales recorded by girth size, with prices in 2002 taken as a base level. For *D.*

**Figure 3.** Height growth curves of 10 year old stand plantations of study species



## ITTO fellowships offered

ITTO offers fellowships through the Freezailah Fellowship Fund to promote human resource development and to strengthen professional expertise in member countries in tropical forestry and related disciplines. The goal is to promote the sustainable management of tropical forests, the efficient use and processing of tropical timber, and better economic information about the international trade in tropical timber.

### Eligible activities include:

- participation in short-term training courses, training internships, study tours, lecture/demonstration tours and international/regional conferences;
- technical document preparation, publication and dissemination, such as manuals and monographs; and
- post-graduate studies.

**Priority areas:** eligible activities aim to develop human resources and professional expertise in one or more of the following areas:

- improving transparency of the international tropical timber market;
- promoting tropical timber from sustainably managed sources;
- supporting activities to secure tropical timber resources;
- promoting sustainable management of tropical forest resources;
- promoting increased and further processing of tropical timber from sustainable sources; and
- improving industry's efficiency in the processing and utilization of tropical timber from sustainable sources.

*In any of the above, the following are relevant:*

- enhancing public relations, awareness and education;
- sharing information, knowledge and technology; and
- research and development.

**Selection criteria:** Fellowship applications will be assessed against the following selection criteria (in no priority order):

- consistency of the proposed activity with the Program's objective and priority areas;
- qualifications of the applicant to undertake the proposed fellowship activity;
- the potential of the skills and knowledge acquired or advanced under the fellowship activity to lead to wider applications and benefits nationally and internationally; and
- reasonableness of costs in relation to the proposed fellowship activity.

The maximum amount for a fellowship grant is US\$10 000. Only nationals of ITTO member countries are eligible to apply. The next deadline for applications is **2 March 2009** for activities that will begin no sooner than 1 August 2009. Applications will be appraised in June 2009.

*Further details and application forms (in English, French or Spanish) are available from Dr. Chisato Aoki, Fellowship Program, ITTO; Fax 81-45-223 1111; fellowship@itto.or.jp (see page 2 for ITTO's postal address) or go to www.itto.or.jp. ITTO fellowships offered*

*sissoo*, the percentage increase in value of the timber slowed gradually with increase in girth while for teak the largest logs attracted the highest percentage price increases (Figure 4 and 5). For *G. arborea*, by far the largest increase in value was seen for a relatively small increase in girth size (Figure 6). Since *A. chinensis* is very recently introduced in the area, the species has not reached yet the production stage and therefore the market price was not available, while *E. camaldulensis* is used for poles and not sold to mills.

### Conclusion

Overall, farmers preferred *E. camaldulensis* for both types of plantation. This is mainly due to its fast growing characteristics and quick economic return on investment. Out of twenty farmers interviewed, eighteen were growing this species in bond and stand, plantations with the sole objective of producing poles.

For timber, farmers' initial preference was for *D. sissoo* but this was gradually replaced by *G. arborea* because of a die-back problem with the former. In terms of economic returns, small size timber was generally more profitable (except for teak) because the additional price available for larger timber has not justified the additional time required to grow it over the last six years (2002 to 2007). This information is being disseminated to farmers in the central Terai to help them to optimize returns from their plantations.

Figure 4. Price increases for *D. sissoo* timber by size

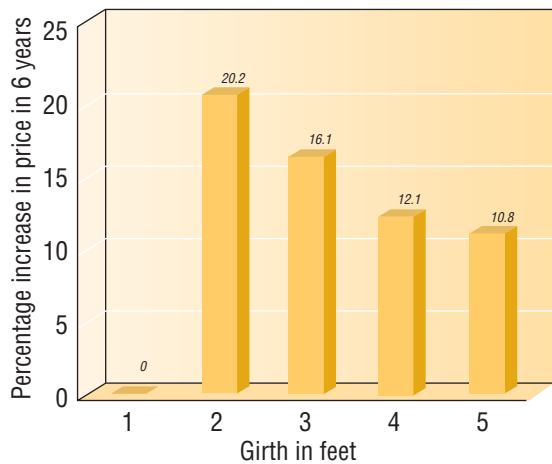


Figure 5. Price increases for teak timber by size

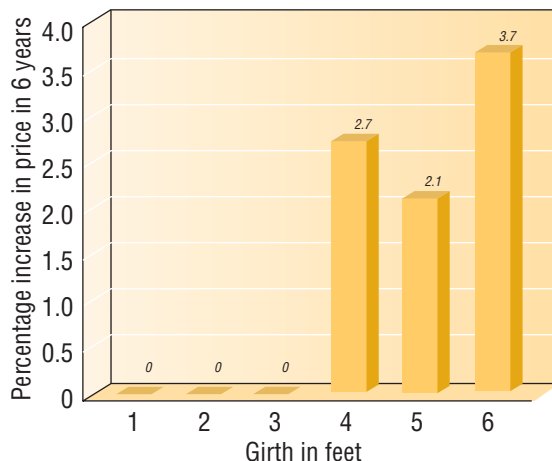
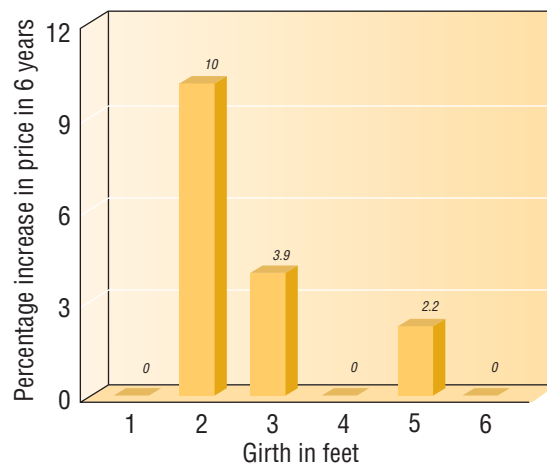


Figure 6. Price increases for *G. arborea* timber by size



The full Fellowship report is available on request from [fellowship@itto.or.jp](mailto:fellowship@itto.or.jp)

## Fellowships awarded

Twenty-three fellowships worth US\$149 750 were awarded at the 44<sup>th</sup> Session of the International Tropical Timber Council in November 2008. Awardees were:

**Alhassan Marshall Adams** (Ghana) to undertake a Masters Program in Environmental Resource Management at Kwame Nkrumah University of Science and Technology in Kumasi, Ghana; **Kossi Adjonou** (Togo) to undertake Ph.D. Research on 'Elaboration of Basis of the Sylviculture in Natural Forests in Togo' at University of Lomé, in Togo; **Djetouan Dieudonne Akian** (Cote d'Ivoire) to attend a short training programme on 'The Strategy for the management of fringe and infiltrated populations: Case study of the Seguel Gazetted Forest' in SIFCI-Vavoua Timber Company, at Vavoua and Seguela in Cote d'Ivoire; **Danielle Camargo C. Augusto** (Brazil) to undertake Masters research on 'Litterfall Dynamics and Nutrient Inputs Under Different Tropical Forest Restoration Strategies' at CATIE in Turrialba, Costa Rica; **Abraham Baffoe** (Ghana) to undertake Masters Research entitled 'Implications of Forest Certification on Forest Management and Timber Export Trade in Ghana' at the Louisiana State University in Baton Rouge, U.S.A.; **Waluyo Eko Cahyono** (Indonesia) to undertake an Environmental Study Masters program at Padjadjaran University in Bandung, Indonesia; **Aurea Erica Castro Aponte** (Peru) to attend the XXI Intensive International Course in Diversified Management and Natural Tropical Forests at CATIE in Turrialba, Costa Rica; **Nishith Arunbhai Dharaiya** (India) to attend a training course in 'Effective Leadership and Communication Tools for Environmental Management and Conservation' at the Smithsonian Institute in Virginia, U.S.A.; **Michael Ishmael Fofana** (Liberia) to participate in an international training course in 'Scaling-up Agroforestry for Livelihood and Sustainable Development' at TREES, University of the Philippines, Los Baños, Philippines; **Paola Gómez García** (Mexico) to undertake a Masters program in Plant Science at McGill University in Montreal, Canada; **El El Swe Hlaing** (Myanmar) to undertake Masters research on 'Factors for Sustained Community Forest User Groups' Participation in Community Based Forest Management: A Case Study in the Dry Zone Area of Myanmar' at the University of Tokyo in Japan; **Jasni Jasni** (Indonesia) to attend the 6th Conference of the Pacific-Rim Termite Research Group in Kyoto, Japan; **Ditter Horacio Mosquera Andrade** (Colombia) to undertake a Masters program in Tropical Agroforestry at CATIE in Turrialba, Costa Rica; **Robert Timango Ngidlo** (Philippines) to participate in an international training course in 'Environmental Management' at Galilee College in Israel; **Chidiebere Ofoegbu** (Nigeria) to undertake a Masters program in Forestry at the University of Stellenbosch in Stellenbosch, South Africa; **Shiv Shanker Panse** (India) to prepare a document on 'Study of Grading Process of Wood Raw Material Used in Different Wood Based Industries in India with Special Emphasis on Wood From Agroforestry'; **Alfredo Portilla** (Peru) to undertake a Masters program in Environmental Socioeconomics at CATIE in Turrialba, Costa Rica; **Mesmin Sebiro** (Central African Rep.) to undertake a Post-graduate program at ENEF in Libreville, Gabon; **Cecilia Goncalves Simoes** (Brazil) to undertake Ph.D. research on 'How to Best Use Reduced Emission from Deforestation and Degradation (REDD) Money in the Brazilian Amazon' at the University of Tsukuba in Japan; **Dol Raj Thanet** (Nepal) to undertake a Masters program in Forestry at Tribhuvan University, Institute of Forestry in Pokhara, Nepal; **Erica Udas** (Nepal) to undertake a Masters program in Landscape Ecology and Nature Conservation at Greifswald University in Germany; **San Win** (Myanmar) to prepare a technical document on 'Investigation of Shifting Cultivation Practices Conducted by Different Hill Tribes in Order to Develop Appropriate Agroforestry Practices in Myanmar'; and **Prudence Yombiyeni** (Gabon) to participate in a study tour on 'Wood Decaying Funguses' for the preparation of Ph.D. research at the Catholic University of Louvain in Louvain, Belgium.

*The projects summarized below were financed at the Forty-fourth session of the International Tropical Timber Council, which was held November 3-8, 2008. In addition to these projects, funding of US\$ 4.6 million was also provided for new thematic programs on climate change mitigation and forest law enforcement, as well as for capacity building for implementing CITES for tropical timber species and other activities from ITTO's 2008-09 Work Program. A total of US\$8.6 million was committed for approved projects, pre-projects and activities at the session.*

## **Sustainable Utilization and Marketing of Selected Non-Timber Forest Products to Support the Handicraft Industry and the Development of Rural Communities (Philippines)**

<b>Project number:</b>	PD 448/07 Rev.2 (I)
<b>Budget:</b>	ITTO Contribution: US\$ 354,672 Government of the Philippines: US\$ 95,410 <b>Total: US\$ 450,082</b>
<b>Implementing agencies:</b>	Forest Products Research and Development Institute (FPRDI) in collaboration with Federation of Philippine Crafts Fair Traders Inc. (FPCFTI)

This project follows-up on a completed project on the utilization, collection and trade of non-timber forest products (NTFPs) in the Philippines [PD 15/96 Rev.2 (M,I)]. It will generate more information on the availability, growth, extraction intensity, processing and marketing of selected NTFPs in the project areas in Quezon and Camarines Norte Provinces. Training seminars will be conducted to upgrade the skills and productivity of NTFP extractors and handicraft workers and producers. It will organize and assist small handicraft producers groups to strengthen their production and marketing capabilities. The project will also establish data/information on gender roles in extraction, processing and marketing of NTFPs and handicrafts.

## **Reviving Forestry Education in Liberia**

<b>Project number:</b>	PD 506/08 Rev.1 (I)
<b>Budget:</b>	ITTO Contribution: US\$ 292,522 Government of Liberia (FDA and Ministry of Education): US\$ 59,727 <b>Total: US\$ 352,249</b>
<b>Implementing agencies:</b>	The Forest Development Authority (FDA) and the Ministry of Education (MoE), supporting the Forestry Training Institute (FTI), Tubmanburg

The project will support the reestablishment of forest education activities for middle level forestry technicians at the Forestry Training Institute (FTI) located in Tubmanburg. The project deals with the establishment of a functional curriculum, the training of trainers and immediate practical training of the currently registered students in the FTI. In addition, the project will support a national working group that conducts a strategic review of forest education in Liberia as a whole.

## **Timbers of Tropical Africa Part 2: Group 7(2) within the PROTA Programme**

<b>Project number:</b>	PD 479/07 Rev.2 (M)
<b>Budget:</b>	ITTO Contribution: US\$ 596,419 PROTA Contribution: US\$ 457,216 <b>Total: US\$ 1,053,635</b>
<b>Implementing agency:</b>	Plant Resources of Tropical Africa (PROTA)

This is a follow-up to a project on the 500 'Timbers of Tropical Africa' from the currently more important timber-producing taxonomic families (Commodity group 7(1); ITTO Project PD 264/04 Rev. 3 (M,I)). This project focuses on the 570 'Timbers of Tropical Africa' from currently less important timber-producing taxonomic families (Commodity group 7(2)).

## **Verifying the Legality of Timber Forest Products in Peru**

<b>Pre-project number:</b>	PPD 138/07 Rev.1 (M)
<b>Budget:</b>	ITTO Contribution: US\$ 79,844 Executing Agency Contribution: US\$ 23,050 <b>Total: US\$ 102,894</b>
<b>Implementing agencies:</b>	Bosques Sociedad y Desarrollo (BSD) – Technical Secretariat for the Roundtable on National Dialogue and Consensus

This project will contribute to sustainable forest management taking into account market requirements related to the origin and sustainability of Peruvian timber. Project activities will strengthen voluntary chain-of-custody networks and generate competitive forest products on the basis of socially and environmentally sound practices.

## **The Study and Demonstration of the Management of Secondary Forests in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits (China)**

<b>Project number:</b>	PD 294/04 Rev.4 (F) – Phase II
<b>Budget:</b>	ITTO Contribution: US\$ 180,373 Government of China: US\$ 57,381 <b>Total: US\$ 237,754</b>
<b>Implementing agency:</b>	Guangdong Academy of Forestry (GAF)

This project is aimed at accelerating sustainable forest management through better management of tropical secondary forests (TSF) in China. Its specific objectives are: a) to establish demonstration forests in two selected provinces for the study and demonstration of management of TSF including planted trees and non-timber forest products; and b) to train forestry staff and villagers in TSF rehabilitation techniques.

**Promoting the Rehabilitation, Management and Sustainable Use of Tropical Bamboo Forests in the North-Western Region of Peru**

<b>Project number:</b>	PD 428/06 Rev.2 (F)
<b>Budget:</b>	ITTO Contribution: US\$ 502,978 Government of Peru: US\$ 140,000 PERUBAMBU: US\$ 146,400 <b>Total: US\$ 789,378</b>
<b>Implementing agencies:</b>	Peruvian Association for Bamboo – PERUBAMBU in cooperation with the National Institute for Natural Resources – INRENA

This project aims to ensure the rehabilitation and sustainable management of degraded or endangered tropical forests with bamboo stands and to effectively contribute to poverty alleviation in an area with a high level of unmet basic needs and hence with a high level of deforestation (185 000 ha/year). The native communities and poor rural populations are to be the main beneficiaries of this project, as their income levels will increase through the sale of sustainably harvested products.

**Institutional Strengthening of ANAM for Integrated Fire Management in the Tropical Forests of Panama**

<b>Project number:</b>	PD 441/07 Rev.2 (F)
<b>Budget:</b>	ITTO Contribution: US\$ 463,115 ANAM: US\$ 295,300 <b>Total: US\$ 758,415</b>
<b>Implementing agency:</b>	National Environmental Authority (ANAM)

This project, which arose from an ITTO-financed pre-project (PPD 72/03 Rev.1 (F) “Technical Assistance for the Development of a Project Proposal on Institutional Strengthening for Forest Fire Prevention, Mitigation and Management in the Natural and Planted Forests of Panama”) will provide for institutional strengthening to prevent, mitigate and manage forest fires in the natural and planted forests of Panama.

**Improving the Enabling Conditions for Sustainable Management of Sandalwood Forest Resources in East Nusa Tenggara Province, Indonesia**

<b>Project number:</b>	PD 459/07 Rev.1 (F)
<b>Budget:</b>	ITTO Contribution: US\$ 593,163 Government of Indonesia: US\$ 125,000 <b>Total: US\$ 718,163</b>
<b>Implementing agencies:</b>	Forestry Service of East Nusa Tenggara Province in collaboration with Forest Production Agency, Ministry of Forestry and University of Nusa Cendana Kupang, East Nusa Tenggara

This project aims to contribute to the sustainable management of the sandalwood resource in East Nusa Tenggara Province. Its specific objectives are: i) to strengthen the enabling conditions for sustainable management of the sandalwood resource; and ii) to improve local capacity for managing the sandalwood resource.

**Development and Implementation of Criteria and Indicators for Sustainable Management of Planted Forests and Community Forests (Thailand)**

<b>Project number:</b>	PD 470/07 Rev.1 (F)
<b>Budget:</b>	ITTO Contribution: US\$ 209,574 Government of Thailand: US\$ 49,100 <b>Total: US\$ 258,674</b>
<b>Implementing agencies:</b>	Royal Forest Department in collaboration with the Department of National Park, Wildlife and Plant Conservation, Thailand

This project aims to improve availability of timber and non-timber forest products (NTFP) from sustainable and legal sources through establishment of a comprehensive system of criteria and indicators for sustainable forest management in Thailand.

**Development of the National Reforestation Policy and Afforestation Strategy Consistent with the Liberian 3C Approach**

<b>Project number:</b>	PD 507/08 Rev.1 (F)
<b>Budget:</b>	ITTO Contribution: US\$ 396,310 Government of Liberia: US\$ 109,010 In kind <b>Total: US\$ 505,320</b>
<b>Implementing agency:</b>	Forestry Development Authority (FDA)

This project aims to develop forest plantations and undertake forest restoration activities as an effective means of promoting the conservation and sustainable management of Liberia’s forest and wildlife resources, to maintain environmental quality and to improve the flow of benefits to all segments of society.

**Assessing the Policy and International Framework to Facilitate the Development of an Integrated Grazing Policy for Sustainable Forest Management in India**

<b>Pre-project number:</b>	PPD 142/08 Rev.1 (F)
<b>Budget:</b>	ITTO Contribution: US\$ 79,969 Winrock International India: US\$ 20,000 <b>Total: US\$ 99,969</b>
<b>Implementing agency:</b>	Winrock International India

The development objective of this pre-project is to contribute towards sustainable forest management by promoting integrated grazing management practices that are socially acceptable and ecologically sound. The pre-project proposes to undertake an assessment of grazing and livestock-related issues in seven agro-ecological zones covering approximately 20 percent of the total forest cover/area of the country and 30 percent of the total livestock population.

**Producers**

**Africa**

- Cameroon
- Central African Republic
- Congo
- Côte d’Ivoire
- Democratic Republic of the Congo
- Gabon
- Ghana
- Liberia
- Nigeria
- Togo

**Asia & Pacific**

- Cambodia
- Fiji
- India
- Indonesia
- Malaysia
- Myanmar
- Papua New Guinea
- Philippines
- Thailand
- Vanuatu

**Latin America**

- Bolivia
- Brazil
- Colombia
- Ecuador
- Guatemala
- Guyana
- Honduras
- Mexico
- Panama
- Peru
- Suriname
- Trinidad and Tobago
- Venezuela

**Consumers**

- Australia
- Canada
- China
- Egypt
- European Community
- Austria
- Belgium
- Denmark
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- Luxembourg
- Netherlands
- Poland
- Portugal
- Spain
- Sweden
- United Kingdom
- Japan
- Nepal
- New Zealand
- Norway
- Republic of Korea
- Switzerland
- United States of America

## *Volatile markets wreak havoc on timber trade in first three quarters of 2008*

By Lauren Flejzor

MIS coordinator, ITTO Secretariat  
flejzor@itto.or.jp

During the second half of 2008, as global markets dipped further into uncertainty, the tropical timber trade was impacted by wary traders and buyers. Early in the first half of 2008, exporters showed some gains. However, as the first half of the year ended, it was clear that the instability and subsequent downturn of global markets were having a negative effect on timber buying patterns.

### **Weakening consumer demand hits exporting countries**

Japan's demand for most timber products was slow during the first three quarters of 2008. Japan's plywood imports and housing starts rebounded in July and August 2008, after reaching their nadir in 2007 (largely due to impacts from a Revised Building Standards Act), but have since leveled off.

*The European hardwood import trade focused on stock reduction and delivery of outstanding contracts, with the current level of stocks expected to meet subdued demand until the end of the year.*

Japanese traders also expected that the prospects for plywood trade would remain poor for the rest of the fourth quarter. Japan's demand for South Sea logs has been weak and overall imports of logs and lumber during the first half of 2008 dropped sharply. Japan imported nearly 30% less forest products by value in the first half of 2008 (about 306 billion yen, or around \$3 billion) as during the same period in 2007 (Table 1).

### **Falling hard in Japan**

**Table 1.** Imports of major forest products, first half 2008

ITEM	VOLUME (MILLION M <sup>3</sup> )*	VALUE (JPY BILLION)
<b>Log</b>	<b>3.00</b>	<b>65.79</b>
softwood	2.69	56.67
hardwood	0.32	9.12
<b>Lumber</b>	<b>3.02</b>	<b>113.86</b>
softwood	2.86	100.34
hardwood	0.16	13.52
<b>Secondary processed lumber</b>	<b>0.11</b>	<b>13.45</b>
softwood	0.05	4.23
hardwood	0.06	9.21
<b>Plywood</b>	<b>1.95</b>	<b>85.6</b>
softwood	0.23	1.22
hardwood	1.48	73.49
blockboard	0.24	10.91
<b>Veneer</b>	<b>27.85</b>	<b>4.42</b>
fiberboard	144.66	9.26
hardboard	15.18	0.92
MDF	129.48	8.34
<b>Laminated lumber</b>	<b>0.24</b>	<b>13.85</b>

Source: Japan Lumber Reports (\*note: veneer in million m<sup>2</sup>; fibreboard in million kg)

China continued strong buying trends for West African logs during 2008, helping to sustain trade and prices in the region, despite the volatility in the global marketplace. In the first three quarters of 2008, China's imports and exports grew, but growth was significantly lower than in 2007. China's major wood products imports totaled \$21.4 billion in the first three quarters of 2008 and exports were valued at \$26.7 billion, dropping 7.5 and 26.5 percentage points from 2007 levels, respectively. China's trade surplus for wood products reached nearly \$5.3 billion, 21 percentage points less than during the same period in 2007.

EU importers were reducing stocks as of mid-2008 and demand has been at a bare minimum for West African products. The European hardwood import trade focused on stock reduction and delivery of outstanding contracts, with the current level of stocks expected to meet subdued demand until the end of the year. Sawn hardwood imports were up in the UK until October 2008, when the instability of banks began to affect the industry. European plywood importers were also very reluctant to purchase new volumes and existing stocks were seen as a liability. Overall, EU tropical hardwood imports slowed during 2008, as shown in Tables 2 and 3.

### **Positive but slowing trends in producer countries**

In the first half of 2008, supply was lower in many West African countries due to the rainy season, particularly in Gabon and Cameroon. Ghana, however, reported a 25% increase in the volume of contracts processed and approved during the second quarter of 2008 over first quarter levels. Despite this gain, furniture parts sales contracts processed and approved during the second quarter dropped by 78.2% when compared to the first quarter. Ghana's earned €96.5 million in the first half of 2008 from forest products exports, up 8% by volume and 3.8% by value from the same period of 2007. Kiln dried lumber (21.4%), air dried lumber (11.7%) and plywood (25.7%) together accounted for 58.8% of the total volume exported during the first half of the year.

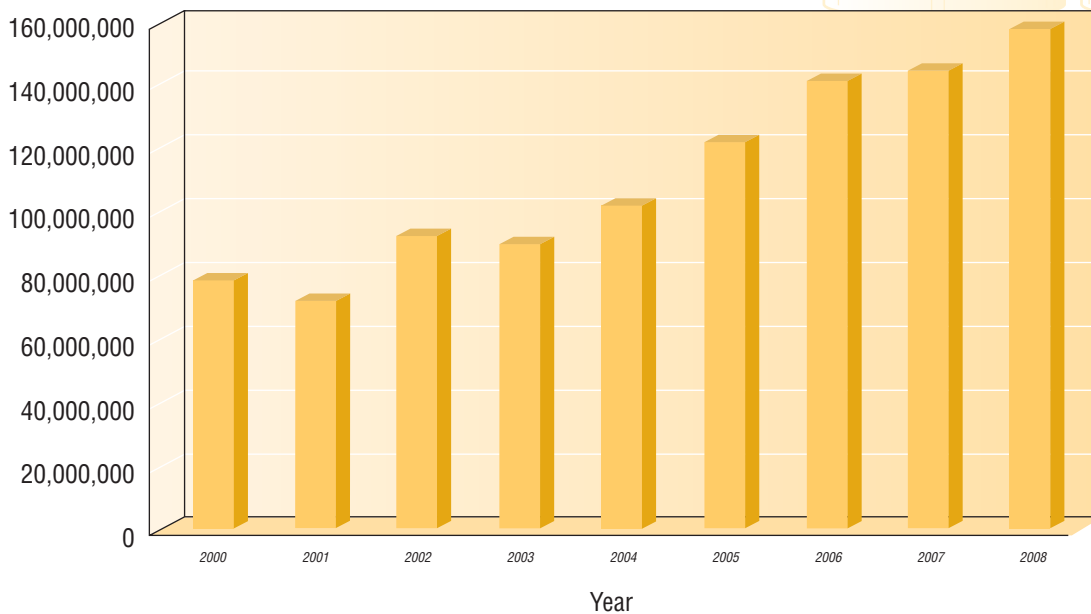
The Brazilian timber industry was on alert in 2008 as the fluctuation of the US dollar and instability of global markets caused uncertainty for exporters. Brazilian producers were raising prices of timber products, although buyers continued to demand lower prices in light of fluctuating exchange rates and speculative demand. Nevertheless, the Brazilian Association of Furniture Companies (ABIMOVEL) was expecting a 10% increase in domestic market sales for 2008, even though sales to the domestic market had begun to slow in the second quarter and exports to the US had plummeted by nearly 30%. Brazil's exports in August 2008 alone dropped 25.8% from August 2007 levels.

Peru's results from the first eight months of 2008 showed positive trends, with wood product exports growing 12% (\$158 million in 2008, up from \$141 million in 2007, Figure 1).



## Peru grows

**Figure 1.** Peru's wood products exports, January to August (USD, FOB)



Source: ADEX

## EU slump

**Table 2.** Percent change in EU log import volumes, first half 2008 vs first half 2007.

	FR	IT	PT	DE	BE	GR	OTHER	TOTAL
GABON	15.0	-1.8	-38.9	-36.5	49.4	15.2	na	3.6
CONGO DR	-11.4	-68.9	-34.1	42.6	27.5	na	-72.3	-20.4
CONGO REP	19.7	19.1	116.4	-71.9	32.8	-100.0	55.7	23.5
CAMEROON	-69.7	-45.2	-57.4	-46.4	84.1	na	-52.6	-50.8
CENT. AFR. REP.	42.9	-44.4	-64.7	-100.0	na	na	-100.0	-33.8
EQUAT. GUINEA	-81.9	-45.9	-100.0	-42.9	na	-100.0	na	-63.6
OTHER	183.2	-70.6	78.2	-19.0	99.4	-52.5	-10.5	-21.0
TOTAL	-0.7	-33.6	-25.8	-44.6	41.4	-15.1	-20.3	-15.3

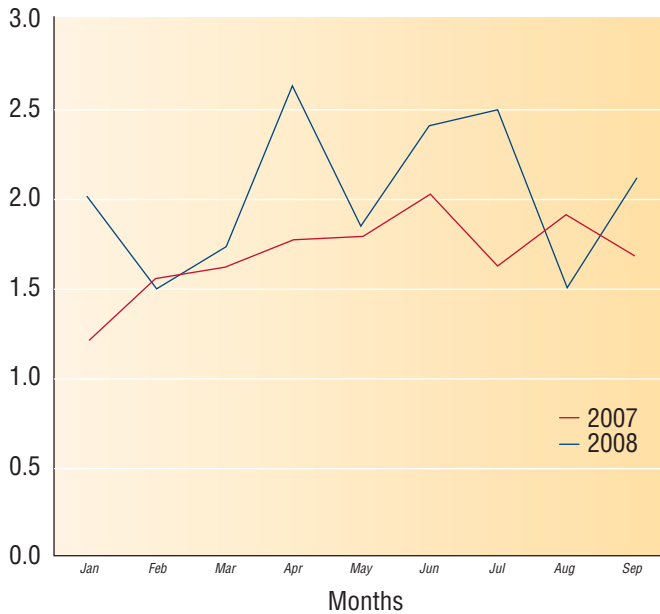
**Table 3.** Percent change in EU sawn import volumes, first half 2008 vs first half 2007.

	NL	FR	IT	BE	PT	GB	OTHER	TOTAL
BRAZIL	-24.8	-17.4	-23.9	-27.1	2.2	-90.8	-8.3	-20.9
CAMEROON	-23.0	-8.2	8.1	-18.3	-1.5	-39.2	-33.5	-15.4
MALAYSIA	7.4	-14.2	-2.2	-42.5	na	-20.0	-6.3	-9.6
IVORY COAST	-8.8	-31.2	-10.8	-40.2	-7.2	17.8	-19.9	-12.3
GABON	87.2	54.3	-7.9	-55.8	-36.9	723.5	-28.8	6.2
GHANA	-40.3	27.1	-2.8	26.7	118.9	-48.5	-18.1	-14.3
CONGO DR	41.3	-13.4	72.6	11.7	-38.5	1112.7	-40.3	18.0
CONGO REPUBLIC	79.5	75.6	36.9	-13.0	44.3	334.2	20.0	54.2
INDONESIA	-28.9	-14.6	-20.1	-32.2	na	60.7	-7.4	-7.0
OTHER	30.8	-12.0	-3.9	-48.4	120.4	-54.8	-22.5	-12.6
TOTAL	-8.0	-9.4	-2.1	-27.1	0.4	-26.3	-17.4	-12.0

Source: Forest Industries Intelligence Analysis of Eurostat (BE - Belgium; DE - Germany; FR - France; GB - UK; GR - Greece; IT - Italy; NL - Netherlands; PT - Portugal; data for Spain, Denmark and Estonia unavailable and excluded from totals).

## Guyana gains

Figure 2. Guyana's sawnwood exports by value (million US\$)



Source: Guyana Forestry Commission

The growth was mostly due to exports to non-US and non-European destinations, which sustained demand for Peru's wood products. However, exports in August 2008 were \$3.12 million less than in August 2007. The volume of exports to the US and Mexican markets in August 2008 fell, while exports to the Chinese market rose.

### ***Despite some positive results for the first half 2008, major producers in West Africa, Malaysia, Indonesia and Brazil had lowered trade expectations for the fourth quarter of 2008 and into 2009.***

Guyana's plywood exports also rose in the third quarter, mostly due to the diversity of its export destinations, particularly in the Caribbean region. Plywood accounted for as much as 41% of all Guyana's wood products exports during the quarter. At the end of September 2008, plywood exports by volume were 9% greater than the second quarter and 14% over the first quarter total. Log exports also rose in the period ending September 2008. This was mainly attributed to the increasing demand for Guyana's logs from buyers in India, which absorbed 54% of Guyana's total export volume of logs for the first three quarters. Sawnwood export values also showed positive trends over the same period (Figure).

Despite some positive results for the first half 2008, major producers in West Africa, Malaysia, Indonesia and Brazil had lowered trade expectations for the fourth quarter of 2008 and into 2009. Latin American and South-east Asian producers were looking to market their products to non-traditional export destinations such as the Middle East to offset a drop in demand from traditional markets such as the US, EU and Japan.

## Legality and financing developments

As timber markets struggled to sustain active trading in the second and third quarters of 2008, Ghana and Malaysia made headway in finalizing their negotiations under the European Community's Voluntary Partnership Agreements (VPA). Ghana was the first country to finalize and sign a VPA with the EC, with Malaysia expected to finalize its VPA in early 2009. The EU also released proposed illegal logging legislation, which includes language suggesting that individual operators engaged in the trade and production of wood products in the EU would be required to implement a 'due diligence' management system to reduce the risk of any illegal wood entering their supply chains. Indonesia also announced it would begin to inspect timber companies for illegally felled timber using independent auditors under a new Wood Legality Verification System (SLVK).

New initiatives to increase financing for sustaining tropical forests were being developed or were introduced in 2008. Peru entered into a \$25 million debt-for-nature agreement with the USA, to fund forest conservation and management activities. Brazil also introduced a new investment mechanism, the so-called forest 'condominium', which would establish Brazil's largest, fully irrigated forest plantation containing native species. Mexico's private sector was also planning to use stock exchange certificates to complete financing of a teak plantation in the south-east of the country.

Norway was active during 2008 in promoting funding for REDD (reducing emissions from deforestation and degradation) initiatives within the UN and on a bilateral basis. Brazil was the recipient of major funding from Norway and sought to leverage the funds received to raise nearly \$21 billion for the Amazon Fund, which is focused on REDD activities, by the year 2021. Several other initiatives focusing on the role of tropical forests in mitigating and adapting to climate change were announced during 2008, including through ITTO (see Editorial), to begin concrete actions on REDD and related activities in the run up to the December 2009 UN Framework Convention on Climate Change negotiations in Copenhagen.

► **ITTO.2008. Tropical Forests and Climate Change. ITTO Technical Series 30. Yokohama, Japan. ISBN: 4-902045-40-0**

*Available in English from: ITTO Secretariat (See page 2 for contact details); online under Publications at [www.itto.or.jp](http://www.itto.or.jp)*



This report summarizes the deliberations of the International Expert Meeting on Addressing Climate Change through Sustainable Management of Tropical Forests, which met for three days in Yokohama, Japan, in May/June 2008. The meeting fully endorsed the potential role of sustainable forest management in the tropics in both mitigating climate change and helping communities adapt to it. It also generated realistic proposals for action for a range of international and national actors, including ITTO and its member countries and partners. The adoption and implementation of the meeting's recommendations will not only help in the development of forest related strategies for climate change mitigation and adaptation, it will also strengthen the capacity of ITTO tropical member countries to tackle this critical issue.

► **ITTO.2008. Energy Grows on Trees. ITTO Technical Series 31. Yokohama, Japan. ISBN: 4-902045-44-3**

*Available from: ITTO Secretariat (See page 2 for contact details); online under Publications at [www.itto.or.jp](http://www.itto.or.jp)*



This report summarizes the presentations made and discussions that ensued at the International Conference of Wood-based Bioenergy which met in Hannover, Germany for three days in May 2007 as part of LIGNA 2007. The conference was sponsored by ITTO in collaboration with FAO and the government of Germany. The report reviews the current status of wood-based bioenergy and explores the growing use of wood residues, wood waste and dedicated bioenergy tree plantations for energy generation. Powerpoint slides presented by speakers on these and other related topics are appended.

► **ASB.2008. Policybriefs Nos. 10 and 11. Nairobi, Kenya.**

*Available online in English at: <http://www.asb.cgiar.org/publications/policybriefs/>*

The following short Policy Briefs were recently released by Partnership for the Tropical Forest Margins (ASB):



**The Opportunity costs of Avoiding Emissions from Deforestation (ASB Policy Brief No. 10)**

How valuable are the economic opportunities that farmers give up to reduce emissions from deforestation?

This bottom-up perspective helps clarify how to design incentives to change behaviour at the ground level.

**REDD Strategies for High Carbon Rural Development (ASB Policy Brief No. 11)**



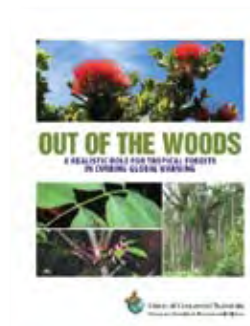
Carbon-rich agroforestry systems can help poor farmers benefit from global carbon markets and enhance the effectiveness of strategies to reduce emissions from deforestation.

This publication highlights key observations and implications regarding effective REDD strategies.

The ASB Policy Brief series specializes on avoided deforestation leading to sustainable benefits. They take lessons learned from experiences at the local or national levels and digest the information for a broad audience including key people whose decisions will make a difference to poverty reduction and environmental protection in the humid tropics.

► **Boucher, D. 2008. Out of the Woods – A Realistic Role for Tropical Forests in Curbing Climate Change. UCS Publications. Cambridge, MA, USA.**

*Available online in English at: [http://www.ucsusa.org/assets/documents/global\\_warming/UCS-REDD-Boucher-report.pdf](http://www.ucsusa.org/assets/documents/global_warming/UCS-REDD-Boucher-report.pdf)*



This report, published by the Union of Concerned Scientists, is a detailed look at the reducing emissions from deforestation and forest degradation (REDD) in tropical countries. It contains detailed economic analyses showing that REDD is an inexpensive approach compared with emissions reductions in the energy sectors of industrialized countries. The report concludes that the costs per ton of reducing current carbon dioxide emissions from deforestation by half—even with pessimistic assessments and including not only opportunity costs but also REDD's implementation,

transaction, administration, and stabilization costs—are less than a third of current (mid-2008) capped carbon market prices. Conservative estimates show that \$5 billion in funding annually could reduce deforestation emissions in the year 2020 by over 20 percent; that \$20 billion could reduce them by 50 percent; and \$50 billion could result in a drop of 66 percent. The report investigates factors that could positively or negatively affect this potential and concludes that REDD is the best prospect currently available for reducing greenhouse gas emissions while promoting sustainable development.

► **Brouwer, M. 2008. Amazon Your Business. Second edition. Meindert Brouwer Partner in Communications. Bunnik, The Netherlands. ISBN: 978-90-811942-1-1**

Available in English, Portuguese, Spanish and Dutch through: [www.amazonyourbusiness.nl](http://www.amazonyourbusiness.nl)

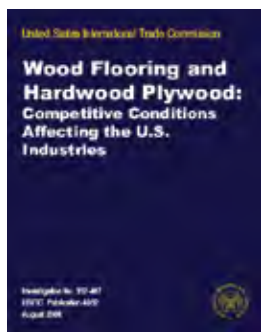


*Amazon Your Business* is the first guide to sustainable products from the rainforests and rivers of Amazon countries. Countries covered include Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela, all of which are also

ITTO member countries. This second edition was partly sponsored by ITTO and contains an interview with ITTO Executive Director Emmanuel Ze Meka. Following the publication of the first edition in June 2007, a number of entrepreneurs in Europe and in the USA are working to import sustainable Amazon products found within the pages of the book. This book contributes to the international marketing of sustainable products from the Amazon and thus to forest conservation, poverty alleviation and the growth of a sustainable forest economy in the region. It is a valuable source of information on sustainable forest management practiced within the Amazon.

► **United States International Trade Commission. 2008. Wood Flooring and Hardwood Plywood: Competitive Conditions Affecting the U.S. Industries. Investigation No. 332-487, USITC Publication 4032. Washington DC, USA.**

Available in English online at: <http://hotdocs.usitc.gov/docs/pubs/332/pub4032.pdf>

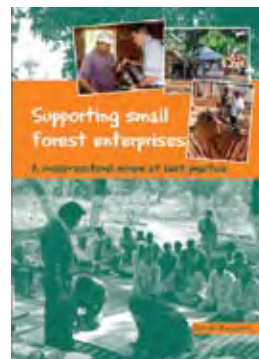


This report responds to a request by the Senate Finance Committee for information on and analysis of the trends and new developments in the global wood flooring and hardwood plywood industries that have affected the competitive position of the U.S. industries in the U.S. market.

The report covers four major areas: (1) an overview of the U.S. market; (2) a description of the U.S. industries and the principal foreign industries supplying the U.S. market; (3) an examination of U.S. trade patterns and the factors affecting trade patterns; and (4) an analysis of the factors affecting the competitive position of U.S. producers and the principal foreign suppliers in the U.S. market.

► **Macqueen, D. 2008. Supporting Small Forest Enterprises. International Institute for Environment and Development (IIED). ISBN: 978-1-84369-684-1**

Available in English and French online at <http://www.iied.org/pubs/display.php?o=13548IIED>

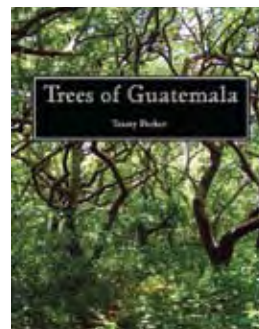


This report reviews the growing consensus on best practice in small enterprise support, both within and outside the forest sector. Small and medium forest enterprises (SMFES), which account for 80-90% of forestry businesses in many developing countries and up to 50% of forest-based

employment, often face a difficult business environment. The report describes how a framework known as 'market system development' unites attempts to strengthen enterprise associations, facilitate better provision of financial and business development services, and improve the business environment for SMFES. It concludes with specific recommendations for support to SMFES at the international and national levels.

► **Parker, T. 2008. Trees of Guatemala. The Tree Press. Texas, USA. ISBN: 978-0-9718739-0-2**

Available in English through: <http://www.thetreepress.com/> or [www.amazon.com](http://www.amazon.com)



The detailed botanical descriptions and illustrations for the 2,300 species and varieties of native and introduced trees covered in this book will be useful to foresters, ecologists, botanists, wildlife biologists, students, tree enthusiasts as well as backyard gardeners. Over 930

detailed pen-and-ink illustrations complement many of the detailed descriptions, including a glossary of botanical terms with illustrations included to clarify the terms used. The mixture of temperate and tropical zones, with cold mountain ranges and hot, tropically influenced lowlands, make Guatemala a country with an extremely diverse range of tree species. This book is an essential reference for anyone interested in them.



## **Forest Dialogue climate change statement**

The Forest Dialogue (which ITTO is a founding member of) recently released a statement outlining five principles that should help to guide the forest-related post 2012 arrangements on climate change. The statement is the product of a multi-stakeholder process developed and convened by the Forest Dialogue and expresses the consensus view of more than 250 people from diverse backgrounds, who came together in various forums to debate, over a ten-month period, the role of forests in climate change and the policies being developed to foster that role. The process culminated in the Global Forest Leaders Forum in Washington, DC on 17–18 September 2008. The Forum was attended by leaders of environmental and social groups, businesses, indigenous peoples' and forest community groups, trade unions, forest owners, governments, and international organizations.

The five principles are:

1. Ensure that forest-related climate change options support sustainable development in both forest-rich and forest-poor countries.
2. Tackle the drivers of deforestation that lie outside the forests sector.
3. Support transparent, inclusive, and accountable forest governance.
4. Encourage local processes to clarify and strengthen tenure, property, and carbon rights.
5. Provide substantial additional funding to build the capacity to put the above principles into practice.

To support these principles, a set of possible actions were also formulated. The complete statement can be found on the Forest Dialogue website: <http://research.yale.edu/gisf/tfd/>.

## **Forest Day 2**

More than 800 people gathered to discuss the opportunities and challenges of bringing forests into global and national strategies for climate change adaptation and mitigation at Forest Day 2 in Poznan, Poland on December 6<sup>th</sup> 2008. The meeting took place parallel with the fourteenth session of the Conference of the Parties (COP 14) of the United Nations Framework Convention on Climate Change (UNFCCC) and the fourth Meeting of the Parties to the Kyoto Protocol (COP/MOP 4) held in Poland from 1–12<sup>th</sup> of December. As a follow-up to the first Forest Day in Bali, Indonesia last December, discussions continued on the strategic actions to include sustainable forest management in climate change mitigation and adaptation activities at both national and global levels. The Forest Day 2 summary statement is available at [http://www.cifor.cgiar.org/publications/pdf\\_files/cop/cop14/Summary-Forest-Day-2.pdf](http://www.cifor.cgiar.org/publications/pdf_files/cop/cop14/Summary-Forest-Day-2.pdf).

## **Barcoding biodiversity**

A project is underway to identify and catalogue the DNA of all living things on the planet using barcodes to be stored in a database. The database would then be accessed by anyone through the use of a barcode scanner much like the devices used in modern supermarket checkout counters, from which

Prof. Paul Herbert, a biologist from the University of Guelph in Canada was inspired. The project has over 50,000 species catalogued already and hopes to complete all of the world's bird species by 2011.

The scanner reads a section of a mitochondrial DNA gene that contains 648 pairs of nucleic acid forming the "letters" of its DNA code, which contain enough variation to distinguish between most animals. Although research is progressing rapidly with animals, 98% of which can be identified with this system, plants are taking longer due to the fact that mitochondria in plants evolved differently from animals and cannot be used to distinguish species. Also, genetic boundaries between many plant species have blurred due to hybridization. Alternate DNA barcodes are being researched for plants, with a gene called matK found in the chloroplast one possibility that is being tested.

## **Mekong's treasure trove**

A new report released in December by the World Wildlife Fund documents over 1000 species that were discovered in the rainforests and wetlands of the Mekong River in the past decade. Newly identified species include a rat thought to have been extinct for 11 million years, a cyanide producing bright pink millipede, and a spider that is as large as a dinner plate. All of these and others were found in a region that spans areas of Cambodia, Laos, Myanmar, Thailand, Vietnam and the southern Chinese province of Yunnan.

The report of the new species called the area a "biological treasure trove" and highlights 519 plants, 279 fish, 88 frogs, 88 spiders, 46 lizards, 22 snakes, 15 mammals, four birds, four turtles, two salamanders and a toad which equal an average of two previously undiscovered species a week for the past 10 years. The report notes, however that development in the area could endanger many of these new discoveries and that a cross-border regional agreement between the countries is the best way to preserve them.

## **Debt-for-nature agreement for Peru**

Under the U.S. Tropical Forest Conservation Act (TFCA), the USA and Peru recently announced an agreement to reduce Peru's debt payments to the USA by more than US\$ 25 million over the next seven years in exchange for Peru using the funds to support protection of its tropical forests.

This agreement complements an existing TFCA debt-for-nature program from 2002, as well as a debt swap under the Enterprise for the Americas Initiative, and the United States-Peru Trade Promotion Agreement. These agreements will generate more than US\$35 million for conservation, making Peru the largest beneficiary under the TFCA. The USA has other TFCA agreements with Bangladesh, Belize, Botswana, Colombia, Costa Rica, El Salvador, Guatemala, Jamaica, Panama, Paraguay and the Philippines. Over US\$188million will be generated to protect tropical forests through these debt-for-nature programs.

Continued on page 30 ►

▶ 16 - 18 March 2009.  
**World Biofuels Markets Congress.** Brussels, Belgium.  
Contact: Valerie Giblin, Green Power Conferences, Southbank House, Black Prince Road, London, SE1 7SJ, UK; Tel: +44 (0)207 099 0600; Fax: +44 (0)207 900 1853; info@greenpowerconferences.com; www.worldbiofuelsmarkets.com/

▶ 16-20 March 2009.  
**FAO Committee on Forestry - 19th Session.** Rome, Italy.  
Contact: Douglas Kneeland, FAO Forestry Department; Tel: +39-06-5705-3925; Fax: +39-06-5705-5137; douglas.kneeland@fao.org; www.fao.org/forestry/cofo/en/

▶ 17-21 March 2009. **18<sup>th</sup> Meeting of the CITES Plants Committee.** Buenos Aires, Argentina. Contact: CITES Secretariat; www.cites.org

▶ 18-20 March 2009.  
**IUFRO International Forest Biosecurity Conference 2009.** Rotorua, New Zealand.  
Contact: Amanda Davies; amanda.davies@innovatek.co.nz; http://www.forestbiosecurity.com/

▶ 30 March-9 April 2009.  
**The Fifth Session of the Ad Hoc Working Group on Long-Term Cooperative Action and the Seventh session of the AWG on Further Commitments for Annex I Parties under the Kyoto Protocol.** Bonn, Germany.  
Contact: UNFCCC Secretariat;

Tel: +49-228-815-1000;  
Fax: +49-228-815-1999;  
secretariat@unfccc.int;  
www.unfccc.int/meetings/  
unfccc\_calendar/items/2655.  
php?year=2009

▶ 1-3 April 2009. **Recreation and Health in Landscape and Forest.** Birmensdorf, Switzerland.  
Contact: Susanne Raschle, events@wsl.ch; http://www.wsl.ch/landscapeandhealth/index\_EN?-C=&

▶ 13-17 April 2009.  
**IV International Meeting on Sustainable Forest Development - DEFORS 2009.** Havana, Cuba. Contact: Martha González Izquierdo, gonzalez@forestales.co.cu

▶ 20 April - 1 May 2009.  
**Eighth Session of the UN Forum on Forests.** New York, USA. Contact: UNFF Secretariat; Tel: +1-212-963-3160; Fax: +1-917-367-3186; unff@un.org; www.un.org/esa/forests/session.html

▶ 23-24 April 2009. **Carbon Markets Americas: Unlocking Latin America's true carbon market potential.** São Paulo, Brazil. Contact: Santosh Sarma; Tel: +971 4 813 5213; Mobile: +971 50 880 1671; Fax: +44 207 900 1853; santosh.sarma@greenpowerconferences.com; www.greenpowerconferences.com/carbonmarkets/carbonmarkets\_americas\_2009.html

▶ 25-29 May 2008. **Conference on Forest Tenure, Governance and Enterprise: New Opportunities for Livelihoods and Wealth**

**in Central and West Africa.** Yaoundé, Cameroon. Contact: Eduardo Mansur (ITTO RFM); Tel: +81-45-223-1110; Fax: +81-45-223-1111; mansur@itto.or.jp; www.itto.or.jp

▶ 26 May 2009. **FAO Advisory Committee on Paper and Wood Products - 50th session.** Venue to be decided. Contact: Joachim Lorbach, FAO Forest Products and Industries Division; Joachim.Lorbach@fao.org; http://www.fao.org/forestry/site/9530/en/

▶ 1-12 June 2009. **30th Sessions of the UNFCCC Subsidiary Bodies: The Sixth session of the Ad Hoc Working Group on Long-Term Cooperative Action and the Eighth session of the AWG on Further Commitments for Annex I Parties under the Kyoto Protocol.** Bonn, Germany.  
Contact: UNFCCC Secretariat; Tel: +49-228-815-1000; Fax: +49-228-815-1999; secretariat@unfccc.int; www.unfccc.int/meetings/unfccc\_calendar/items/2655.php?year=2009

▶ 18-20 June 2009.  
**International Wildfire Management Conference.** Sydney, Australia. Contact: IWMCo9 Conference Managers; GPO Box 128, Sydney NSW 2001 Australia; Tel +61 2 9265 0700; Fax +61 2 9267 5443; wildfiremanagement09@tourhosts.com.au; www.wildfiremanagement09.com

▶ 6-10 July 2009. **58<sup>th</sup> Meeting of the CITES Standing Committee.** Geneva, Switzerland.  
Contact: CITES Secretariat; www.cites.org

▶ 23-29 August 2009. **Second World Congress of Agroforestry.** Nairobi, Kenya. Contact: Dennis Garrity, World Agroforestry Centre; Tel: +254-20-722-4000; Fax: +254-20-722-4001; wca2009@cgiar.org; www.worldagroforestry.org/wca2009/

▶ 3 September 2009.  
**European Forest Institute 2009 Annual Conference.** Dublin, Ireland. Contact: Anu Ruusila, EFI; anu.ruusila@efi.int

▶ 4-5 September 2009. **Forest ecosystem management in the 21st century (seminar in connection with the EFI annual conference).** Dublin, Ireland. Contact: John Gilliland; john@ijfsolutions.com

▶ 18-25 October 2009. **XIIIth World Forestry Congress.** Buenos Aires, Argentina.  
Contact: Leopoldo Montes, Secretary-General or Olman Serrano, Associate Secretary-General. WFC-XIII@fao.org; info@wfc2009.org; www.wfc2009.org

▶ 9-14 November 2009.  
**Forty-fifth Session of the International Tropical Timber Council and Associated Committees.** Yokohama, Japan. Contact: ITTO Secretariat; Tel: +81-45-223-1110; Fax: +81-45-223-1111; itto@itto.or.jp; www.itto.or.jp

▶ 30 November - 11 December 2009.  
**Fifteenth Conference of the Parties to the UNFCCC and the Fifth Meeting of the Parties to the Kyoto Protocol.** Copenhagen, Denmark.  
Contact: UNFCCC Secretariat; Tel: +49-228-815-1000; Fax: +49-228-815-1999; secretariat@unfccc.int; http://unfccc.int/meetings/unfccc\_calendar/items/2655.php?year=2009

▶ 16-28 January 2010.  
**15<sup>th</sup> Conference of the Parties to CITES.** Doha, Qatar.  
Contact: CITES Secretariat; www.cites.org

▶ 23-27 August 2010. **8th Flora Malesiana Symposium.** Singapore.  
Contact: Singapore Botanic Gardens, 1 Cluny Road, Singapore 259569; Fax: +65-64674832; Floramalesiana2010@nparks.gov.sg; www.sbg.org.sg/fm8

▶ 23-28 August 2010. **XXIII International Union of Forest Research Organizations (IUFRO) World Congress: "Forests for the Future: Sustaining Society and the Environment".** Seoul, Republic of Korea. Contact: 2010 IUFRO Congress Organizing Committee, Korea Forest Research Institute, 57 Hoegi-ro, Dongdaemun-gu, Seoul 130-712, Korea; Tel: +82-2-961-2591; Fax +82-2-961-2599; iufrococ@forest.go.kr; http://www.iufro2010.com; http://www.iufro.org.

▶ ... continued from page 29

## Greenpeace forests for climate initiative

Greenpeace launched an international mechanism to reduce deforestation, mitigate climate change, conserve global biodiversity and protect the livelihoods of forest people with their Forests for Climate (FFC) initiative. The FFC mechanism calls on industrialized countries committed to reducing their own emissions to fund protection of tropical forests in participating developing countries that are committed to preserving their forests. The developing countries can receive funding for capacity-building efforts and for national level reductions in deforestation emissions. FFC ensures that the rights and livelihoods of local and indigenous forest people are respected.

## Oil palm plantations may drive deforestation in other ways

The continued expansion of oil palm plantations in Asia will worsen the environmental crises of climate change and biodiversity loss, unless rainforests are better protected according to a recent review published in the journal Trends in Ecology and Evolution. The study found that the biggest ecological impact was the clearance of tropical forest for oil palm, but noted that most land cover statistics are unable to distinguish where oil palm has actually driven forest clearance. The close links many oil palm companies have with timber or pulp companies may also be a contributing factor to forest clearance associated with oil palm plantation development.



- A system for monitoring forest cover, biomass and collecting data on forest carbon volumes, and for establishing baselines and reporting on emission levels from deforestation and forest degradation;
- The incorporation of sustainable development concerns, including opportunities for economic and social development for the local population, conservation of biodiversity and local and indigenous people's rights;
- Systems and national plans to prevent carbon leakage and ensure lasting results;
- Thorough analyses of the drivers of deforestation and forest degradation, and the best ways of dealing with them;
- Provisions for institutional strengthening and capacity building for national and local authorities, including anti-corruption measures and measures to increase transparency in forest and land use management;
- Mechanisms for compensation for ecosystem services; and
- The necessary legal, administrative and economic framework for sustainable forest and land use management, and arrangements to ensure compliance and cost effectiveness of measures taken.

ITTO is an organization where producers and consumers work together, and a number of the elements required in a national REDD strategy are within the scope of the current ITTO biennial work program as well as the ITTA 2006. ITTO arranged an expert meeting on climate change and tropical forests in April 2008 and is now following this up through its work programme. Norway is observing this with interest as we believe that ITTO could support and possibly act in synergy with the UN-REDD.

The first phase of UN-REDD is now established and involves "Quick Start" actions, with the objectives of developing and ensuring national ownership of national strategies, establishing systems for monitoring forest cover and biomass and reporting on emission levels and general administrative capacity building in selected pilot countries. The present partners in this quick-start program are Bolivia, Democratic Republic of Congo, Indonesia, Panama, Papua New Guinea, Paraguay, Tanzania, Vietnam and Zambia. Norway has decided to provide full funding to ensure success of the "Quick Start" program, with US\$35 million pledged so far. If the results of this first phase are satisfactory, Norway will channel substantially more funds through UN-REDD and hopes that other donors will also provide significant support.

The World Bank has established the Forest Carbon Partnership Facility (FCPF) to assist developing countries in their REDD efforts, to which Norway has contributed US\$ 5 million. The World Bank is also developing a Forest Investment Program (FIP) to mobilize funds for REDD efforts. Norway has pledged US\$ 50 million to the fund while stressing the need to complement the UN efforts so that their outcomes are coordinated and mutually reinforced.

In addition to this Norway has also committed 50 million British pounds to the Congo Basin Forest Fund (CBFF) for the period 2008–2010. The UK, which took the initiative for the establishment of this fund, has made a similar commitment. The CBFF will coordinate its work with that of the UN and the World Bank.

Norway also has two bilateral commitments for REDD-related initiatives, with Brazil in Amazonas for the payment of approximately US\$ 17 million in 2008 and approximately US\$ 100 million in 2009, and with Tanzania for the payment of approximately US\$ 80 million for the period 2008 to 2012. But the use of bilateral channels will be limited, with multi-lateral, multi-donor approaches preferred where possible.

***ITTO is an organization where producers and consumers work together, and a number of the elements required in a national REDD strategy are within the scope of the current ITTO biennial work program as well as the ITTA 2006.***

Norway's initiative acts as a catalyst for contributions from other countries, and real results will only be achieved if others provide substantial additional resources. I hope for the support of ITTO, both in its own capacity and in backing the UN-REDD, to secure confidence between producers and consumers to have this new climate and forest concept as part of the on-going climate change negotiations and hopefully to be included in a post Kyoto regime.



**Brazilian bounty:** Natural forests like this one will benefit from Norway's initiative. *Photo: J. Leigh*



## **Ambassador Hans Brattskar<sup>1</sup> explains Norway's international climate and forest initiative**

<sup>1</sup> Director, Norwegian Climate and Forest Initiative, Norwegian Ministry of the Environment

As deforestation and forest degradation in countries with tropical forests account for nearly 20% of annual anthropogenic CO<sub>2</sub> emissions, reducing emissions from deforestation and forest degradation (REDD) is a very important and appropriate mitigation option, according to the IPCC, the British Stern Review and others.

It was against this background that Prime Minister Jens Stoltenberg launched Norway's International Climate and Forest Initiative during the climate change negotiations at Bali in December 2007, and announced that Norway is prepared to allocate up to US\$ 500 million a year to REDD activities in tropical forest countries. The initiative also aims at providing positive impacts on poverty reduction, biodiversity and other environmental services, as well as improvements in sustainable forest governance.

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While the Kyoto protocol contains measures to promote afforestation and reforestation, REDD activities are currently excluded. Norway will assist to demonstrate progress in developing REDD projects and solutions so that these emissions can be included in the global post-2012 climate regime negotiations taking place in December 2009 in Copenhagen. Norway wants to assist in establishing a robust, effective and flexible international architecture for a REDD system according to the principles established by the IPCC.

If REDD efforts are to succeed, more countries and other actors will have to become involved. Norway's contribution is to work towards the establishment of an international architecture



**Ambassador Hans Brattskar**, Director, Norwegian Climate and Forest Initiative, Norwegian Ministry of the Environment

that will allow REDD initiatives to commence and encourage other countries to take part. In ITTO terms, producer countries need to develop national REDD strategies and consumer countries need to provide funding.

Norway's policy for ensuring a coherent international response seems to be making progress. The UN has established its UN-REDD program, under which UNEP, UNDP and FAO are cooperating on activities in the field of REDD. This program will be a main channel for Norwegian funding. The UN, in agreement with Norway on the need for coordination of international efforts, will coordinate their work with the

World Bank. Steps are also being taken to ensure the active involvement of other actors, such as tropical forest countries and other bilateral donors, international organizations, research organizations, NGOs, representatives of indigenous peoples, and extractive industries that have a major influence on deforestation and forest degradation.

The main idea is that UN-REDD should assist tropical forest producer countries in developing and implementing national REDD strategies through an international support program headed by the appropriate international organization selected by the recipient country. This may involve contributions from other international organizations, donor countries, NGOs, research institutions and others.

There also needs to be a support structure at the international level for quality assurance of monitoring systems and reporting of emission levels as well as other responsibilities like information management, systematic communication of information about tested methodologies, and capacity building within REDD-relevant fields. The principle of ownership and preparation of strategies at the national level will be of crucial importance for the success of REDD initiatives.

The following are elements that need to be considered in or established through national REDD strategies:

- A national coordinating unit for each forest country, preferably at government level, responsible for developing and coordinating strategies, overseeing implementation and liaising with the international UN-REDD support;

