ISSN 1022–5439

ITTO

Tropical Forest UPDATE

Volume 19 Number 1

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

Getting a lock on governance

During the past decade, the issue of forest governance has grown increasingly prominent in international and national forestry deliberations. This is a welcome development from the situation that prevailed not so many years ago, when countries and international organizations treaded warily around the edges of the topic and were allergic to related issues such as corruption and illegal forest-based activities.

Simply put, forest governance refers to the way that power and control over forest resources is exercised. The World Bank estimated in 2007 that poor forest governance led to market and government revenue losses of US$10-15 billion per year. Recognizing the impact of such losses, almost all tropical countries have embarked on processes to improve forest governance in recent years, including review of existing and introduction of new legislation, establishment of new (or strengthening of existing) oversight bodies and the use of new monitoring/control technologies. However, many of these same countries are the first to admit that challenges and problems persist. As Irland points out in this issue (p.3), almost half of the world's forests are in

ITTO

Contents

Regular features

Editor Steven Johnson
Editorial assistant Kenneth Sato
Design DesignOne

The *Tropical Forest Update* is published quarterly in English, French and Spanish by the International Tropical Timber Organization. Content does not necessarily reflect the views or policies of ITTO. Articles may be reprinted without charge provided the *TFU* and author(s) are credited. The editor should be sent a copy of the publication.

Printed using vegetable-based inks on stock that comprises 80% recycled fiber from postconsumer waste and 20% totally chlorine-free pulp, sourced from certified sustainable forests.

The *TFU* is distributed **free of charge** to over 15 000 individuals and organizations in more than 160 countries. To receive it, send your full address to the editor. Please notify us if you change address. The *TFU* is also available on-line at www.itto.int.

International Tropical Timber Organization
International Organizations Center – 5th Floor
Pacifico-Yokohama, 1–1–1 Minato Mirai, Nishi-ku
Yokohama 220–0012 Japan
t 81–45–223 1110
f 81–45–223 1111
tfu@itto.int
www.itto.int

Cover image *Photo: MaxFX/istockphoto*

... Editorial continued

countries where governance is either poor or lacking entirely.

In addition to national efforts, various international initiatives have arisen in recent years to try and improve forest governance. Ministerial meetings have been convened in several regions to discuss the scope of the problem and possible solutions (the so-called Forest Law Enforcement and Governance or FLEG process). The European Union has signed voluntary partnership agreements with a number of countries to improve forest governance and thereby maintain access to EU timber markets under its Forest Law Enforcement, Governance and Trade (FLEGT) scheme. The US Lacey Act and timber procurement policies in a range of countries are discouraging trade in illegal timber products. Various legality assurance schemes and standards are being promulgated to help countries demonstrate legality. And the coverage of timber certification schemes that assure consumers of good forest management and governance continues to grow, although still at a much lower level in the tropics than in developed countries.

ITTO has also been active in assisting member countries to improve forest governance. This assistance has included projects to review and draft appropriate forestry legislation, strengthening of enforcement capacities, and funding for improved monitoring and control of forestry operations. A good example of ITTO's work in this area is a recently completed project in Guyana allowing the government to monitor land clearance and log movements in a timely manner (p. 7). The Organization has also collaborated extensively on developing policy guidance for countries, co-publishing with FAO *Best practices for improving law compliance in the forest sector* and convening five regional workshops to disseminate and share experiences on best practices in forest governance. ITTO and FAO recently published a policy brief summarizing the outcomes of this work (p. 30). ITTO's new Thematic Program on Tropical Forest Law Enforcement, Governance and Trade (TFLET) offers targeted country-level assistance for improving governance and has already attracted significant interest from both recipient countries and donors. Many TFLET funded projects are now underway (e.g. p. 27) and funding for several more was about to be announced as the *TFU* went to press. ITTO will continue to collaborate with partners (including the initiatives listed above) in implementing activities to improve forest governance under TFLET.

Another recent development that has the potential to drive further improvements in forest governance is the prospect of substantial funding through various climate change related initiatives and mechanisms. Certainly, challenges remain (e.g. p. 9, p. 22) but the prospect of such funding is already leading to changes on the ground in many countries. While the outcome of the recently concluded UNFCCC CoP in Copenhagen was disappointing to many, the prospect of significant additional funds for forests was one bright spot. Australia, France, Japan, Norway, the United Kingdom, and the United States committed US$3.5 billion of fast-start climate change financing for 'REDD+' activities over the 2010 to 2012 period. And it is hoped that private sector funding (e.g. through voluntary carbon markets) will eventually dwarf government transfers like these. While there is still some uncertainty as to how such funds will be administered and delivered, it seems safe to say that donors and investors will insist on verifiably good forest governance and robust monitoring systems as a prerequisite for any significant transfer of funds.

Whatever drives it, no one can deny that forests and forest governance are under an unprecedented degree of scrutiny. Perceptions of tropical timber and tropical forest governance can have significant impacts on markets, as shown in the study of the UK market summarized in this issue (p. 14). Countries that get a lock on governance in their forest sectors will be those best placed to ensure ready access to markets for the products arising from, and new funding for environmental services provided by, forests.

Steve Johnson
Editor

State failure and corruption: challenges for forest policy

Strengthening weak governance is essential for sustainability

By Lloyd C. Irland

Yale School of Forestry
and Environmental Studies,
New Haven, CT, 06511, USA
lloyd.irland@yale.edu

Making hay: Illegal logging camp, Southeast Asia *Photo: L. Irland*

This article reviews existing widely used data through a specific lens: how does the world's forest area appear, when we classify nations according to state weakness and corruption? When the globe's forest is viewed in this way, the results are startling:

- Nearly half of the globe's forest area (2005) is in nations racked by "rampant corruption" according to Transparency International (see chart below).
- A significant number of the world's biodiversity hotspots occur in such countries.
- One sixth of the world's forests lie in states classified as "fragile" by the UK Department for International Development (DFID).

Addressing the challenges of weak governance, corruption and conflict is the essential precondition for successful forest policy

Numerous analyses of forest resource and biodiversity policies have identified weak governance and corruption as constraints. Yet, when these subjects appear in lengthy listings of policy issues, an optical illusion is created – the illusion that one may pick and choose which issues to pursue for "reforms". This is a misconception. *Addressing the challenges of weak governance, corruption and conflict is the essential precondition for successful forest policy*. This is true whether the goal is to sustain local livelihoods, produce future crops of commercial timber, or protect biodiversity.

Fragile or failed states

"Failed states" (UK DFID 2005) include the worst examples of civil strife, warlordism, and social collapse that can be found. In recent years they have included:

Angola
Afghanistan
Burundi
Democratic Republic of Congo
Haiti
Liberia
Sierra Leone
Somalia
Sudan

Several of these nations contain globally significant forests and biodiversity resources; in others, forests and woodlands are critically important for local well-being. The Democratic Republic of the Congo, for example, not only ranks 7th in the world in forest area, but contains important reserves of endangered species and biodiversity.

A UK DFID publication (2005) listed 46 "fragile" states (see table). The list of fragile states with significant forest area encompasses only 15 percent of the world's forests. These are concentrated in Africa (66 percent of the forest land in fragile states) and in Southeast Asia. These nations account for over a third of ITTO's 33 producer members, for which a recent evaluation (ITTO 2006) found a low level of sustainable forest management. According to FAO estimates, the 35 countries listed below lost 21 percent of their forest area from 1990 to 2005 while the world as a whole lost only 3.3 percent. Plainly, population growth and local economic circumstances helped drive this loss of forest, but poor governance and conflict played a leading role in many fragile countries.

Fragile and falling

Forest areas of fragile states (1000 ha, 35 nations with over 100 000 ha forest)

Region/country	1990	2000	2005
Africa			
Angola	70 998	69 756	59 104
Cameroon	26 076	23 858	21 245
Central African Republic	23 207	22 907	22 755
Chad	13 509	12 692	11 921
Cote d'Ivoire	9 766	7 117	10 405
Democratic Republic of Congo	140 531	135 207	133 610
Eritrea	1 639	1 585	1 554
Ethiopia	4 996	4 593	13 000
Gambia	436	481	471
Guinea	7 276	6 929	6 724
Guinea-Bissau	2 403	2 187	2 072
Kenya	18 027	17 096	3 522
Liberia	4 241	3 481	3 154
Mali	14 179	13 186	12 572
Niger	1 945	1 328	1 266
Sierra Leone	1 416	1 055	2 754
Somalia	8 284	7 515	7 131
Sudan	71 216	61 627	67 546
Togo	719	510	386
Zimbabwe	22 239	19 040	17 540
Asia/Pacific			
Afghanistan	1 351	1 351	867
Cambodia	9 896	9 335	10 447
Indonesia	118 110	104 986	88 495
Lao People's Dem Rep	13 088	12 561	16 142
Myanmar	39 588	34 419	32 222
Nepal	4 683	3 900	3 636
Papua New Guinea	31 730	30 601	29 437
Solomon Islands	2 580	2 536	2 172
Vanuatu	441	447	440
Eastern Europe			
Azerbaijan	964	1 094	936
Georgia	2 988	2 988	2 760
Tajikistan	380	400	410
Uzbekistan	1 923	1 969	3 295
Middle East			
Yemen	541	449	549
South America			
Guyana	17 365	16 879	15 104
Africa total	**443 103**	**412 150**	**398 732**
Fragile total	**763 899**	**701 774**	**605 644**
World total	**4 077 291**	**3 869 445**	**3 863 878**
Fragile as percent of world	18.7%	17.6%	15.3%
Africa as percent of total fragile	58.0%	58.7%	65.8%

Sources: UK DFID 2005; FAO 2006

Corruption and forests

Corruption of government and private business is a global epidemic. It threatens prosperity and security of many nations. It poses strong challenges for forest conservation activities of any kind, whether aimed at wood production, at wildlife and biodiversity protection, or at carbon storage. Corruption hinders legal forest industry, medicinal harvesting, or tourism activity by raising the costs and risks of transport and trade. It bleeds off forest revenues into the wrong hands. Revenue from illicit activities feeds the most predatory elements of society. Corruption not only raises current costs and risks. It also raises the discount rates of actors in the market, and prevents any form of long-term or patient investment. In a high corruption economy, long-term investment is simply irrational. Activities will only be conducted that involve rapid turnover of cash. In a rampant corruption setting, honest, transparent operations become commercially impossible. Strikingly, some authoritarian regimes, which devote massive resources to censorship of the media and suppression of individual liberties, are unable to control corruption, and despite maintaining large armed forces and police services, can never find sufficient staff and funds for protecting and managing natural resources.

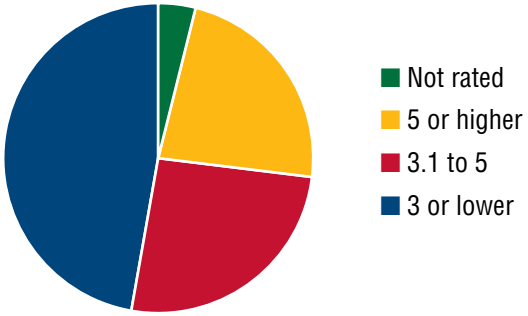
A private group, Transparency International (TI), conducts surveys to measure perceptions of corruption in countries around the world. Nations are rated on a scale of 1-10, a so-called "Corruption Perceptions Index" (CPI). By these ratings, the least corrupt nation in the world in 2005 was Finland, at 9.6; while Bangladesh and Chad tied for the most corrupt at 1.7. TI's analysts say that a rating of 3 or below indicates "rampant" corruption. In 2005, seventy countries scored less than a 3 in the TI ratings.

Almost half of the globe's entire forest area is in nations exhibiting "rampant corruption" according to the TI index (see chart). This is a staggering total of 1.9 billion ha of forest land. Another 26 percent of the world's forest occurs in nations with CPI ratings from 3.1 to 5. Only 13 percent is in nations rating above a 5. Worryingly, overlaying the TI ratings against a map of biodiversity hotspots indicates that many of the major areas of conservation concern identified by NGOs like Conservation International are in nations rating below a 3.

The Seneca Creek Associates/Wood Resources International illegal logging study found that virtually all of the nations where "suspicious logging activity" exceeded 10 percent were rated 3 or below in the TI rating scheme (SCA/WRI 2004). There are situations in which the concept of "illegal logging" is at best ambiguous, as in areas where forest management units or reserves have been created that purport to abrogate traditional use rights. But the most prominent examples, involving large scale cutting of logs for export, are not of this character, though they often occur in regions of tenure disputes.

Bent

Global forest area (%) by TI Corruption Perceptions Index, 2005



Significant forested nations prominent in TI's "rampant corruption" category include Russia (809 million ha of forest), Democratic Republic of Congo (134 million), Indonesia (105 million) and India (68 million).These four large nations alone account for more than one quarter of the world's forest area. Brazil, with 478 million ha of forest, rates a 3.7. Anecdotal evidence suggests that were the Amazon alone to be rated separately in this manner, its 2005 rating would have been well below a 3. China, with 197 million ha of forest, rated a 3.2 CPI from TI.

NGO's have conducted most of the significant field work that has placed resource corruption and illegal logging in the public eye. Organizations like Global Witness, the Environmental Investigation Agency, Forest Monitor, Forest Trends, and Greenpeace, among others, have played a leading role. Until recently, one could search in vain in mainstream forestry literature for serious, professional, and detailed reporting and analysis on these issues. Matters have improved in recent years. A special issue of the International Forestry Review (Pottinger 2003) was devoted entirely to illegal logging and the problems are an increasing focus of efforts to ensure legal wood supplies in major markets like the EU and the USA.

Impacts of weak governance on forests

- The danger of paper policies is that people might actually think something is being done about the problem, when in fact nothing is actually happening to improve the situation.
- All forms of law enforcement are undermined.
- Incapacity to implement even rudimentary harvest limits, silvicultural prescriptions, or park protections.
- Governments are unable to deliver on commitments made under international agreements or Conventions that relate to natural resource management.
- Leaders and officials in weak/unstable regimes have every incentive to "make hay while the sun shines" (discount rates are extremely high).
- Disincentive for long-term capital investment.
- Say's Law – bad money drives out the good. Only the corrupt keep doing business.
- Misgovernment corrupts the data … no one can believe the "facts and figures".
- Loss of government, citizen, and business funds to graft, the fruits of which often leave the country, exacerbating poor economic conditions.
- Loss of trust in local/regional government and other agencies that need to be active to make programs work on the ground.
- Aid funds and materials are lost through graft and mismanagement.
- Further demoralization of staff – the "culture of corruption" perceived to be impossible to change.

Emerging remedies

History justifies skepticism about high-flown statements adopted by world leaders contained in flowery press releases announcing grand initiatives. Usually the issuers of such statements are not in a position to change realities very much on the ground. As the FAO noted, *"In the fight against illegalities and corruption, words, rather than action, frequently dominate"* (FAO 2001).

Recognition by some national governments, and by major companies in the trade, that something must be done, is creating a new political dynamic. Mainstream industry and trade groups (such as the American Forest and Paper Association) are now recognizing the problem and publicizing it, even if they do not support every suggestion on the table for addressing it. At a high level, the issue is gaining attention, as detailed in a recent World Bank (2006) report (see also Collier 2007; Rose Ackerman 1999; Setiono and Husein 2005; and Spector 2005).

A short list of efforts deserving support in this area might include:

- Ending the conspiracy of silence

  For too many years, powerful prohibitions were enforced against using the "C" word in the official publications of some international organizations. Keeping the issue in the closet by ignoring it was intellectually dishonest, and contributed nothing to better forest and biodiversity policy. No example has yet been recorded of corruption being ameliorated by ignoring it. So long as official bodies maintained this conspiracy of silence, it contributed to complacency among groups less well informed, and diminished the credibility of the agencies themselves.

- Labeling systems for legal wood and commitments by buyers

  If it proves to be possible to credibly audit supply chains and label legally sourced wood, the potential exists to slowly create incentives for more and more suppliers to follow the rules. Unfortunately, in the near term, there will always be large market opportunities for illegal wood, which will benefit not only from the cost saving of not paying royalties, but also by avoiding the costs of the audit system to ensure legality. Considerable work is under way to develop credible and workable systems, with major processors and distributors of wood based consumer products and printers beginning to take action to clean up their supply chain (see Irland 2007). The Global Forest Trade Network is one example of a coalition of NGOs and companies seeking to improve supply chain transparency and accountability (http://gftn.panda.org/).

- Corporate transparency and accountability

  Today, one hears somewhat less about the supposed accountability and transparency of the corporate and financial sector. Given the ease with which accounts can be fiddled, and with which supposedly neutral arbiters such as accounting firms were bought off in those episodes, optimism about the efficacy of accounting improvements must be somewhat modest. Still, if vigorous ENGO and shareholder, as well as regulatory pressure, can be brought to bear on the corporate sector to embrace such standards as contained in the OECD and Transparency International guidelines for fighting corruption, some improvements seem possible.

Legal logs: Tracking systems and bar codes are becoming more widespread to deal with illegal logging *Photo: L. Irland*

- Be realistic in planning forestry/biodiversity programs/projects

  Recognize that the friction caused by weak governance and corruption will compromise project effectiveness. Agencies should select projects with minimum exposure to those risks. Project plans should include specific attention to steps taken to immunize them from the effects of corruption and governance failures. They should be honest with project sponsors about the risks posed by weak governance conditions.

Summary

Wherever government is absent or dysfunctional, forest policy will not work. Much of the world lacks governmental capacity to make any kind of policy work, except as an accidental adjunct to the private business interests of ruling elites. So, policy proposals or designs that assume institutional and social stability, the rule of law, and sound administration, are not likely to enjoy success.

The problems are:

- State incapacity or state control by corrupt political, military, and business elites.
- Rampant corruption, which means that paper policies and paper parks simply cannot be implemented in many significant forest nations.
- In these conditions, criminal groups are often able to operate with relative impunity. Further, "policies" enunciated by high-level agencies are likely to be fraudulent. Treaties and international undertakings, signed with due solemnity, are often ignored.

Forest and resource management work, research and institution building nonetheless needs to go on in fragile states, somehow seeking to evade or outwit the consequences of governance failures. The World Bank and other organizations, along with a series of active NGO's, have been active in recent years assessing and proposing responses to the problems of illegal logging and corruption. None too soon, the conspiracy of silence is breaking down. Private, state, and NGO actors are pursuing improvements. This heartening trend must be encouraged.

References

Collier, Paul. 2007. *The bottom billion.* Oxford, Oxford University Press.

FAO. 2001. *State of the world's forests, 2001.* FAO Forestry Dept., Rome.

FAO and ITTO. 2005. *Best practices for improving law compliance in the forestry sector.* FAO Forestry Paper 145, Rome.

FAO. 2006. *Global forest resource assessment, 2005.* FAO, Rome.

International Tropical Timber Organization. 2006. *Status of Tropical Forest Management, 2005.* ITTO, Yokohama, Japan.

Irland, Lloyd C. 2007. *Developing markets for certified wood products: greening the supply chain for construction materials.* Journal of Industrial Ecology 11(1): 201-216.

Pottinger, A. (Ed.). 2003. *Special issue on illegal logging.* International Forestry Review 5(3).

Rose-Ackerman, S. 1999. *Corruption and government: causes, consequences, and reforms.* Cambridge University Press, New York.

Seneca Creek Associates and Wood Resources International. 2004. *"Illegal" logging and global wood markets: competitive impacts on the US wood products industry. Summary.* American Forest and Paper Association, Washington.

Setiono, B. and Y. Husein. 2005. *Fighting forest crime and promoting prudent banking for sustainable forest management.* Occ. Paper No. 44. CIFOR, Bogor.

Spector, B.I. (Ed.). 2005. *Fighting corruption in developing countries: strategies and analysis.* Kumarian Press, Connecticut.

Transparency International Corruption Perceptions Index. 2005. Retrieved March 1, 2007 from www.transparency.org/cpi/2004.

UK Department for International Development. 2005. *Why we need to work more effectively in failed states.* London.

World Bank. 2006. *Strengthening forest law enforcement and governance: addressing a systemic commitment to sustainable development.* Washington.

This article is condensed from an essay in the December 2008 issue of the Journal of Sustainable Forestry, *where more complete discussion, references, and data can be found.*

Keeping it legal

An ITTO project improves the detection and prevention of illegal logging in Guyana

By Pradeepa Bholanath

Head, Planning and Development Division

Guyana Forestry Commission (GFC), Georgetown, Guyana

project.coordinator@forestry.gov.gy

Scanned: GFC official checks legality at log pond *Photo: P. Bholanath/GFC*

With over 13 300 000 hectares of State Forest Estate in a largely pristine state and a forest sector supporting over 20 000 employees and many forest based communities, legality has been a priority for Guyana's forest sector. Almost 50% of the State Forest Estate of Guyana remains unallocated in terms of commercial production use, while the remaining 50% is under sustainable management and is largely intact. While the extent of illegal logging in Guyana is thought to be generally low, the impacts of illegal activities can have significant impacts on Guyana's relatively small and developing economy as well as having environmental and socio-cultural consequences, if prevention and detection is not appropriately done. As such, forest law enforcement in countries with low rates of illegal logging and trade, like Guyana, is still of utmost importance for the continued sustainable development of the forest sector.

Over the past nine years, several activities have been implemented in Guyana to allow for detection and prevention of illegal logging and illegality in trade of wood products. In 2000, a log tagging and tracking system was developed and implemented nationally in 2001. This provided a comprehensive mechanism for verification of legality of origin of forest produce, and also provides one important requirement for a chain of custody or legal verification/assurance system for operators. Additionally, the forest management planning requirements and system of document control provides a further mechanism to allow for legality to be maintained. This focus is reflected in the work plan of the GFC, specifically in the work plan of the Planning, Forest Resources Management and Forest Monitoring divisions. An important part of the work plan of the Forest Monitoring Division focuses on environmental and general monitoring of forest activities in and around forest concessions, throughout the chain of custody of forest produce. This includes managing the log tracking system and associated documentation systems involved in forest activities.

Following an assessment of these systems by the GFC, it was identified that there were areas for improvement in detection and prevention of illegal logging and trade of wood products in Guyana. The conclusion of this assessment indicated that improvement in the prevention and detection of illegal logging and illegality in the shipment and trade of wood products can be enhanced by improving detection, reporting and recording of illegal acts, national level routine assessments, and an institutional arrangement within the GFC that allowed for a dedicated, permanent programme that addresses legality.

These key areas formed the main outputs of project PD 440/07 Rev.1 (M) which was submitted to ITTO in 2007. The project outputs were: dedicated geographic information system (including satellite image analysis and legality database); barcode timber-tracking system; central monitoring and detections database; wide-area computer network (WAN) and report dissemination procedure; and Legality and Monitoring Extension unit of the GFC. Implementation began in February of 2008 and activities were completed in late 2009.

Remote sensing of illegality

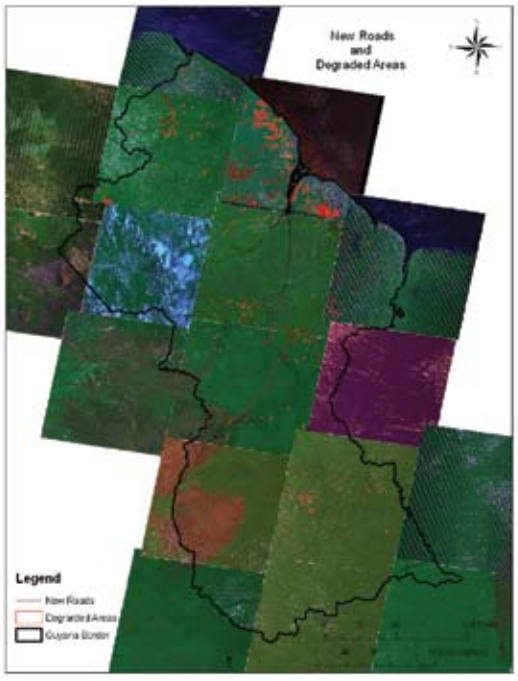
One aspect of the project involved improving detection of illegal logging through satellite imagery analysis. The value of satellite systems in monitoring logging activities, especially in the tropics, is widely appreciated. Two time periods were assessed, based on indicators of illegality which were developed, and with reference to the legislative and regulatory guidelines for legality in the forest sector of Guyana. These periods were 2005-2007 and 2008-2009, for which the indicators of illegality were used to identify areas of possible illegality. This layer of assessment was done using Landsat images at medium

resolution (30m). More detailed detection involved monitoring "hot spots", selected areas in Guyana exposed to known drivers of forest cover change: forestry activities, mining, and other land uses. For this layer of monitoring, which also allowed for cost effectiveness in data coverage, high resolution data for selected areas were obtained from the ASTER radar satellite at 15 m resolution and CERS (20 m).

A prototype decision support flowchart (decision tree) was developed to guide the process of assessment and a number of illegality indicators that were developed and used to assist GFC in determining the nature and type of forest clearance. The flowchart provided a tool to support decisions regarding appropriate response(s) by GFC to detection of changes in forest cover determined from medium resolution satellite images. At this scale, change can be categorized as linear or polygon features – equating to roads and canopy gaps (approximately 1 ha or greater), respectively. The location of change was one of the main determinants of whether it was considered likely to be illegal activity related to logging. Some of these areas were verified by ground truthing and aerial surveys. Reference to proposed operations presented in Annual Operations Plans (AOPs) was necessary to support a decision on the probable legality of any activity detected.

The result of the satellite interpretation was a national base layer comprising harvested areas, road networks, and areas subject to clearance by mining, agriculture and other activities. In some cases, images had to be used in combination with forest and other land use allocation information to make a definitive determination (see map). This approach was effective in allowing for national level coverage of the forest at minimal cost, scoping of areas that are both accessible and inaccessible, and for a comprehensive assessment by custom developed indicators of illegality.

We see you: Remote sensing and GIS allow production of monitoring maps like this



Timber tracking

The second aspect of the system developed under the project involved the improvement of Guyana's log tracking system. In 2001, the national log tracking system was implemented using manual means of verification. Under this system, cut logs and stumps are identified using a plastic barcode tag that is attached immediately after logging or when logs are converted into pieces at timber collection points. The manual implementation of this system, however, did not allow for the full benefits of traceability and verification of origin to be realized. The project aimed at helping prevent illegal logging and trade in illegally harvested timber by expanding the timber tracking system to the harvesting of tropical forests, shipment and exporting stages.

The timber tracking system was based on a barcode system utilizing wide area computer networks. By connecting to a central database, this system enables distribution systems to be managed from the origin of the timber that was harvested through to the point where it is distributed, processed and exported. The system developed collects several key pieces of information including: concession identification (name and number), type of produce being removed, timber species, tag number, date of expiry, and block number identifying the specific approved location in the case of large concessions. The information collected by GFC's field offices is linked via a wide area network to a central database at GFC's head office. Both the WAN and the central database have been developed as part of the ITTO project.

The improved national log tracking system allows for an overall enhancement of detection and prevention of illegal logging and illegality in trade of wood products by using an existing national system and filling gaps in its operation. Additionally, the necessary database infrastructure, networking and communication linkages were also created to allow for a comprehensive effort to be made in detection and prevention, in a timely, coordinated and effective manner.

Challenges and lessons learned

The project design allowed the development objective to be met via the full integration of all steps in the production to export chain (production, transportation, declaration, processing, export); this was then used in enhancing the level of legality in the forest sector from the production level, through to processing and then to export. The project built on existing systems, capacities and infrastructure in place at the GFC and in so doing, allowed for smooth implementation and overall effective transition from the systems currently in place, to those designed through the project. This approach also allowed for the sustainability of the initiative to be maintained as cost and human resources at the GFC are appropriate and adequate to allow for continuity of the initiatives. Further, the approach taken was to build local capacity to conduct the project activities. This also lent to local resources being used primarily for continued implementation of systems designed.

From an operational perspective, having the national agency that is responsible for managing legality in the forest sector of Guyana (GFC) as the main executing agency for the project resulted in a coherent and systematic approach being taken that allowed for continuity and sustainability of the initiatives. Additionally, the availability of resources at the GFC, especially in terms of infrastructure and human resources in areas such as geographic information systems allowed for existing capacity to be utilized and built on instead of starting anew. The new ITTO online project monitoring system also enabled more systematic tracking of activity progress which resulted in careful attention being placed toward ensuring that activities remained on track as planned and that inputs from ITTO were received in a timely fashion.

Continued on page 21

Can REDD make natural forests competitive with oil palm?

Not at current carbon prices, study finds

By Lian Pin Koh[1] and Rhett A. Butler[2]

[1]Institute of Terrestrial Ecosystems, ETH Zürich, CHN G 73.1 Universitätstrasse 16, 8092 Zürich, Switzerland.

lian.koh@env.ethz.ch

[2]Mongabay.com, P.O. Box 0291, Menlo Park, California 94026, USA

mongabay@gmail.com

Oil line: Oil palm plantation and logged natural forest, Sabah, Malaysia *Photo: R. Butler/mongabay.com*

In less than a generation oil palm cultivation has emerged as a leading form of land use in tropical forests, especially in Southeast Asia. Rising global demand for edible oils, coupled with the crop's high yield, has turned palm oil into an economic juggernaut, generating US$ 10 billion in exports for Indonesia and Malaysia, which account for 85 percent of palm oil production, alone. Today more than 40 countries - led by China, India, and Europe - import crude palm oil.

Conservation scientists have shown that oil palm expansion over the past few decades has led to the destruction of large swaths of tropical rainforests

The economic importance of the oil palm industry to Southeast Asia is undeniable. But such financial gains have come at a high price for the native wildlife and traditional rural livelihoods in this region. Conservation scientists have shown that oil palm expansion over the past few decades has led to the destruction of large swaths of tropical rainforests—to the detriment of many rare and endangered species that depend on these forests for survival (Fitzherbert *et al.* 2008; Koh and Wilcove 2008; Danielsen *et al.* 2009). Furthermore, social activist groups, such as Oxfam (www.oxfam.org) and Sawit Watch Indonesia (www.sawitwatch.or.id) have documented numerous cases of alleged land-use conflicts between oil palm companies and indigenous communities. Not only are such impacts continuing, but they are likely to intensify in the future as international demand for oil palm products continues to grow.

In an effort to improve plantation management practices, the Roundtable on Sustainable Palm Oil (RSPO; www.rspo.org) was established in 2004 by a group of nongovernmental organizations, oil palm producers and retailers. The RSPO awards certificates to companies that produce palm oil according to a set of principles and criteria. The ultimate goal of the RSPO is to enhance the environmental performance and corporate image of the oil palm industry. However, given the powerful economic forces driving oil palm expansion and the prolonged economic downturn, this is much easier said than done. Indeed, environmental groups continue to produce evidence of forest clearing for new plantings (Greenpeace 2007), while NGOs and regional media report ongoing conflict with local communities from their native lands (www.orangutanprotection.com, sawitwatch.or.id). But even if RSPO proves a success, many operators are not, and have no intention of becoming, members. Further there is little evidence to suggest that RSPO is even finding much of a market for its eco-certified palm oil (CSPO). To date, only 15 000 tons of CSPO—representing ~2.5% of that produced—have been purchased (WWF 2009). At the same time, oil palm plantation continues to spread across the tropics (Butler 2008). Can the palm oil industry be otherwise coaxed towards practices that don't consume biodiverse and carbon-rich ecosystems?

REDD promise

A potential solution to might lie in a scheme called *Reducing carbon Emissions from Deforestation and forest Degradation* (REDD). REDD is being developed as a financial mechanism to compensate land owners, organizations or governments for the value of carbon stored in forests that would otherwise be released into the atmosphere through deforestation (Miles and Kapos 2008). Carbon credits generated from REDD could be used to pay for not only forest protection but also biodiversity conservation and poverty alleviation. But the big limitation presently facing REDD is that credits cannot be used to meet emission reductions obligations, thereby limiting them to voluntary markets like the Chicago Climate Exchange (www.chicagoclimatex.com), where they fetch substantially

lower prices than compliance credits traded in the European Union's Emissions Trading Scheme. Until REDD credits are recognized under an international climate regime they are unlikely to compete financially with oil palm on most types of land.

A recent study provides an illustration. Economic models developed to evaluate returns from REDD and oil palm under different price scenarios found that a carbon price of US$18-46 per ton of CO_2 would be needed to make REDD credits from forest conservation competitive with palm oil. By comparison, credits on the CCX traded in mid-2009 for around US$4 per ton. For peatlands, which lock up large amounts of carbon below ground, the break-even point with palm oil is roughly two-fifths of that—but still outside the range of voluntary market prices. Looking at the calculations in another way, the net present value (NPV) of a REDD project in voluntary markets would range from US$614 to US$994 per hectare over a 30-year project timeframe, as opposed to an oil palm operation that could yield NPVs of US$3835-$9630 per hectare (Butler *et al.* 2009). Thus it remains more profitable to convert a forest to oil palm than to preserve it for an REDD project.

However, if in future climate policies REDD becomes recognized by the United Nations (UN) as a legitimate activity for reducing carbon emissions, REDD credits would be compensated at higher prices, either via a UN-sanctioned market mechanism or a global fund. REDD could be worth more than $6600 per hectare (Butler *et al.* 2009) under this scenario, potentially making forest protection an economically competitive land-use option compared to oil palm agriculture or other more profitable land-use activities, especially considering the potential co-benefits of environmental protection.

Another recent development that could tip land-use decisions in favour of REDD is that over the last decade or so, large plantation companies rather than small-scale rural farmers have become the dominant driving force of land-use change across the tropics (Rudel 2007; Butler and Laurance 2008; see also *TFU* 18-4). Many plantation companies now hold large tracts of concessions that are still forested—the sheer extent of which would contribute significantly to biodiversity conservation if they could be preserved. In fact, some plantation companies are already setting aside patches of forests as private nature reserves, driven by pressures from environmental groups, and also as part of the RSPO certification process (Koh and Ghazoul 2009). Furthermore, it's worth noting that oil palm companies have not always planted oil palm but have often shifted from planting rubber to coconut to cocoa over the last few decades—which suggests that companies may be on the look-out for the next profitable cash crop, which could well be carbon.

Paradigm shift

The adoption of REDD by UN climate policy makers could therefore be a tipping point for the way plantation companies operate and strategize their long-term business plans. It is not unimaginable that through their participation in REDD, some companies could transition from being destroyers of natural forests (with the loss of associated biodiversity) to become their managers and protectors—much as how former wildlife poachers in Sub-Saharan Africa and Latin America had been successfully turned into effective rangers in nature reserves (Feltner 2009).

This admittedly is a radical proposition. And there undoubtedly are difficult technical, political and ethical challenges to be resolved. Furthermore, the opportunity costs of REDD would be incurred at several societal levels and expressed as both the relatively obvious direct cost (of foregone economic potential) and less obvious indirect costs including impacts on employment, tax revenues, societal and governmental perspectives on financial investments in REDD project regions. There are substantial challenges to overcome if REDD is to be successfully implemented in the future. However, a paradigm shift of this magnitude may be necessary, if not critical, in developing effective strategies for ameliorating the detrimental impacts of oil palm expansion and other forest conversion activities.

References

Butler, R.A. *et al.* 2009. *REDD in the red: palm oil could undermine carbon payment schemes.* Conservation Letters 2: 67-73.

Butler, R.A., Laurance, W.F. 2008. *New strategies for conserving tropical forests.* Trends in Ecology & Evolution 23: 469-472.

Butler, R.A. 2008. *Palm oil industry moves into the Amazon rainforest.* Mongabay.com. 9 July (http://news.mongabay.com/2008/0709-amazon_palm_oil.html).

Danielsen, F. *et al.* 2009. *Biofuel plantations on forested lands: double jeopardy for biodiversity and climate.* Conservation Biology 23: 348-358.

FAO. 2009. *FAOSTAT Online Statistical Service.* Food and Agriculture Organization of the United Nations, Rome, Italy.

Feltner, M. *Turning Poachers into Conservationists in Rwanda.* National Geographic Traveler. 13 May (http://blogs.nationalgeographic.com/blogs/intelligenttravel/2009/05/turning-poachers-into-conserva.html).

Fitzherbert, E.B. *et al.* 2008. *How will oil palm expansion affect biodiversity?* Trends in Ecology & Evolution 23: 538-545.

Greenpeace. 2007. *How the palm oil industry is cooking the climate.* Greenpeace International. (http://www.greenpeace.org/international/press/reports/cooking-the-climate-full).

Koh, L.P. and Ghazoul, J. 2009. *Designer landscapes for sustainable biofuels.* Trends in Ecology and Evolution, in press.

Koh, L.P. and Wilcove, D.S. 2008. *Is oil palm agriculture really destroying tropical biodiversity?* Conservation Letters 1: 60-64.

Miles, L. and Kapos, V. 2008. *Reducing greenhouse gas emissions from deforestation and forest degradation: global land-use implications.* Science 320: 1454-1455.

Rudel, T.K. 2007. *Changing agents of deforestation: from state-initiated to enterprise driven processes, 1970-2000.* Land Use Policy 24: 35-41.

WWF. 2009. *Slow Sales Of Sustainable Palm Oil Threaten Tropical Forests; WWF To Grade Palm Oil Buyers.* 12 May 2009 (http://www.worldwildlife.org/who/media/press/2009/WWFPresitem12330.html).

Ready to plant: Oil palm seedlings near Gunung Leuser National Park in North Sumatra. *Photo: R. Butler / mongabay.com*

Cameroon needs more than approved forest management plans

A recent study shows problems in implementation

By Greg Clough[1], Paolo Omar Cerutti[2], Robert Nasi[3] and Luca Tacconi[4]

[1]World Bank (formerly Center for International Forestry Research – CIFOR).

gjclough@gmail.com

[2]Center for International Forestry Research (CIFOR), Bogor, Indonesia and Crawford School of Economics and Government, The Australian National University

p.cerutti@cgiar.org

[3]Center for International Forestry Research (CIFOR), Bogor, Indonesia

r.nasi@cgiar.org

[4]Crawford School of Economics and Government, Australian National University

luca.tacconi@anu.edu.au

Sustainable?: logs from a Cameroonian forest concession being transported *Photo: CIFOR*

In many respects, Cameroon has for some time set the benchmark for central African nations when it comes to sustainably managing the forests of the Congo basin, home to the world's second largest area of tropical forest. A Ministry of Environment and Forests (MINEF) was created in 1992 - now known as the Ministry of Forests and Wildlife (MINFOF) - and policy documents and forest laws soon followed. Of particular note was the 1994 forest law 94-01, aimed at ensuring the sustainable management of forests, wildlife, and fisheries.

A key element of the law was its requirement that logging companies granted concessions to harvest government owned forests must prepare detailed forest management plans (FMPs). These FMPs would describe the company's approach to sustaining the forest's social, economic and ecological values. By 2007, some 50 percent of the 101 forest management units (FMU) granted by MINFOF had approved management plans as required by law 94-01, accounting for 3.5 million hectares of forest (MINFOF 2007).

Indeed, in recent years several international organizations have remarked favorably about the efforts made by the Cameroonian government toward improved sustainability

Cameroon's efforts to promote sustainable forest management (SFM) have not gone unnoticed by the broader international community. Indeed, in recent years several international organizations have remarked favorably about the efforts made by the Cameroonian government toward improved sustainability, as reflected in the increased number of approved management plans (e.g. Inter-African Forest Industries Association (IFIA) 2006; International Tropical Timber Organization (ITTO) 2006; Commission des Forêts d'Afrique Centrale (COMIFAC) 2004; Congo Basin Forests Partnership (CBFP) 2006; German Development Cooperation (GTZ) and MINFOF 2006).

Until recently, however, no one had actually compared what was happening on the ground with what was required in the approved plans – plans that had been prepared and approved to ensure companies paid sufficient attention to the social, economic and ecological issues related to the forests under their control. As always, the devil is in the detail, and such is the case with the law requiring companies to prepare FMPs, as recent CIFOR-ANU research reveals. While companies often meet the legal and technical requirements detailed in their FMPs, the forests in question may not be managed in sustainable ways.

Plans vs. implementation

The CIFOR-ANU study acknowledges that while the innovative measures initiated in 1994 were a major advance on the pre-existing situation (when a company could acquire a title to 5000 hectares of forest and harvest it at will), the government should adopt the same innovative and positive attitude towards reviewing the current system.

According to the study, the combination of a legal loophole and poor oversight meant that almost 70 percent of timber production in 2006 was conducted as if no improved management rules were in place. This finding has a number of far-reaching implications. For example, in 2007 the Government of Cameroon entered into a Voluntary Partnership Agreement (VPA) with the European Union aimed at "contributing to the commitments of timber-producing countries to promote sustainable forest management" (European Commission 2007). The VPA requires the implementation of approved FMPs. But if the FMP system in Cameroon is flawed, as the research strongly suggests, then the VPA's requirements could be fulfilled without real progress being made towards sustainable forest management.

Another implication, should the current system continue, is that many currently approved FMPs are approaching the five year mark, when they can be adjusted to suit actual forest conditions. Sadly, the Ministry of Forestry has not yet begun comparing the estimated annual allowable cuts (AACs) specified in the FMPs with actual production data. Such data is essential for detecting inappropriate harvesting and revising FMPs for the next five years. Without it, there is a risk that FMPs that are in fact unsustainable could be simply rubber-stamped for another five years.

Another implication, should the current system continue, is that many currently approved FMPs are approaching the five year mark, when they can be adjusted to suit actual forest conditions

The research findings have been shared with Cameroon's Ministry of Forests, and with agencies such as GTZ, Dutch Cooperation, World Wildlife Fund, World Conservation Union (IUCN), the European Union, and various local non-governmental organizations. As a result, the Government of Cameroon has announced its willingness to adjust the law to reflect some of the paper's key recommendations. It has already formed a working group and asked logging companies to participate in the legal overhaul.

The overhaul needs to happen quickly, as existing FMP regulations give a company too much flexibility in selecting which species it will be legally required to sustainably manage, and which it can harvest under less stringent requirements. Under the current FMP guidelines, a company must nominate 20 or more species for sustainable management from a list of the 60 most harvested species nationally. The nominated species must account for 75 percent of the trees in the company's forest concession.

The CIFOR-ANU report argues that this is a legal loophole and that companies are taking advantage of it. It allows them to include species in their FMPs that they are not interested in harvesting and exclude commercially valuable species from logging quotas. The consequences of the loophole have come to light only recently. Although the FMP requirement dates back to 1994, it took several years to implement a range of other decrees and regulations needed for law 94-01 to become operational. It also took time to promote awareness of the new requirements, and further time to develop them. As a result, most FMPs were approved as recently as 2004-2005. Thus it has been only in the past two or three years that evidence of how the FMPs have been progressing has begun to emerge.

FMP analysis

Nevertheless, enough data now exists to make a preliminary quantitative assessment of the situation. As of 2007, 49 management plans had been approved, from which the researchers selected 38 for analysis. There were several reasons for not analyzing all 49, including that some concessions with approved plans were not operational in the years considered, some plans were yet to be fully implemented, or were simply not available for analysis.

Some of the reviewed plans were accessed through the GTZ library and some were provided by logging companies. The most important set of data used were management inventory results, which provided the population structures (volume and number of trees per diameter class) for all inventoried species and which are used to calculate the AAC of the FMP. Production data came from official figures provided by the forestry ministry's Computerized Forest Information Management System. These data were available for each FMU and species harvested.

The analysis was carried out following a two-step approach. First, the consequences of legal flaws on annual production were assessed by considering key species that were being harvested but were not part of the group of species selected for management. Second, impacts of the inadequate controls carried out by the ministry on approved management plans were examined by considering how management parameters, for example the minimum cutting diameter, are modified to achieve better recovery and sustainability.

The findings of this analysis clearly showed that despite the implementation of approved FMPs, they were not having the results that had been hoped for in requiring companies to develop sustainability plans. The report cites an example from 2006 of a company fulfilling its legal requirements with an FMP that placed 29 species on its managed species list, which represented 76 percent of the concession's inventoried volume. Of the 29 species nominated for special care, only 11 were actually harvested. These 11 species contributed less than 15 percent of the total volume of timber logged on the concession. In other words, 85 percent of the timber harvested consisted of species not included in the company's plan for managing the forest concession sustainably.

According to the report, 66 percent of logging companies in 2006 did not include at least one of their three most harvested species in their FMPs. Considering the concessions are granted for 15 years with a once-only 15 year renewable provision, there is a high risk that concessions will be quickly harvested of their valuable species, making them commercially unattractive to future investors. Even more worrying is that the current system allows the species that are not managed under the FMP to include a number that are classified as endangered on the IUCN red list (IUCN 2007) - such as assamela (*Pericopsis elata*), also listed in CITES Appendix II -or vulnerable, usually because of overexploitation for timber - such as azobé (*Lophira alata*), kossipo (*Entandrophragma candollei*), moabi (*Baillonella toxisperma*) and sapelli (*Entandrophragma cylindricum*).

Disincentives to SFM

One unfortunate consequence of the current arrangement is that it serves as a disincentive to those companies that are trying to operate in a socially and environmentally responsible manner. For example, several companies have already voluntarily sought and obtained Forest Stewardship Council (FSC) certification. This has forced them to improve their

FMPs, something they would not have needed to do if they remained only with the government-managed system. In a sense, they have been penalized for being SFM proactive. The government could significantly enhance its sustainability goals by more visibly supporting these progressive companies. Being seen to support companies such as those voluntarily working with the FSC would send a very clear message to stakeholders with vested forestry interests in both the private and public sectors.

In addition to the loophole described above, the report also found weaknesses in the government's monitoring of FMPs. Under the original law the government was responsible for developing FMPs, but it lacked the necessary financial and human resources. So it delegated the task to logging companies. As a result, FMPs are often prepared with more emphasis on economic than ecological aspects. The fact the companies are preparing the plans almost unilaterally is of particular concern given the report's conclusion that "although forest management is slowly improving in Cameroon, especially thanks to the efforts made by some motivated logging companies, it is still not perceived as a top priority for most of them, and the increasing number of approved management plans does not equate with sustainable forest management".

The report recommends that the Ministry of Forests becomes the leading actor in the improved management of Cameroonian production forests. This will help ensure FMPs comply more fully with the law and that companies voluntarily applying stricter management remain competitive. On the other hand, the report warns that if the ministry remains largely a silent actor, Cameroon will be unable to implement sustainable forestry management on a wide scale. Fortunately, government has taken notice of the problems raised in the report and is undertaking steps to change the current legal framework.

Benefits of change

The CIFOR-ANU analysis says making the right changes to current forest management systems in Cameroon could generate the following benefits:

- Thirty-year concessions will remain attractive to future investors by ensuring that they retain sufficient volumes of commercially attractive species;
- Concessions will continue to remain a long-term source of employment and government revenue;
- Species identified by IUCN and/or CITES as endangered or vulnerable will have a greater chance of being managed sustainably; and
- Local and international agreements and certification processes will be stronger if uniform benchmarks are applied.

While a number of changes are needed to attain these benefits, ensuring that companies include their most commonly harvested species in lists of managed species contained in FMPs would be a good start. From there it will be possible to progressively move on to other changes that will eventually benefit Cameroon's economy, environment and people.

References

Congo Basin Forests Partnership (CBFP). 2006. *Les forêts du Bassin du Congo—État des forêts 2006.* CBFP, Kinshasa, Democratic Republic of Congo.

Commission des Forêts d'Afrique Centrale (COMIFAC). 2004. *Plan de convergence pour la conservation et la gestion durable des écosystèmes forestiers d'Afrique Centrale.* COMIFAC, Yaounde, Cameroon.

European Commission. 2007. *Voluntary partnership agreements.* FLEGT Briefing Notes Number 06 - Forest Law Enforcement, Governance and Trade. European Commission, Brussels, Belgium.

German Development Cooperation (GTZ) and Ministére des Forêts et de la Faune (MINFOF). 2006. *Programme sectoriel Forêts et Environnement (PSFE) – Suivi d'impact de la gestion forestière au Cameroun - situation de référence des UTO du Sud- ouest et de l'Est.* GTZ - Natural Resources Sustainable Management Program and MINFOF, Yaoundé, Cameroon.

IUCN. *2007. 2007 IUCN red list of threatened species.* [online] URL: http://www.iucnredlist.org/

Inter-African Forest Industries Association (IFIA). 2006. *IFIA newsletter: is forest management improving in the tropics?* [online] URL: http://www.ifiasite.com/.

International Tropical Timber Organisation (ITTO). 2006. *Status of tropical forest management 2005.* ITTO, Yokohama, Japan.

Ministry of Forests and Fauna (MINFOF). 2007. *Bref aperçu du secteur forestier* MINFOF, Yaoundé, Cameroon.

The research paper that this article is based on (Sustainable Forest Management in Cameroon Needs More than Approved Forest Management Plans, *by Cerutti, Nasi and Tacconi) is available at http://www.ecologyandsociety.org/vol13/iss2/art36/.*

Community friendly: Improved forest management will benefit Cameroon's people *Photo: CIFOR*

Perceptions rule

Opinions on tropical timber in the UK impact demand

By Mike Adams[1] and Alhassan Attah[2]

ITTO consultants

[1] mjadams_itto@hotmail.com

[2] anattah@yahoo.com

Opinion formers: Protest against alleged illegal timber imports by the UK *Photo: Touhig/Greenpeace*

The main driver of timber consumption in the UK is activity in the construction and housing sector, but consumer perceptions of tropical timber are also important factors. Perceptions or opinions (often formed from selective and/or subjective information) are central to consumer views. Perceptions of tropical forestry and tropical timbers are having a direct bearing on the UK timber market; they are influencing consumer purchases; they are impacting business-to-business and business-to-government dealings; and they are influencing government policy. As such, perceptions are having a direct impact on the market status of tropical timber products.

Perceptions of tropical forestry and tropical timbers are having a direct bearing on the UK timber market

How these perceptions are formed and how they influence market opportunities for tropical wood products is a continually evolving process. Awareness of how perceptions are shaped and the circumstances under which they are formed can help to identify approaches to strengthen the position of tropical timber products in the market.

The way perceptions of tropical timber are formed and the information they are based on varies considerably depending on the stakeholder group involved. For most private consumers purchasing finished products such as furniture or timber do-it-yourself (DIY) products, the media are significant in delivering the information upon which perceptions are formed. Only a minority of consumers will actively seek out relevant information to be better informed.

The core stakeholder group in the trade of tropical timber products is the industry itself. They are generally better informed and act together to sustain their businesses, with their respective associations playing a major role in delivering relevant information. They are strongly influenced by environmental activists, consumer attitudes and also by UK and EU policy, regulations and plans.

The final stakeholder group in UK tropical timber demand consists of central government and European Commission policy makers. In this group information flow tends to be rapid (keeping pace with developing issues) and the quality of information is highest, usually better founded on science and expert opinion. However, in this group as in others, the influence of consumer and environmental activist groups is significant.

The private consumer and tropical timber

Individual consumers in the UK account for around 60% of purchases of finished wood products. Purchases of joinery by individuals from DIY outlets are high and growing. Purchases of furniture and other finished wood products are mainly from retail outlets; less than 5% of sales are via the internet or other 'remote' sources (e.g. mail order). Because of this, the retailing sector is a vital link in the flow of wood products to the final consumer and one which is generally overlooked when considering opportunities to expand market share and to address consumer concerns on tropical timber.

UK consumers are constantly bombarded with media commentary on environmental and ethical purchasing issues and in recent years the volume of such information has intensified. Tropical forestry and timber issues are just one of a plethora of environmental topics covered (and often sensationalized) in the media. For tropical forestry and tropical wood products, media coverage has focused on sustainability, biodiversity, illegal logging/illegal timber trade and 'conflict' timber, amongst other issues.

Most commentary on environmental issues is that provided by television, newspapers and magazines and this information,

whether good or bad, is at the core of the perceptions on environmental issues by the purchasing public. The quality of the debate, especially in the daily press, is very varied with the tabloid press dealing in sensational headlines and generally poorly researched articles on timber issues. The more serious newspapers present more balanced debate but reach a much smaller readership than the tabloids.

The media help to create and then reinforce perceptions which, in the UK (and many other western countries), have given rise to ethical or environmental consumers, defined as those that are aware of the fragility of the environment and of the interdependence between the environment and mankind and make purchasing decisions accordingly.

The ethical consumer

For the bulk of household purchases in the UK, the rationale behind the choices consumers make at the point of sale is extremely complicated. Decisions are derived from a mixed basket of ethical and environmental 'truths', from sources which are not always reliable and for which the foundations are often weak. This poses a considerable challenge in trying to identify how consumer purchase decisions are made and, in the case of tropical wood products, what can be done to sway consumers.

The ethical market has generated a host of green purchasing guides. The UK based 'Green Consumer Guide' has a very clear stance on wooden furniture that recommends consumers "to ensure that furniture materials originate from sustainable woodlands, or other recyclable sources. Always avoid hardwoods and tropical woods such as mahogany." This is an example of the distorted information that confuses consumers and that can create doubt and undermine trust in information on the topic of tropical timber.

The Ethical Consumer Research Association, a UK private sector body says "how product-related environmental information works in the market place is dependent upon many factors related to the purchasing moment" and that "studies of the use of product-related environmental information suggests that the focus should be on the time of purchasing decision and take into account the dynamic context of the diverse purchasing situations." This implies that environmental information at the retail point of sale is likely to have greater impact on a decision to purchase than information received and absorbed at some other time as this can get blended and confused with other issues as perceptions are formed. Information should be prominently displayed and the retailer's sales staff must be familiar with the credentials of the product.

It could be argued that environmental labeling is the solution to addressing the point of sale information delivery to a potential buyer, but few consumers recall the purpose or understand individual labels since so many are now in use on so many products in the UK.

Perceive this: Tropical share of value (US$) of total UK primary timber product imports

The corporate consumer and tropical timber

There is a high degree of environmental awareness and concern in the UK and the wider EU and this is both a challenge and an opportunity for the timber industry. UK legislation requires public companies to report on environmental and social matters and most in the timber industry have embraced transparency in corporate social responsibility (CSR). To address the concerns of both private and public sector consumers most UK timber importers and manufacturers using tropical timber have adopted responsible timber purchasing schemes which address at least some aspects of CSR. These are generally association-led and industry self-regulated.

Environmental information at the retail point-of-sale is likely to have greater impact on a decision to purchase than information received at some other time

The UK Timber Trade Federation (TTF) and the British Furniture Manufacturers Association, for example, have arranged responsible purchasing schemes through which exporters and importers cooperate, bringing transparency to the trade to allay consumer concerns about tropical timber products. While these schemes are successful they only address one particular issue: that of sourcing from responsible suppliers and well managed forests. They do not meet the current demands of government and the public for companies to be generally environmentally and socially more responsible. Because of this, UK companies are now embracing the overall CSR concept, under which issues other than profit and shareholder returns are considered in management decisions.

There are many definitions of CSR. One frequently quoted from the UK government defines CSR as *"how business takes account of its economic, social and environmental impacts in the way it operates – maximizing the benefits and*

minimizing the downsides to meet sustainable development goals." Consumer concern regarding tropical forestry and trade in tropical timber products is an integral part of CSR for timber importers and manufacturers using tropical timber and consequently affects their dealings with tropical timber exporters.

The pace at which CSR has been adopted by the UK timber trade has been a surprise to many. Initially there was considerable resistance but now that information on the benefits derived by individual companies through adopting proactive CSR policies has begun to flow, more are moving to adopt it. The UK Timber Trade Federation (TTF) website (www.ttf.co.uk/industry/csr/) provides an excellent overview of CSR in the UK and the EU. It identifies accountability throughout the value chain as an important element of CSR. The TTF says that "over the past several years, the CSR agenda has been characterized in large part by the expansion of boundaries of corporate accountability. Stakeholders increasingly hold companies accountable for the practices of their business partners throughout the entire value chain with special focus on supplier environmental, labor, and human rights practices. Additionally, company purchasing power is being viewed as a unique resource that contributes economic development investment capital, as well as facilitating basic trade of products and services."

Tropical timber exporters cannot avoid the consequences of the evolution of CSR in the UK and the EU and those who are first to engage with these importers on their terms will secure a competitive advantage. Eventually any exporter serious about securing its UK market will need to be fully aware of and responsive to importers' CSR policies. UK importers claiming to be environmentally and socially responsible put their reputation at stake every time goods are imported for sale and thus expect suppliers to be mindful of their impact on the environment. Tropical timber suppliers to the UK (and the EU) need to appreciate and accommodate (as far as possible) the requirements of customers and be prepared to demonstrate their own commitment to those ideals.

As the debate on the environment develops it is important for governments of tropical timber exporting countries to engage the UK government whenever possible to inform on advances in social issues such as working conditions, poverty-alleviation and programs for disadvantaged communities, as these issues are high on the agenda in the UK and are (at the least) implicit in most CSR policies.

UK government procurement

UK policy on timber procurement for central government projects requires that timber be purchased from independently verifiable legal and sustainable sources or be of FLEGT licensed timber only (under the EU Forest Law Enforcement, Governance and Trade initiative). This requires suppliers and contractors to provide documentary evidence to demonstrate that the timber offered, as a minimum, originates from a legal source. The evidence must be supported by full chain of custody evidence from the forest to the end-user. The evidence that will be accepted falls into two categories as shown in the box.

Timber procurement evidence

Category A evidence – an independent certificate of timber and timber products by any forest certification scheme that meets the policy requirements as specified by the government's Central Point of Expertise on Timber (CPET). These currently include the Forest Stwardship Council (FSC), Program for Endorsement of Forest Certification (PEFC), Canadian Standards Association (CSA) and Sustainable Forestry Initiative (SFI) schemes. The Malaysian Timbere Certification Scheme (MTCS) will be considered under this category if it introduces proposed revisions.

Category B evidence –alternate documentary evidence that provides assurance the source is legal and sustainable.

The UK government, under current legislation, cannot insist that local authorities (LAs) follow central government procurement policies. LAs are merely recommended to devise procurement policies in the spirit of the government's policy. There are 468 LAs in the UK and they spend over US$400 billion each year undertaking capital projects which involve large amounts of wood products and as such their procurement policies are also affecting timber demand.

There is a wide variation in the adoption of sustainable procurement practices by LAs. Some have policies which preclude the use tropical timber, some demand FSC certified products only, while others put higher priority on cost and use certified timber only if it is price competitive. These variable responses are a minefield for the timber industry in its dealings with LAs.

There is some prospect of a more uniform implementation of central government sustainability and procurement policy with the adoption by LAs of a National Improvement and Efficiency Strategy. This sets out how central and local government will provide the financial and technical support that will be needed to deliver coordinated Local Area Agreements, a framework aligning central government priorities and those of the LAs.

Prices, the bottom line

Conventional wisdom is that there is no premium for wood from sustainable and legal sources. This is indeed true when it comes to prices negotiated with exporters, but an over-simplification in the case of trade within the UK market. Truly ethical consumers, that small group of seriously environmentally conscious (and usually wealthy) people, will accept higher prices but for most consumers this is not the case. For the bulk of the buying public in the UK, price is towards the top of the list of factors considered when shopping. However, if faced with a choice of equally suitable products at a similar price, only one of which has good environmental credentials, then, because of the perceptions formed either before beginning shopping or (most often) at the point of sale, the product with better environmental credentials is likely to be chosen.

In business-to-business dealings, conventional wisdom again applies but not in all cases. Tropical timber traders in the UK confirm that a small price premium for certified wood (US$1-2 per cubic meter for sawnwood) is occasionally accepted by trade customers. For central government (and soon all local authority) projects requiring timber, only legally and sustainably produced wood will be accepted. Assuming at least a small premium will be paid, this will provide an opportunity for producers and manufacturers to recover some costs of compliance with new procurement policies.

The full report Review of the United Kingdom Timber Market, *providing an assessment of production, trade and consumption of primary and secondary wood products, analysis of the impact of the recent credit crisis and recession on wood product consumption in the UK and suggestions on market trends and opportunities for tropical timber exporters, is available from the ITTO Secretariat (eimi@itto.int).*

Fellowship report

An ITTO fellowship grant helps show potential of mixed local tree species for revegetating tin mine tailings in Indonesia

by Eddy Nurtjahya

ITTO Fellow, Doctoral Program in Biology, Institut Pertanian Bogor, Indonesia

eddy_nurtjahya@yahoo.com

Reliance on natural succession to restore sand tin tailings without any human aid can be very slow (Mitchell 1959; Nurtjahya *et al.* 2007a). Natural regeneration after up to 11 years on tin-mined land in Indonesia was dominated by shrub species of the Cyperaceae and Poaceae families while shrub species of the Myrtaceae family were still common on 38-year old tin-mined lands. The cation exchange capacity and concentrations of soil nutrients (Ca, Mg, K, and Na) of tin-mined lands were lower than undisturbed land, and the carbon to nitrogen ratio of tin-mined lands was higher than undisturbed lands (Nurtjahya *et al.* 2007a), inhibiting natural regeneration of tree species.

A number of exotic tree species are widely used in rehabilitation programs but it is unwise to continue to rely on such a limited mix for all future rehabilitation efforts (Lamb and Tomlinson 1994) as they may inhibit natural recolonization. Besides standard soil amendment practices to promote natural regeneration (Nurtjahya 2001), various organic/non-organic materials and microorganisms have been examined (Puryanto 1983; Awang 1988; Sastrodihardjo 1990; Madjid *et al.* 1994; Naning *et al.* 1999; Nurtjahya 2001; Setiadi 2002; CBR 2002), although systematic scientific studies are considered inadequate (Ang *et al.* 2003). Selection of native tree species has been guided by information from natural succession observation (Nurtjahya *et al.* 2007a) in ecosystems which are similar to tin-mined lands. Improving microclimates, by using methods such as alternating rip cultivation with high planting density and high species richness, is one technique that has had some success (Rachmawati *et al.* 1996; Parrotta and Knowles 2001).

A number of exotic tree species are widely used in rehabilitation programs but it is unwise to continue to rely on such a limited mix for all future rehabilitation efforts

Various indicators have been used to evaluate the success of revegetation (Tongway *et al.* 2001, pers. comm.; Setiadi 2002, pers. comm.; Ludwidg *et al.* 2003), including the measurement of fauna (Andersen and Sparling 1997; Passel 2000; Yin *et al.* 2000; Nurtjahya *et al.* 2007b). Survival rate, however, is viewed as the most critical indicator (Lamb and Tomlinson 1994). The aim of this study was to study the growth of ten selected local tree species in amended sand tin tailings, and to identify cultivation practices which support the best growth of local tree species and encourage natural colonization.

Study site and methodology

The two hectare tin-mined study site (barren prior to this study) is located at Riding Panjang village, in the Province of Bangka Belitung (01° 59' 53.46"S and 106° 06' 45.32"E), at an altitude of 30 m.a.s.l., with annual rainfall of 2400 mm, and temperatures ranging from 23.8 to 31.5°C. The experiment consisted of a factorial randomized complete block design with two factors and three replicates. 3345 seedlings were planted at three densities (10 000 seedlings ha^{-1}, 2500 seedlings ha^{-1}, and 625 seedlings ha^{-1}) in 45 plots of 12 x 12 m. Each planting density treatment plot had ten species. The five soil treatments were: (1) control, (2) 500 grams powdered slime tailing under *Lepironia articulata*, (3) equal composition (1:1) 30 kg ha^{-1} of legume cover crops (LCC) *Calopogonium mucunoides* and *Centrosema pubescens*, (4) LCC and 2.5% humic acid, and (5) LCC and top soil. The ten species were: *Calophyllum inophyllum* (Clusiaceae), *Hibiscus tiliaceus* (Malvaceae), *Macaranga* spp. (Euphorbiaceae), *Mallotus paniculatus* (Euphorbiaceae), *Schima wallichii* (Theaceae), *Vitex pinnata* (Verbenaceae), *Ficus superba* (Moraceae), *Syzygium grande* (Myrtaceae), *Aporosa* spp. (Euphorbiaceae), and *Syzygium polyanthum* (Myrtaceae). Pieces of coconut shell were placed around the root collar of each plant at planting to improve the microclimate. The plants were watered from a nearby pond.

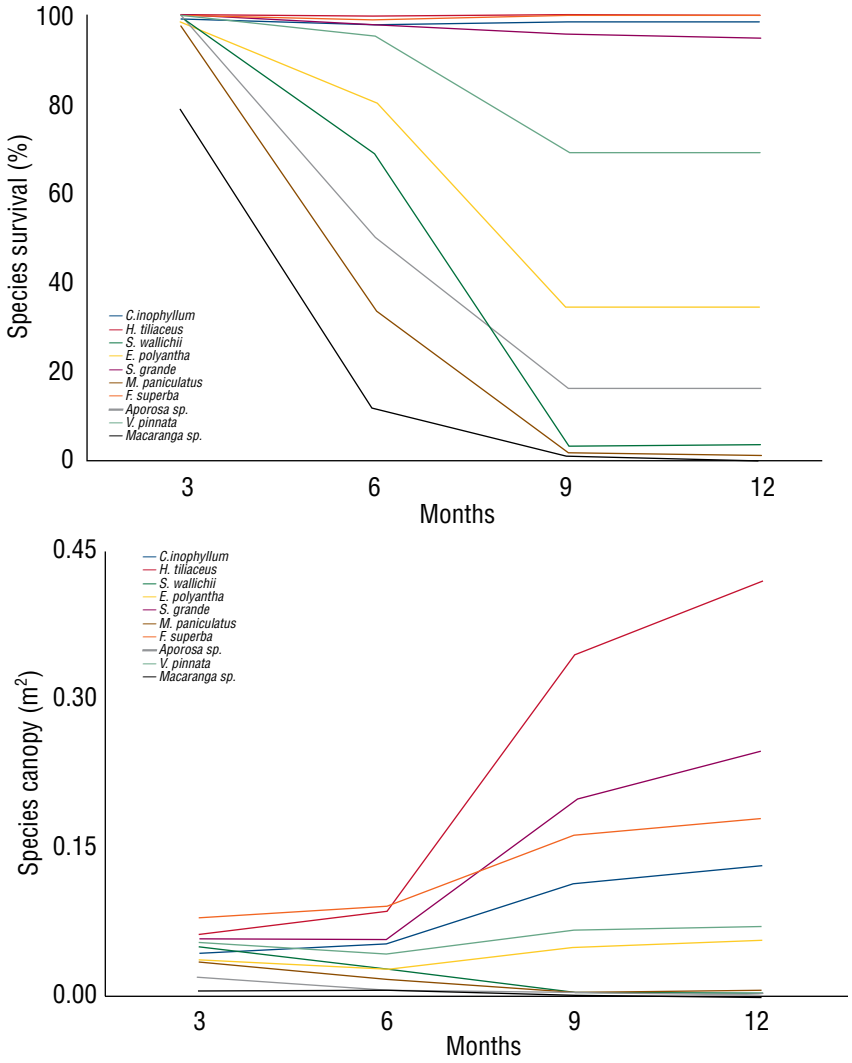
Soil temperature and humidity, inside and outside the coconut shells, was measured at nine months (wet season) and twelve months after planting (dry season). Survival and canopy cover diameter of all individuals in each plot were measured at three, six, nine, and twelve months after planting. Fallen litter in each plot was collected and weighed twelve months after planting. Population density of ants and *Collembola* spp. was determined using pitfall traps (Suhardjono 2004) at three, six, nine, and twelve months after planting. The number of plant species which invaded each plot was determined at the end of the experiment. All data was tested for significance ($p<0.05$) using standard analysis of variance techniques.

Results

The coconut shells significantly reduced soil temperatures near the seedlings in the late dry season (by 4.3°C) and in the wet season (by 2.1°C) in all plots. They significantly increased soil humidity inside the coconut shell in the dry season (by 7.6% – 12.2%) and in the wet season (by 0.8% – 7.8%) in all plots except the controls and those treated with slime tailing powder (Nurtjahya *et al.* 2007c).

There was a significant interaction between planting density and soil treatment on survival rate, plant cover, and litter production. The combination treatment of highest planting

Tailing off: Tin mine tailings are inhospitable to tree regeneration and growth *Photo: E. Nurtjahya*



Hibiscus on top: Average survival and canopy cover at 3–12 months after planting (Nurtjahya *et al.* 2008)

density and LCC plus top soil gave the highest survival rate at 78.7%. The highest planting density and LCC resulted in the highest average canopy cover (31.4 m²). The highest density and LCC treatment also produced the highest litter production (459.7 kg $ha^{-1}year^{-1}$). LCC supplied a major percentage of litter production with about 90% from *C. mucunoides*.

Survival rates above 90% at the end of the experiment were recorded for *H. tiliaceus* (100%), *F. superba* (99.9%), *C. inophyllum* (99.3%), and *S. grande* (90.2%). The four species with the highest average canopy cover at the end of the experiment were *H. tiliaceus* (0.42 m²), *S. grande* (0.25 m²), *F. superba* (0.18 m²), and *C. inophyllum* (0.13 m²) (see charts). The species with the highest survival rates and canopy cover were the same at three months and at the end of the 12-month study (Nurtjahya *et al.* 2008). The higher survival rates and canopy cover for these four species are explained by their morphological adaptability to environmental conditions, including thicker cuticle and/or suberin. Some adaptations of leaves and roots of these species to environmental stress have been reported (Nurtjahya and Juairiah 2006).

Although the interaction between planting density and soil treatments on ants and collembolan populations was not statistically significant (Nurtjahya *et al.* 2007b), the tendency towards higher ant and collembolan population at higher plant densities may be due to improved microclimate, especially humidity. The collembolan population on the site, which increased from six to nine months and from nine to 12 months (when it averaged 375 individuals/m²), appeared to reflect increasing soil fertility. While ant populations were not a good indicator of restoration on this site (contrary to the findings of Andersen and Sparling 1997), *Collembola* appears to be a good potential bio-indicator for revegetation of tin-mined land (Nurtjahya *et al.* 2007b; Nurtjahya *et al.* 2007d).

There were 41 invading species recorded on plots with a domination of species from Cyperaceae, Melastomataceae, Leguminosae, and Poaceae families. As plots treated with top soil plus legume cover crops showed the highest number of invading species, top soil appeared to be the primary seed source (Zhang *et al.* 2001). Comparing parameters of soil properties, the number of tree species, total number of plant

Greened: Study site shortly after planting (left) and at fourteen months after planting (right) *Photo: E. Nurtjahya*

species and plant cover from this experiment to those of natural regeneration on nearby sites shows that regeneration of tin mine tailings can be significantly accelerated by using appropriate native tree species. A tradeoff needs to be made between planting density and cost, however, with higher densities incurring higher costs (revegetation costs at 625 seedlings ha^{-1}, 2500 seedlings ha^{-1} and 10 000 seedlings ha^{-1} are US$1700, 2600, and 5300 ha^{-1} respectively).

Conclusion

The highest planting density (10 000 seedlings ha^{-1}) plus treatment with LCC *Calopogonium mucunoides* at 30 kg ha^{-1} gave the highest survival rate (73-79%), highest average canopy cover and highest litter production (460 kg ha^{-1} $year^{-1}$). *H. tiliaceus*, *F. superba*, *C. inophyllum*, and *S. grande* are the most promising of the ten native tree species for revegetating tin-mined lands. Treating plots with legume cover crops and/or top soil showed highly significant effects on recolonization. This study shows that planting appropriate native species and treating with topsoil or legume cover can accelerate succession significantly compared to natural regeneration. Although a planting density of 10 000 seedlings ha^{-1} showed the best performance, lower densities would also show marked improvements over natural regeneration at lower costs.

References

Andersen, A.N. and Sparling, G.P. 1997. *Ants as indicators of restoration success: relationship with soil microbial biomass in the Australian seasonal tropics*. Restoration Ecology 5:109–114.

Ang L.H., Ho W.M. and Najib L.A. 2003. *Soil Amendment of Ex-Mining Land for Growing Multipurpose Tree Species*. In: *Proceedings of the AKECOP International Workshop, August 6-8th 2003, Thailand*.

Awang, K. 1988. *Tin tailings and their possible reclamation in Malaysia*. In: Adisoemanto S (ed.) *Regional Workshop on Ecodevelopment Process for Degraded Land Resources in Southeast Asia, Bogor 23-25 August 1988*.

[CBR] Centre for Biotechnology Research. 2002. *Effect of bio-organic on soil and plant productivity improvement of post tin mine site at PT Koba Tin project area, Bangka*. Bogor Agricultural University, Bogor.

Lamb, D. and Tomlinson, M. 1994. *Forest rehabilitation in the Asia-Pacific region: past lessons and present uncertainties*. Journal of Tropical Forest Science 7:157–170.

Ludwig, J.A., Hindley, N. and Barnett, G. 2003. *Indicators for monitoring mine site rehabilitation: trends on waste-rock dumps, Northern Australia*. Ecology Indicators 3:143–153.

Madjid, N.M., Hashim, A. and Abdol, I. 1994. *Rehabilitation of ex-tin mining land by agroforestry practice*. Journal of Tropical Forest Science 7:113–127.

Mitchell, B.A. 1959. *The ecology of tin mine spoil heaps. Part I sand and gravel tailings*. Malayan Forestry 22:111–132.

Naning, M.I., Diha, M.A. and Gofar, N. 1999. *Perbaikan sifat kimia bahan tailing asal lahan pasca penambangan timah dan pertumbuhan tanaman jagung dengan pemberian bahan organik dan zeolit*. In: *Prosiding Seminar Hasil Penelitian Universitas Sriwijaya, Maret 1999*.

Nurtjahya, E. 2001. *Revegetation on tin post mining area in Bangka Island (bibliographical review)*. Indonesian Mining Journal 7(3):32–37.

Comparing parameters of soil properties, the number of tree species, total number of plant species and plant cover from this experiment to those of natural regeneration on nearby sites shows that regeneration of tin mine tailings can be significantly accelerated by using appropriate native tree species

Nurtjahya, E. and Juairiah, L. 2006. *Struktur anatomi dan karakter fisiologi tanaman pionir di lahan pasca penambangan timah di Riding Panjang, Bangka*. Universitas Bangka Belitung, Sungailiat, 31 p.

Nurtjahya, E., Setiadi, D., Guhardja, E., Muhadiono and Setiadi, Y. 2008. *Establishment of four local tree species for potential revegetating of tin-mined land in Bangka Island, Indonesia*. In: Fourie A., Tibbett M., Weiersbye I., Dye P. (eds.) *Proceedings of The Third International Seminar on Mine Closure, 14 – 17 October, Johannesburg, South Africa*. Johannesburg. pp. 751–758.

Nurtjahya, E., Setiadi, D., Guhardja, E., Muhadiono and Setiadi, Y. 2007a. *Succession on tin-mined land in Bangka Island*. In: *The Seventh International Flora Malesiana Symposium, 17-22 June 2007, Leiden, Netherlands*. 14 p.

Nurtjahya, E., Setiadi, D., Guhardja, E., Muhadiono and Setiadi, Y. 2007b. *Potensi Collembola sebagai indikator revegetasi tailing timah di pulau Bangka*. Jurnal Ilmu-ilmu Pertanian Indonesia 9(2):113–123.

Nurtjahya, E., Setiadi, D., Guhardja, E., Muhadiono and Setiadi, Y. 2007c. *Sabut kelapa sebagai mulsa pada revegetasi tailing timah di pulau Bangka*. Eugenia 13(4):366–382.

Nurtjahya E, Setiadi D, Guhardja E, Muhadiono and Setiadi Y. 2007d.. *Populasi Collembola di Lahan Revegetasi Tailing Timah di Pulau Bangka*. Biodiversitas 8(4): 309–313.

Parrotta, J.A. and Knowles, O.H. 2001. *Restoring tropical forests on lands mined for bauxite: examples from the Brazilian Amazon*. Ecology Engeneering 17:219–239.

Passell, H.D. 2000. *Recovery of bird species in minimally restored Indonesian tin strip mines*. Restoration Ecology 8(2):112–118.

Puryanto, E. 1983. *Rehabilitasi tanah pasir kuarsa eks tambang timah pulau Bangka dengan bahan-bahan alamiah untuk budidaya tanaman jambu monyet* (Anacardium occidentale L.). [skripsi] Institut Pertanian Bogor, Bogor.

Rachmawati, I., Karyawan, K.A. and Sinaga, M. 1996. *Pengaruh model tanam terhadap pertumbuhan beberapa jenis pohon serba guna*. Buletin Penelitian Kehutanan BPK Kupang 1:102–108.

Sastrodihardjo, S. 1990. *Pengaruh pemberian bahan organik dan polimer alam serta sintetik terhadap beberapa sifat fisik dan kimia tanah tailing tambang 25 wilasi Pangkalpinang Unit Penambangan Timah Bangka (UPTB)*. [skripsi] Institut Pertanian Bogor, Fakultas Pertanian, Bogor.

Setiadi Y. 2002. *Mycorrhizal Inoculum Production Technique for Land Rehabilitation*. Jurnal Manajemen Hutan Tropika 8(1):51–64.

Suhardjono Y.R. 2004. *Buku Pegangan Belajar Collembola (Ekor Pegas)*. Bogor: Museum Zoologicum Bogoriense.

Yin, B., Crowley, D., Sparovek, G., De Melo, W.J. and Borneman, J. 2000. *Bacterial functional redundancy along a soil reclamation gradient*. Applied and Environmental Microbiology 66:4361–4365.

Zhang Z.Q., Shu W.S., Lan C.Y. and Wong M.H. 2001. *Soil seed bank as an input of seed source in revegetation of lead/zinc mine tailings*. Restoration Ecology 9:378–385.

The full fellowship report is available from fellowship@itto.int.

Market Trends

Downturn continues to bite, intra-regional trade helping some exporters

By Lauren Flejzor

MIS Coordinator

mis@itto.int

The global economic downturn affected market conditions for tropical timber products in the first half of 2009 more strongly than in late 2008. Trends showed no overall upturn in demand or prices for the major tropical timber importing markets, particularly those of the US, Europe and China. This was reflected in export statistics for the first half of 2009. Nevertheless, a few producer countries were able to at least partially offset export declines due to increased levels of intra-regional trade. Leading into the last quarter of 2009, there were signs of a minor turnaround in prices and demand for some importing markets.

Low demand, weak markets

In West and Central Africa, trading was slow, particularly in the July to August period, when European holidays take place. The value of Ghana's exports in the first half of 2009 fell by 35%, due to a 30% reduction in the volume of timber exported. However, Ghana's trade with African markets grew in both export volume and value. Total revenue from these markets increased to EUR 27.49 million in 2009, up from EUR 22 million in 2008. Some upturn in exports is expected for Ghana, as its Timber Industry Development Division of the Forestry Commission reported a 21% increase in the volume of contracts for wood products during the second quarter. These figures were boosted by overland contracts to neighboring countries, a sign that intra-regional trade is an increasingly important factor in Ghana's exports.

Intra-regional trade had less of a positive effect in Latin America. Brazil and Peru's exports had been dropping in late 2008 and the trend was exacerbated in the first half of 2009 due to the weakening of the US dollar, the economic slowdown and reduced demand for wood products by the US, the main import market for both countries. In the first half of 2009, Peru's overall exports dipped 45%, with Mexico's scaling back of Peru's imports by 71% combining with low US demand. In July 2009, Brazil's timber exports were down nearly 41% by value from a year earlier, with tropical plywood down nearly 61% and tropical sawnwood down 45%.

No logs here: Japan's falling plywood production impacts tropical log imports *Photo: A. Sarre*

Crash: Brazil's exports by value, July 2008 and 2009 (US$ million)

Product	July 2008	July 2009	% change
Solid wood*	307.2	182.3	(40.7)
Tropical plywood	12.5	4.9	(60.8)
Pine sawnwood	14.1	13.7	(2.8)
Tropical sawnwood	34.4	18.9	(45.1)
Pine plywood	43.8	21.5	(50.9)
Wood furniture	73.5	49.3	(32.9)

*Figures for solid wood exclude pulp and paper exports

Argentina, once a significant importer of Brazil's furniture products, placed restrictions on the amount of Brazilian furniture imports it would accept, a decision Brazil hoped would be reversed in 2010. Without positive trends in intra-regional trade and continued weak outlook for the US, Brazil's exporters of secondary processed products were exploring new markets (including domestic) to counter dropping export trends.

The Caribbean regional market has remained an important source of revenue for Guyana. Through the first half of 2009, the Caribbean remained the principal destination for Guyana's exports for value-added products such as outdoor and garden furniture as well as non-timber forest products. Popular export species such as greenheart and purpleheart also showed strong export trends to Indian markets. Thus, Guyana was less affected by the downturn in demand from traditional markets such as the US, Europe and China.

China no exception

China was not immune to the slow trends in trading conditions, with imports down sharply during the first half of 2009 when compared to the same period in 2008. Data from Chinese Customs revealed the total value of forest products imported by China during the first half of 2009 (worth US$26 billion) dropped by 16% from the same period in 2008.

Nevertheless, there were some positive signs in parts of the Chinese market. China's furniture exports were down overall by 3.9% in volume and 3.7% in value during the first half of 2009. However, furniture sales through Guangzhou Province jumped in the same period as a result of more active exporting to Southeast Asian nations. ASEAN countries have become one of the largest markets for Guangdong furniture, with Singapore absorbing US$150 million worth of exports and Malaysia receiving nearly USD200 million worth in 2008.

Europe weak

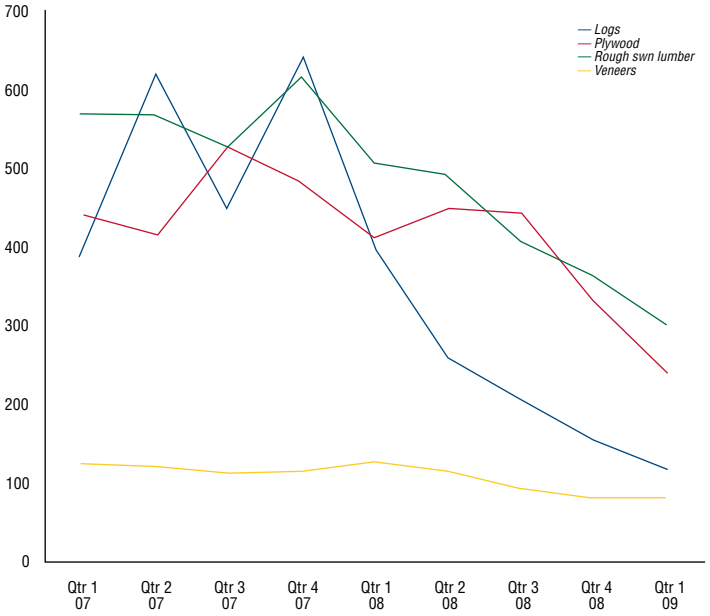
Demand from European countries was also considerably lower in the first half of 2009 than during the same period of 2008. In the first quarter of 2009, European import levels of hardwoods had already shown substantial drops in logs, plywood, rough sawn lumber and veneer.

European buyers were not active in forward buying going into the last quarter of 2009 and little evidence was seen that orders would improve. European buyers were placing few orders even for popular species such as light red and dark red meranti, for which reduced production levels in Southeast Asia had until recently caused problems for European shippers.

There was little hope that production levels of tropical timber products would return to normal or expand in late 2009/early 2010. Japanese South Sea plywood mills have reduced their production levels by about 20-30% and it was doubtful production would return to normal even with slight increases in demand. The scaling back of production and layoffs in West Africa also continued through the first half of the year, a trend that was not expected to reverse itself given the low demand from the European market. This trend was also observed in Malaysia and Indonesia, which had faced massive layoffs in the timber sector in late 2008 and early 2009 (see *TFU* 18/4). Nevertheless, there were some reports of short supplies of plywood in Japan, which experts hoped was a sign of a turnaround in the market which would eventually boost imports and/or domestic production levels.

Editor's note: Lauren Flejzor has left ITTO after a successful tenure as MIS Coordinator. We wish her well in her new position with the FAO Forestry Department. ITTO's bi-weekly Market Information Service newsletter continues to be produced under acting Coordinator Mike Adams (mis@itto.int).

Spot the trend: EU 25 quarterly imports of hardwoods from developing countries by main product group (1000 m^3)



Keeping it legal (continued from page 8)

The main challenge faced by this project was the difficulty in securing high quality satellite images for Guyana. For several months, poor quality images were the only ones available from both high and medium resolution providers. The solution to this is to plan for high resolution images to be sourced over a longer time frame. However, this has implications for both financial and time inputs. Remotely sensed optical images at medium resolution used in this project (Landsat) only allowed for clearings of approximately 1 hectare and greater to be monitored. This is characteristic of almost all medium resolution images. Only the use of finer resolution (and thus more expensive) images can detect the smaller clearings which are often the initial indicator of illegal logging.

What next?

The establishment of the Legality Monitoring and Extension unit within the GFC provides the mechanism to allow this initiative to be sustained into the future thereby enabling the outputs of this project to continue to improve the prevention and detection of illegal activities in logging, transporting and shipment. The work that has been done under this project in forest assessment using remote sensing has already fed into Guyana's submission to the World Bank's Forest Carbon Partnership Facility where an assessment of drivers of forest area change was required.

The availability of satellite images to continually conduct national level assessment of illegal logging incidences will also determine the success of future efforts. The tropics are prone to heavy cloud cover and this can often be prohibitive to conducting remote sensing imagery analyses using optical images. New developments in satellite and remote sensing technology may overcome this problem (see, e.g., *TFU* 18-1 for a description of cloud penetrating radar satellites being pioneered by Japan), but cost of images will remain a prime consideration.

The situation that is prevailing after the project completion is generally an environment where illegal logging can be detected and prevented through a more integrated, national level system. The project has allowed for a variety of technologies to be integrated and has increased capacity of the GFC to conduct such work. Local communities, exporters, other forest sector stakeholders and the nation as a whole will benefit from the resulting higher level of legality in the sector.

The full completion report of this project is available from eimi@itto.int.

Tropical and topical

DNA tracking to root out illegal timber

Double Helix Tracking is compiling the world's first bio-geographic tree database with support from the Singapore Government. Once enough genetic data on various timber species and provenances is collected, this technology could make it possible to extract DNA from products from logs to wooden furniture and identify its geographic origin, vastly improving the timber industry's sourcing practices. The technology could significantly aid in enforcing regulations that require identifying the source of timber such as CITES and the US Lacey Act Amendments which were introduced last year. The new US legislation (which began being phased in during 2009) makes it illegal to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce, any plant or products made from plants - with some exceptions - taken or traded in violation of domestic or international laws. It requires an import declaration that includes the scientific names of the plants, value, quantity and country of origin. The Act currently covers primary wood products up to and including plywood but is eventually intended to be applied to all wooden products, providing a market for DNA tracking tools like that under development by Double Helix.

Corporations prod cattle farms on deforestation

The UK's Guardian newspaper recently reported that major footwear brands, such as Adidas, Nike and Timberland are demanding an immediate moratorium on destruction of the Amazon forest from their leather suppliers in Brazil. This comes after the release of a report of a three-year undercover investigation by Greenpeace in June, which stated that leather and beef sold in Britain were obtained from cattle farms involved with illegal deforestation. The Greenpeace report has also spurred the cattle suppliers themselves to take initiatives to exclude cattle raised on recently deforested land from export chains. Bertin, Brazil's top leather exporter and second largest beef exporter has signed a pact with Greenpeace to exclude cattle from recently deforested land in the Amazon from its products following the actions of meatpacker Marfrig, owners of the biggest cattle herd in Brazil, which signed a similar pact with the Mato Grosso state government.

Palms hold less carbon

The tropical rainforest conservation site mongabay.com reported that a study conducted in Sumatra and Kalimantan by World Agroforestry Centre (ICRAF) found that mature oil palm plantations store less than 40 tons of above-ground biomass compared to the 70-200 tons per hectare capacity of logged-over forests in the two locations (which themselves have under half the capacity of untouched forests). Although it has been suspected that palm oil plantations hold less carbon than natural forests, the new figures are lower than what was previously estimated. The low levels of carbon storage of palm oil planted on such lands leads to "carbon payback times" significantly longer than the typical 25 year planting cycle for oil palm, meaning that bio-diesel produced from them would have net emissions exceeding conventional petroleum. However when palm oil plantations are developed on grasslands and abandoned, non-forest agricultural land (where the amount of stored carbon is less than 40 tons/ha), the lower carbon payback time for the palm oil plantations makes biodiesel produced from them less carbon intensive than conventional petroleum.

US debt-for-nature agreement with Indonesia

The US is willing to trade off nearly $30 million in Indonesian debt for protection of forests on Sumatra Island in a debt-swap agreement signed in July 2009 under the US Tropical Forest Conservation Act. Indonesian deforestation in recent years has resulted in enough carbon dioxide emissions to place it third (behind the United States and China) on some rankings of global emitters. Conservation International, the group responsible for brokering the deal between the US and Indonesia, stated that the deal is an innovative way of helping both the people and the species of Indonesia and that the debt repayments owed to the US government will be redirected to conservation of Indonesian forests. The US has signed similar smaller agreements with countries such as the Philippines, Guatemala and Peru.

Seeing the forest for its oil

The Ecuadorean government has made a novel proposal to protect forests that cover an oilfield which lies in a corner of the country's Yasuni national park, other parts of which are already being tapped for oil. The oilfield holds about 846 million barrels of oil, roughly 20% of the country's reserves. The area of the park known as ITT (for the Ishpingo, Tambococha and Tiputini rivers) has high biodiversity and President Rafael Correa's proposal to protect the area, known as the Yasuni-ITT initiative, calls for issuing bonds worth as much as US$5.2 billion at current carbon prices in the European emissions market for the carbon emissions avoided by not exploiting the oil and preserving the forest. The money would be placed in a trust fund managed by international bodies and spent on alterative energy projects in Ecuador, with the bondholders having some control as to how the funds would be used. Any future government of Ecuador that decides to exploit the land for its oil would have to repay the bondholders with interest. Other tropical countries may launch similar initiatives based on the international response to Ecuador's proposal, which will be officially launched once an initial amount of US$350 million is raised from the EU emissions market.

Battle of the acronyms

A draft briefing paper released this year by EU NGO FERN posited that REDD implementation has the potential to undermine the EU's FLEGT process and other efforts to improve forest governance. According to the report, one of the main factors contributing to this is the tight time-frame for implementing

REDD, which may negatively impact the lengthy consultation process required for successful FLEGT agreements known as Voluntary Partnership Agreements (VPAs). In order to ensure all rights holders and stakeholders are involved, time is required to investigate legality and land tenure issues. In the push to implement REDD programs quickly, indications are that governments and international institutions developing REDD schemes are not taking time to create a proper consultation process with representatives of the groups that will be directly affected. This may push governments in the direction of REDD funding to the detriment of the FLEGT VPA process which may seem a more demanding option. REDD may cause problems with FLEGT arrangements due to the lack of clear demands for good governance and recognition of community rights within the prerequisites for REDD spelled out to date. If REDD promises funds for the same forest resource but without an insistence on good governance and recognition of rights of local communities and indigenous peoples, more governments will opt for REDD schemes and bypass the painstaking consultation processes (and when relevant, the governance and law reforms) that are part of the FLEGT process.

Green light for AR-CDM project in Vietnam

A reforestation project in the north-western Province of Hoa Binh of the Socialist Republic of Vietnam was approved in 2009 by the CDM Executive Board of UNFCCC and registered as the fourth Afforestation/Reforestation – Clean Development Mechanism (AR-CDM) project in the world, following other approved projects in China, Moldova and India. The Project was developed by the Ministry of Agriculture and Rural Development (MARD) with technical assistance from the Japan International Cooperation Agency (JICA). The project has drawn attention as the first small-scale AR-CDM project in Vietnam and involves reforestation of over 300 ha using *Acacia mangium* and *Acacia auriculiformis*. The project contributes not only to mitigation of global climate change through sequestration of CO_2 but also to socio-economic development of the local communities involved.

The major funding source for the reforestation activities of the project is Honda Vietnam's "Clean and Green Program", part of its corporate social responsibility program in Vietnam. In addition to funds, Honda has provided over 600 staff members to participate in tree planting activities. Honda Vietnam signed an agreement with the Forest Development Fund, which was recently established by the Vietnam Forestry University and the People's Committee of the Cao Phong District to implement the project.

Useful lessons learned during development of the Vietnam project for others developing small scale AR-CDM projects were:

- make project design document simple;
- prepare a feasibility study report for the project to facilitate responding to queries from designated operational entity (DOE - an independent auditor of a project's compliance with CDM requirements);
- use the default values given in the approved CDM methodologies as much as possible in order to avoid cumbersome justification and explanation of self-developed values to the DOE;

Hoe-down: Villagers and Honda employees planting seedlings on project site. *Photo: Nguyen Van Uc*

- calculate values conservatively;
- collect and file relevant documents, regulations and literature for consideration by DOE;
- use a non-profit organization as the project implementer/owner, if possible, to exempt income from earned certified emissions reductions (CERs) from tax in order to maximize CER income to be distributed to local farmers;
- pay special attention to establishing land eligibility, additionality and participation of poor communities; and
- use an applicant entity (a body waiting for CDM approval as a DOE) to reduce validation costs.

Those involved in the design and execution of the project also suggest that the CDM may consider relaxing some of its monitoring requirements without sacrificing credibility in order to make AR-CDM more attractive to investors. A similar initiative supported by JICA in South America found that frequent changes to the rules and the guidelines of Article 12 of the Kyoto Protocol make project development and approval difficult.

Africa lumbering towards forest tenure

A report released in May at a major global forestry conference in Cameroon has found that, despite some progress in Cameroon and other countries like Mozambique and Tanzania, Africa is moving much slower on tenure reform than other regions. According to the report this may be due to the fact that governmental control over the world's tropical forests hinders actions to stop deforestation and to alleviate poverty for some of the world's poorest rural peoples. The study, released by ITTO and the Rights and Resources Initiative (RRI), has found that less than 2 percent of Africa's tropical forests are owned by or designated for use by the region's forest communities and indigenous groups compared to nearly one third of all forests in Latin America, Asia, and the Pacific. Previous research by RRI partners shows that forest communities are equal or better protectors of forests than governments and industry where their rights are recognized.

Although the population density relative to forest area in Africa is close to the global average, the deforestation rate is 4 times the world average. More than 70 percent of Africa's remaining tropical forests are located in Central Africa's Congo Basin, but civil conflicts, inadequate governance, and a lack of action on land reform put much of the forest area at risk.

The study compared the distribution of ownership in 2002 and 2008 in 39 tropical countries, which represent 96 percent of global tropical forests. At the current rate of reform, it will take the Congo Basin countries 260 years to reach the level of reform achieved in the Amazon Basin. If they move as quickly as the Amazon countries, this change could happen in 16 years. The next issue of the *TFU* will focus on the outcomes of the study and conference.

Norway and U.S. support forest conservation

Norway has agreed to support the conservation of Guyana's forests with up to US$250 million. Under an agreement signed in early November, Norway will immediately put US$30 million into Guyana's 'REDD+' (Reduction of Emissions from Deforestation and forest Degradation) development fund. Additional payments (which can total up to US$250 million through 2015) will be based on the results of Guyana's efforts in preventing deforestation. The country currently suffers little deforestation but pressures are mounting for large-scale logging and forest conversion projects to support economic development. Since deforestation is almost negligible now, the agreement actually allows for a slight increase to allow for planned development projects. The Norwegian funds will be used for sustainable development projects as well as climate change adaptation measures.

The United States is also increasing its support for tropical forests, pledging US$275 million to protect tropical rainforests at a recent event hosted by Britain's Prince Charles in London. A large amount of the money is slated for the Amazon and Congo basins in South America and Africa. The fund, to be drawn from a $1.2 billion international development assistance program, aims to protect biodiversity and support sustainable landscapes with a focus on protection of tropical forests.

Disney works magic on threatened forests

The well-known film studio and entertainment conglomerate Disney will invest $7 million to save and restore forests in the Amazon, the Congo Basin and the United States. The investment will be made in partnership with NGOs Conservation International, The Nature Conservancy and the Conservation Fund. The projects aim to combat climate change, improve livelihoods of local communities and protect threatened wildlife through a variety of conservation strategies including avoided deforestation, reforestation and improved forest management. More than half of Disney's investment will go to the Tanya and Kisimba-Ikobo Community Reserves in eastern Democratic Republic of Congo and the Alto Mayo conservation project in Peru, both key tropical forest regions. The protection of these areas not only reduces carbon emissions, but will keep vital watersheds and habitats for a wide variety of wildlife, many of which are threatened or endangered, thereby maintaining biodiversity. The majority of the funds will go towards financing community management of the forests in the project areas and improving sustainable livelihood practices among local villages. The funds will also help complete project design, conduct forest carbon analysis and finance verification of avoided emissions at the conclusion of the projects.

WWF pushing FSC to publishers

The World Wildlife Fund (WWF) has called on publishers to exclusively use the FSC standard for their paper, including recycled stock. At an October book fair in Germany, the NGO presented findings of a study that showed "significant traces of tropical wood" in 19 of 51 German children's books tested. The books, which came from well known publishers found traces of tropical wood species that are almost exclusively found in natural tropical forests (as opposed to plantations). Asia Pulp and Paper (APP), named as one of the companies that produce the pulp used in the books, responded to the WWF claims by noting that they use 30% certified material (above global standards for printing paper) and that a strict procurement policy is maintained in all operations to ensure no illegally obtained wood enters the fiber supply. These arguments were insufficient to convince high profile customers like Gucci and Tiffany, which have recently dropped APP as a supplier for paper used in their catalogues and shopping bags in favour of FSC certified sources, mostly from developed countries.

Deforestation emissions overblown?

New research published by the journal Nature Geoscience indicates that the widely quoted estimate of up to 20 percent of man-made carbon dioxide emissions being caused by deforestation is excessive. The paper by Guido van der Werf at the VU University of Amsterdam reports that the figure should be closer to 12 percent, noting that the IPCC report which first made the estimate of 20 percent used wrong or outdated information. The new findings may impact the debate on forestry in a new treaty to curb carbon emissions, since the amount of carbon potentially involved in initiatives like REDD could be significantly less than estimated. However, it should be noted that the 12 percent figure is also an estimate, with the actual contribution of deforestation lying somewhere between 6 and 17 percent of manmade carbon emissions based on the best data currently available.

Space agencies and Google to watch over forests

Reuters reported that space agencies and Google Inc. are involved in an international project to monitor forests by satellite to fight global warming. "The only way to measure forests efficiently is from space," said Jose Achache, director of the Group on Earth Observations (GEO), which brings together governments, space agencies and others to evaluate forests. The project will make annual assessments of forest carbon stocks instead of the current five-year cycle. Google will contribute to the project, including with its well known for its Google Earth satellite images. America's NASA, the European Space Agency (ESA) and national space agencies of Japan, Germany, Italy, India and Brazil are involved in the forest mapping. Australia, Brazil, Cameroon, Guyana, Indonesia, Mexico and Tanzania are the seven pilot project countries for 2009-10 for which recent satellite images will be compared to satellite images dating back to 1972 to calculate deforestation rates in those countries. The first phase of the project will establish how much of each country is currently forested, while the second phase will work out how much carbon is stored in each type of forest. Radar images of forests can measure carbon above ground by recording microwaves, which are scattered by passing through vegetation, and calibrate those assessments against measurements taken on the ground.

Biodiversity possible in logged forests

A new study in the journal Conservation Biology finds that original levels of biodiversity can return within 15 years in logged forests that are properly rehabilitated. Studies were conducted in regenerating forests in northeast Borneo by Dr. David Edwards from the University of Leeds, who surveyed bird species in protected untouched forests and two previously logged forests: a forest actively rehabilitated for 15 years, and a naturally regenerating forest, both of which were logged 20 years ago. Edwards observed that through managed rehabilitation efforts, such as tree-planting, biodiversity returned within 15 years close to the level of the untouched forest, while naturally regenerating forests were shown to have less diversity within the same time frame. However, in Southeast Asia, logged forests are often converted to plantations which are not able to support as wide a range of biodiversity as natural forests. The study recommends that countries should protect and rehabilitate logged forests instead of converting them into plantations, and that such activities should be taken into consideration by carbon trading projects and REDD schemes since carbon sequestration and biodiversity preservation are directly linked.

Ghana's forest taskforce not up to task?

Despite a specially formed joint military-police forest protection taskforce, seven Ghanaian forest and wildlife reserves are still under threat of mining, logging, chainsaw operations and other incursions. According to the Regional Manager of the Forest Service Division (FSD), Mr. Kwakye Ameyaw, the threatened forest and wildlife reserves amount to close to 22 000 hectares. In an effort to address the illegal forest reserve activities, the joint taskforce is being reviewed to increase the number of military personnel involved. In addition, there are plans for increased stakeholder participation and a broadening of the scope of monitoring to cover illegal mining and farming in forest reserves. Although no arrests have been made in direct relation to the problems in the reserves, Regional Manager Ameyaw noted that the taskforce has had some success, since a number of forest reserves such as Kokosua Hills in the Juaboso District would have been completely devastated if not for its interventions.

Recently funded projects

Edited by
Ken Sato

The projects summarized below were financed in the first half of 2009. In addition to these projects, partial funding totaling almost $100 000 was provided for activities on community forest enterprises, updating SFM guidelines and outreach from ITTO's 2008-09 Work Program. The Freezailah Fellowship Fund also received $200 000 in additional funding. A total of almost US$2.5 million was committed for projects, pre-projects and activities during the period.

Demand and Supply of Tropical Wood Products in China Towards 2020

Project number:	PD 480/07 Rev.2 (M)
Budget:	ITTO: US$263 420 CAF: US$147 468 Total: US$410 888
Implementing agency:	The Institute of Forestry Policy and Information, Chinese Academy of Forestry (CAF)

This project is a follow up to ITTO PD 25/96 Rev.2 (M) "China's Consumption of Forest Products and its Demand for them from the International Tropical Forest Products Market by the Year 2010". At present China not only has become the largest importer of tropical logs in the world, but is also a global timber processing center and important exporter of tropical wood products. China plays an increasingly important role in the global processing and trading chain of tropical wood products. With the rapid development of the wood processing industries and housing starts, China's demand for tropical wood products will continue to increase and this will certainly affect the world timber market. Therefore it is of great significance to analyze and forecast future supply and demand of China's tropical wood products. The project will give a complete picture of China's demand and supply of tropical wood products to 2020 through in-depth investigations on productive capacity of tropical wood processors, the end uses of imported tropical logs and consumer's preference, and analysis of regulations and policies related to wood products trade. This project is aimed at providing reliable information on China's tropical forest product markets which could be used as a reference by both tropical log exporting countries in making market strategies and by domestic policy makers.

Sustainable Forest Production and Conservation with Community Participation in the Chepigana Forest Reserve of Darien, Panama

Project number:	PD 482/07 Rev.2 (F)
Budget:	ITTO: US$470 108 Government of Panama: US$48 628 ANCON: US$188 688 Total: US$707 424
Implementing agency:	National Association for Nature Conservation (ANCON)

This project will promote the sustainable management of the forest resources in the Chepigana Forest Reserve (CFR), with the goal of achieving social, economic and environmental sustainability in an important part of the corridor that stretches from Punta Patiño Nature Reserve through to Darien National Park. Overall, the proposal envisages determining the volume of sustainable production of tropical timber in the CFR, while critical forest assets are conserved and local quality of life is improved. More specifically, it intends to seek the production and commercialization of timber and non-timber forest products from the CFR on the basis of environmental, economic and social sustainability, while simultaneously increasing conservation of forest values in the Bagre Highland Biological Corridor, which forms an integral part of the CFR. Major outputs include the development of an integrated management plan and other required planning tools for the CFR, the training of locals in forest management and administration of the CFR and its buffer zone and the enhancement of sustainable natural resource management and sustainable development in Barge Highlands Biological Corridor and its buffer zone.

Participatory Rehabilitation and Management Project for Mangroves and Watersheds in the Coastal Area of the Douala/Edéa Wildlife Reserve – "Douala-Edéa Mangrove Project" (Cameroon)

Project number:	PD 492/07 Rev.3 (F)
Budget:	ITTO: US$676 231 Cam-Eco: US$154 021 Total: US$830 252
Implementing agency:	Cameroon Ecology (Cam-Eco)

This project is derived from the implementation of the pre-project PPD 130/06 Rev.1 (F) "Identification of a Project for the Regeneration and Management of Mangrove Forests Surrounding the Douala/Edea Reserve, Department of Sanaga-Maritime, Cameroon". Mangrove ecosystems in the Douala/Edea Reserve are under strong extractive pressure from local communities who seek to harvest their much sought after wood, and also because of other inappropriate uses, notably slash-and-burn farming practices, harvesting of fuelwood and production of charcoal, and overexploitation of non-timber forest products. The project objective is to ensure the sustainability of mangrove resources in order to improve the living conditions of surrounding communities. It specifically intends to contribute to the sustainable management of mangrove ecosystems around the Douala-Edéa Wildlife Reserve (RFDE) and associated watersheds. The project's expected outputs are a participatory management scheme for the mangrove

ecosystem in the project area and improved living standards for surrounding communities through the development of a local community economy having a low impact on mangrove ecosystems. Through a dynamic and participatory process involving capacity-building for all stakeholders, the local communities established in and around the RFDE, together with those located in the adjoining watershed areas, will participate in the development of a management master-plan for the mangrove areas surrounding the RFDE. In parallel with this management master-plan development process, a number of pilot income-generating activities (IGAs) will be developed by these communities. IGAs having lesser impact on the mangrove ecosystems will be promoted in order to better involve local forest communities and raise their interest in the conservation of mangrove ecosystems.

Tropical Forest Conservation for Reducing Emissions from Deforestation and Enhancing Carbon Stocks in Meru Betiri National Park, Indonesia

Project number:	PD 519/08 Rev.1 (F)
Budget:	ITTO: US$814 590 Government of Indonesia: US$158 798 Total: US$973 388
Implementing agency:	Forestry Research and Development Agency (FORDA)

This project is designed to contribute to conservation of tropical forests for reducing emissions from deforestation and forest degradation and enhancing forest carbon stocks through enhanced community participation in conservation and sustainable management of the Meru Betiri National Park (MBNP) as an integral part of the larger landscape in which they live. To this end, the project specifically intends to: (1) improve the livelihoods of local communities living inside and in the surrounding area of MBNP through participation in avoiding deforestation, degradation and biodiversity loss; and (2) develop a credible measurable, reportable and verifiable system for monitoring emission reductions from deforestation and forest degradation and enhancing forest carbon stocks in MBNP. Expected outputs of the project include: improved participation of communities in conservation forest management; alternative sources of income to improve the livelihoods of local communities living inside and in the surrounding area of MBNP developed; illegal logging and forest encroachment reduced and reported; capacity in resource base inventory and carbon accounting improved in measurable, reportable and verifiable forms; report on comprehensive baseline data and estimation of emissions reduction and carbon enhancement of the national park prepared; and system for monitoring emission reduction and enhancement of carbon stocks established and validated. The project also seeks to establish Public-Private Partnership(s) to facilitate its goal of conserving tropical forests for reducing emissions from deforestation and forest degradation (REDD).

In addition to the above projects funded through the regular project cycle in the first half of 2009, ITTO committed funding totaling over $150 000 in mid-2009 to the following activity and pre-project through its Thematic Programs on Reducing Deforestation and Forest Degradation and Promoting Environmental Services (REDDES) and Tropical Forest Law Enforcement and Trade (TFLET). Subsequent issues of the *TFU* will report on projects, pre-projects and activities funded under the Thematic Programs together with those funded through the regular project cycle.

Building a voluntary carbon marketing scheme to promote sustainable forest management

Serial number:	RED-A 004/09
Budget:	ITTO: US$97 180 Total: US$97 180
Implementing agency:	ITTO

This proposal from the ITTO Secretariat to the REDDES program focuses on the development of a feasibility study for the establishment of a mechanism within ITTO to capture funds from private sector and other potential contributors to fund voluntary forest related carbon offsetting schemes, including REDD and payment for environmental services (PES) projects. Apart from the feasibility study, the activity will also generate a design and strategy for the implementation of the proposed scheme.

Strengthening the capacity of local communities of Chaiyaphum Province (Thailand) to manage community forests

Serial number:	TFL–PPD 005/09 Rev.1
Budget:	ITTO: US$56 970 Government of Thailand: US$21 708 Total: US$78 678
Implementing agency:	Bureau of Community Forest Management, Royal Forest Department, Thailand

The Government of Thailand submitted this pre-project to the TFLET program to develop a project proposal aimed at enhancing forest law enforcement and governance and strengthening communities' capacities to use their forests for poverty alleviation in Chaiyaphum Province. At present, the necessary information for an adequate project design on this theme is lacking. The pre-project will facilitate collection and analysis of baseline information on community forestry in Chaiyaphum Province and will define clear strategies on how to solve problems inhibiting sound community forestry development. The development objective of the pre-project is to contribute to the sustainable development of rural communities of Chaiyaphum Province through the promotion of law enforcement, good governance and sustainable management and use of community forests. The specific objective is to develop a comprehensive project proposal aimed at strengthening the capacity of communities of Chaiyaphum Province to sustainably manage their forests.

ITTO members

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

Letters

Sir,

After reading the article "Getting more money for forests" in *TFU* 18(4) I would like first of all to congratulate ITTO for its initiative in promoting forums on responsible investment in tropical forests. According to the article "all forums pointed out that current levels of investment in natural tropical forests fall well short of ensuring their sustainable management and the avoidance of conversion to other land uses". Although lack of investment can have contributed to avoiding SFM as well as conversion to other land uses, it seems to me excessive bureaucracy allied to unstable rules play a role greater than lack of investments. For example, forestry is a long run activity; within this context, how can one expect that an entrepreneur is going to invest in such a sector that has unstable rules? In Brazil, the excessive bureaucracy generates a negative environment regarding to forestry activities, for example, if one has an area it is easier to apply for a license to convert the area to agriculture, including cattle ranching, than to develop a forestry activity. This is so, because once he(she) gets the license and establishes crops or cattle the owner is free to harvest and trade the production. However, on the other hand, if it is a forestry activity it requires management plans, permission to transport the wood and so on and even there is the risk that in the future, for example, a law is issued declaring the area as a preservation area. In 2007, an entrepreuner was encouraged to change his original project that was to grow soyabean to develop forest management. He accepted the suggestion and changed, however, due to pressure of environmental groups his project could not be fully developed and still he is waiting for a decision from the justice system if the project will or will not be developed. It is is interesting to note that he already had a license to convert the area to agricultural use when he changed the project from an agricultural project to a forestry one. Within this context, how can someone be interested in investing in forestry activities even if financing is available? It is very important to deal with these questions regarding excessive bureaucracy, unstable rules and institutions and the need to create a more friendly environment if forestry activities are to be stimulated. Finally, it is fair to assume that evidence suggests that this anti-stimulus context has not contributed to avoid deforestation although it has been advocated as a way to do so.

Regards,
Sebastião Kengen

Illustration: Agni Boedhihartono (Intu)

Sir,

I looked in vain for an indication that the recent (and otherwise excellent) Tropical Forestry Update was printed on FSC Certified (or even re-cycled paper)…perhaps I overlooked it? In any case, given that the FSC arguably has had more influence on what happens in tropical forests than any other governmental or non-governmental program, I wondered why ITTO hasn't made the switch to FSC Certified paper…excuse me if I overlooked the logo.

Regards,
Francis E. Putz

Editor's note: The provenance of the TFU's paper is provided on page 2. Although the TFU has used certified paper stocks for several years, ITTO's policy is not to explicitly or implicitly endorse any competing wood products marketing mechanisms, including certification schemes. Readers who wish to receive more information on the environmental profile of the TFU's paper stocks should contact tfu@itto.int.

Letters to the editor are welcome and can be sent to the contact address/email provided on page 2.
Letters must contain full contact details and may be edited for clarity/length.

Courses

Short courses at CAZS Natural Resources

Bangor University, Wales, UK

Various dates throughout the year

Cost: Tuition fees begin at around £3000 for one standard 3 week module

CAZS-NR has for many years provided short courses in a number of natural resources - and environment-based topics. These currently range from simple 3 or 5 week courses based around existing MSc modules, with the addition of tuition, practical work and visits tailored to the specific requirements of the participants, up to full 12-week courses designed in response to the requirements of a particular sponsor. The module-based courses are ideal for rural development workers who cannot spend long periods away from their place of work, but want exposure to recent scientific advances. They are a flexible option for extending knowledge and professional skills, and expanding career options. For the module-based courses, fees are reduced for more than one student. The more specialized courses provide an opportunity for in-depth study or training in a particular area of interest, and are suited to those who need to develop particular skills for existing or new job responsibilities.

Details: http://www.cazs.bangor.ac.uk/ccstudio/CourseInfo/cazscourses_Overview.php

The Biodiversity of Borneo

Malaysia

1 June– 9 July 2010

Cost: US$6000

This course led by Harvard University focuses on the evolutionary and ecological processes that lead to the amazingly high biodiversity of Borneo as well as the issues that seriously threaten that diversity today. Study involves a demanding mix of lectures, field projects, and personal exploration, with local and international experts as instructors. The course also offers a unique cross-cultural experience, as the 10 Summer School participants join a similar number of students and young scientists from Southeast Asian countries. The team moves among a number of sites, visiting the major forest, mountain, and marine environments in Borneo. At some sites students participate in group data collection, and at others they learn to conduct short independent research projects. A common thread throughout the course is statistical analysis. Students receive instruction in tropical forest ecology, plant systematics and biogeography, entomology, coral reef ecology, cultural anthropology, tropical conservation and management issues, and tropical medical issues and their environmental causes and consequences.

Details: http://www.summer.harvard.edu/2010/programs/abroad/borneo/

One Planet Leader program

2010 venue(s) to be confirmed

Various programs from March to May and September to November, 2010

Cost: Euro 3350-9650

One Planet Leaders is a program designed by WWF to help companies align business models with environmental and societal pressures. It helps companies understand and leverage the opportunities of sustainability and corporate social responsibility. The following programs are offered in Spring 2010 sessions: *Workshop I: Sustainability and Your Business Future* (March 3-5), *Workshop II: Business Transformation for Sustainability* (April 14-16); *and Workshop III: Creating and Communicating Change for Sustainability* (May 19-21).

Details: http://panda.org/what_we_do/how_we_work/businesses/training/

Illustration: Agni Boedhihartono (Intu)

E-newsletters on forests and climate change

CLIM-FO-L is an electronic newsletter on forests and climate change compiled monthly by FAO. It provides information on developments in UNFCCC negotiations, publications, websites, events, job opportunities and project information. For more information and to access previous issues of the newsletter, visit http://www.fao.org/forestry/ 54538/en. Comments and inputs for upcoming issues of CLIM-FO-L can be sent to CLIM-FO-Owner@fao.org

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) publishes a monthly newsletter offering timely news and analysis on REDD+ and UN-REDD initiatives from around the world, as well as feature commentaries, upcoming events, and reports on REDD+ issues. Guest columnists include NGOs, forestry experts and government advisors on the environment. Current and back issues of the newsletter, as well as a link to subscribe to receive it by e-mail, are available on www.un-redd.org.

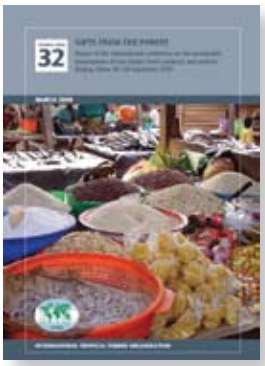
Courses/fora are in English unless otherwise stated. By featuring these courses ITTO doesn't necessarily endorse them. Potential applicants are advised to obtain further information about the courses of interest and the institutions offering them.

Recent editions

Edited by Ken Sato

***ITTO. 2009.* Gifts from the Forest. *ITTO Technical Series 32. Yokohama, Japan. ISBN:* 4-902045-45-1**

Available from: *ITTO Secretariat (see page 2 for contact details); online under Publications - Technical Reports at www.itto.int*



This report of the international conference on the sustainable development of non-timber forest products and services held in Beijing, China presents an overview of the global non-timber forest products and services sector, considerations regarding the growing significance of community forest enterprises in the production of forest products and services, and discussions on policy and practical issues related to the development of markets for carbon and other forest services.

ITTO/FAO, 2009.* Forest governance and climate-change mitigation. A policy brief prepared by ITTO and FAO. *ITTO. Yokohama, Japan; FAO. Rome, Italy

Available from: *ITTO Secretariat (see page 2 for contact details); online under Publications - Technical Reports at www.itto.int*

This policy brief summarizes the main findings of five workshops that were jointly funded and convened by ITTO and FAO in Southeast Asia, West Africa, Central Africa, the Amazon Basin and Mesoamerica, between August 2006 and July 2008 to promote a multi-sectoral dialogue between countries on improving forest law compliance. It highlights the lessons learned from experiences on the ground and sets out the key elements of an approach to forest law compliance and governance that will ensure the optimal role of forests in mitigating climate change.

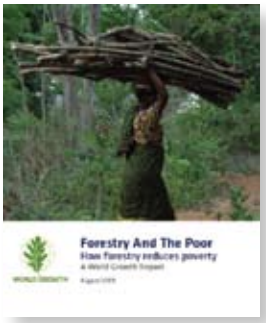
ITTO. 2009.* Encouraging Industrial Forest Plantations in the Tropics. *ITTO Technical Series 33. Yokohama, Japan. ISBN: 4-902045-52-4

Available from: *ITTO Secretariat (see page 2 for contact details); online under Publications - Technical Reports at www.itto.int*

This document is the report of a study on encouraging private-sector investment in industrial forest plantations in the tropics. It assesses the success of forest plantations, taking into account ecological, economic and social aspects and their overall contribution to sustainable development in accordance with the ITTO *Guidelines for the Establishment and Sustainable Management of Planted Tropical Forests* and ITTO action plans.

World Growth, 2009.* Forestry and the poor: How forestry reduces poverty. *World Growth Report.

Available from: *http://www.worldgrowth.org/resources/*



This report, the third of a World Growth Organization series examining forestry and sustainable development in developing countries, presents the economic benefits of expanding forestry in the developing world. The report reveals that forestry generates up to 7% of gross domestic product (GDP) in poor countries, creating jobs and prosperity. It compares the value of established uses of forest land with the economic return of using trees solely for carbon storage. According to the report, traditional uses of forest land generate returns of four to eight times the value of carbon farming. The report concludes that the expansion of carbon sinks to reduce emissions will only be effective if it includes sustainable forestry operations in natural forests as well as establishment of plantations and commercial crops.

WTO/UNEP. 2009.* Trade and Climate Change: WTO-UNEP Report. *World Trade Organization, Geneva, Switzerland. WTO ISBN: 978-92-870-3522-6; UNEP ISBN: 978-92-807-3038-8

Available from: *http://www.wto.org/english/res_e/publications_e/trade_climate_change_e.htm (English)*

http://www.wto.org/french/res_f/publications_f/trade_climate_change_f.htm (French)

http://www.wto.org/spanish/res_s/publications_s/trade_climate_change_s.htm (Spanish)

This report details the many linkages between trade and climate change. It begins with a summary of the current state of scientific knowledge on climate change and on the options available for responding to the challenge of climate change. The scientific review is followed by a section on the economic aspects of the link between trade and climate change, and these two parts set the context for the subsequent parts of the report, which look at the policies introduced at both the international and national level to address climate change. The section on international policy responses to climate change describes multilateral efforts to reduce greenhouse gas emissions and to adapt to the effects of climate change, including the role of current trade

and environment negotiations. The final section of the report gives an overview of a range of national policies and measures that have been used by countries to reduce greenhouse gas emissions and to increase energy efficiency. It presents key features in the design and implementation of these policies, in order to draw a clearer picture of their overall effect and potential impact on environmental protection, sustainable development and trade. It also gives, where appropriate, an overview of the WTO rules that may be relevant to such measures.

Mertens,B. and Makak, J.S. 2009*. Interactive Forest Atlas for Gabon (Atlas Forestier Interactif du Gabon). *WRI and Gabonese Ministry of Forest Economy, Water, Fishing, and Aquaculture (MEFEPA), Washington DC, USA. ISBN: 978-1-56973-709-5

Available at: *http://www.wri.org/publication/interactive-forestry-atlas-gabon*

This is the first interactive forest atlas for Gabon. This pilot version of the atlas contains the following:

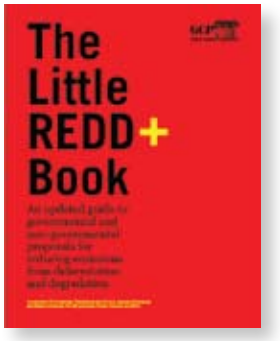
- a user manual which provides installation instructions and a visualization of the atlas and its contents;
- a mapping application, which allows users to visualize maps in detail, to make panoramic views or zoom in on points of interest, to visualize data layers, to examine the data bases, and to print the maps;
- Geographic Information System (GIS) data and metadata, including original data files and attributes;
- an overview report providing the legislative context, analysis and potential applications of the interactive atlas towards sustainable forest management; and
- a poster of official logging concessions and protected areas.

The atlas is both an information management tool, as well as an aid to decision makers towards supporting sustainable use of forest resources. It will contribute to sustainable forest management (SFM) in Gabon, based on the harmonized ATO/ITTO Principles, Criteria and Indicators forSFM.

Available only in French

Global Canopy Programme. 2009*. Little REDD Book (2nd Edition). *Oxford, UK.

Available at: *www.globalcanopy.org; www.littleREDDbook.org*

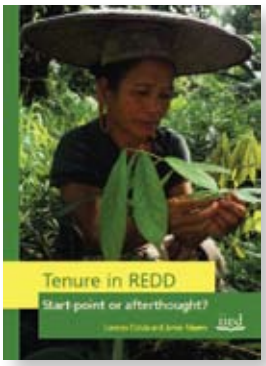


This book is a guide to the UN negotiations on Reducing Emissions from Deforestation and Degradation (REDD). It was launched at the UNFCCC climate summit in December 2008 and the updated edition released in June 2009 has been revised to reflect the latest research and submissions on REDD and includes an updated analytical framework. It aims to bring clarity to this complex and rapidly-evolving topic by providing insights and information on the process in non-technical language.

Available in: French, Spanish, Bahasa Indonesia, and Portuguese.

Cotula,L. and Mayers, J. 2009*. Tenure in REDD: Start-point or afterthought? *IIED. London, UK. ISBN: 978-1-84369-736-7

Available from: *www.earthprint.com for purchase of print edition, or free download from http://www.iied.org/pubs/display.php?o=13554IIED*



This report aims to promote debate on the issue of resource tenure in regards to the REDD negotiations currently underway in international climate change talks. Issues regarding tenure over land and trees and the systems of rights, rules, institutions and processes regulating their access and use will affect the extent to which REDD and related strategies will benefit, or marginalise, forest communities and therefore require greater attention. The report draws on experience from seven rainforest countries (Brazil, Cameroon, Democratic Republic of Congo, Guyana, Indonesia, Malaysia and Papua New Guinea), and develops a typology of tenure regimes across countries, explores tenure issues in each country, and identifies key challenges to be addressed if REDD is to have equitable and sustainable impact.

Del Gatto, F.; Ortiz-von Halle, B; Buendía, B.; and Hin Keong, C. 2009*. Trade liberalization and forest verification: learning from the US-Peru Trade Promotion Agreement. *Verifor Briefing Papers. Overseas Development Institute. London, UK.

Available at: *http://www.verifor.org/RESOURCES/briefing-papers/9-perutradeliberalisation.pdf*

This paper presents a preliminary analysis on efforts to tackle illegal logging issues in Peru following the United States-Peru Trade Promotion Agreement and Forest Sector Governance Annex, which came into force in February 2009. This paper elaborates on the Annex and the changes it required, including a binational timber legality verification mechanism and a renewed verification agency. Peru's challenges in eliminating illegal timber trade are presented and steps to ensure success enumerated. Emphasis is placed on governance as a critical factor in implementing a full auditing and verification mechanism while strengthening CITES implementation for two main timber species (*Swietenia macrophylla* and *Cedrela odorata*).

Meetings

1-5 February 2010
6th Trondheim Conference on Biodiversity
Trondheim, Norway
Contact: trondheim.conference@dirnat.no; www.trondheimconference.org

22-26 February 2010
African Forestry and Wildlife Commission - 17th Session and 1st African Forestry and Wildlife Week
Brazzaville, Republic of Congo
Contact: FAO Regional Office for Africa, Foday.bojang@fao.org

24-26 February 2010
11th Special session of the Governing Council/Global Ministerial Environment Forum of the United Nations Environment Programme (UNEP)
Bali, Indonesia
Contact: Jamil Ahmad, Secretariat of the Governing Bodies: jamil.ahmad@unep.org

12 and 25 March 2010
59th and 60th meetings of the CITES Standing Committee
Doha, Qatar
Contact: info@cites.org; www.cites.org

13-25 March 2010
15th Meeting of the Conference of the Parties to CITES
Doha, Qatar
Contact: info@cites.org; www.cites.org

15-17 March 2010
World Biofuels Markets
Amsterdam, Holland
Contact: Victoria Adair; victoria.adair@greenpowerconferences.com; www.greenpowerconferences.com Tel: +44 (0)207 099 0600

15-17 March 2010
The 4th Global Wood Fiber Conference: Trade in Woodchips and Biomass and International Timberlands Investment Trends Conference: Focus on Latin America
Sao Paulo, Brazil
Contact: http://www.pulpwoodconference.com/

22-26 March 2010
Fourth International Casuarina Meeting
Haikou, Hainan, China
Contact: Zhong Chonglu, Research Institute of Tropical Forestry, Chinese Academy of Forestry, Long Dong, Guangzhou, PRC; zclritf@gmail.com; zclritf@21cn.com; Tel: +86 20 87030939, +86 13672456532; Fax: +86 20 87031622; or Khongsak Pinyopusarerk, CSIRO Plant Industry, PO Box E4008, Kingston, ACT 2604, Canberra, Australia; khongsak.pinyopusarerk@csiro.au; Tel: +61 2 62818247; Fax: +61 2 62818266

March 23-25 2010
32nd Session of FAO/UNECE Working Party on Forest Economics and Statistics
Geneva, Switzerland
Contact: Alex McCusker; alex.mccusker@unece.org www.timber.unece.org/index.php?id=124

12-14 April 2010
International Conference on the Efforts in Response to Forest-Related Natural Disasters
Beijing, China
Contact: Alex Mosseler; amosseler@nrcan.gc.ca; or Maria Patek; maria.patek@lebensministerium.at

13-15 April 2010
Dubai International Wood Show
Dubai
Contact: info@dubaiwoodshow.com

27-30 April 2010
European Forestry Commission
Lisbon, Portugal
Contact: Franziska Hirsch; franziska.hirsch@unece.org; www.timber.unece.org/index.php?id=124

28-30 April 2010
IWPA's World of Wood Convention
Miami Beach, Florida, USA
Contact: 4214 King Street, Alexandria, Virginia 22302 USA; info@iwpawood.org; http://www.iwpawood.org/; Tel: 1-703-820-6696; Fax: 1-703-820-8550

3-5 May 2010
Third International Conference on Environmental Economics and Investment Assessment
Cyprus, Greece
Contact: www.wessex.ac.uk/10-conferences/environmental-economics-2010.html

11-12 May 2010
3rd Annual Sustainable Manufacturing Summit
Chicago, Illinois, USA
Contact: Sean Budway, sean.budway@greenpowerconferences.com, info@greenpowerconferences.com; http://www.asaseries.com/v8-12/Prospectus/Index.php?sEventCode=SM1004US

24-29 May 2010
Latin American and Caribbean Forestry Commission - 26th Session
Guatemala City, Guatemala
Contact: FAO Regional Office for Latin America and the Caribbean, Carlos Carneiro; carlos.carneiro@fao.org

5 June 2010
World Environment Day. Biodiversity: Connecting with Nature
Pittsburgh, Pennsylvania
Contact: Ms. Lucita Jasmin, Division of Communications and Public Information, United Nations Environment Programme (UNEP); worldenvironmentday@unep.org; www.pittsburghwed.com/index.html; Tel: +1-254-20-7623401 / 7623128; Fax: +1-254-20-7623692 / 7623927

9-11 June 2010
Asia-Pacific Forestry Commission - 23rd Session
Bhutan, Thimpu
Contact: FAO Regional Office for Asia and the Pacific, Patrick Durst; patrick.durst@fao.org

28 June-2 July 2010
18th Commonwealth Forestry Conference. Restoring the Commonwealth's Forests: Tackling Climate Change
Edinburgh, UK
Contact: 18th Commonwealth Forestry Conference, c/o In Conference Ltd, 4-6 Oak Lane, Edinburgh EH12 6XH, Scotland, United Kingdom; cfcc@in-conference.org.uk; www.cfc2010.org; Tel: +44 131 339 9235; Fax: +44 131 339 9798

14-17 July 2010
International Conference on Biodiversity Conservation in Transboundary Tropical Forests
Quito, Ecuador
Contact: Hwan Ok Ma; ma@itto.int; www.itto.int

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

23–28 August 2010
23rd 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; iufrococ@forest.go.kr; www.iufro2010.com; www.iufro.org; Tel: +82 2 961 2591; Fax: +82 2 961 2599

21-27 September 2010
Forest Landscapes and Global Change: New Frontiers in Management, Conservation and Restoration
Bragança, Portugal
Contacts: Joao Azevedo; iufrole2010@ipb.pt; or Jiquan Chen; jiquan.chen@utoledo.edu

4-8 October 2010
20th Session of the United Nations Food and Agriculture Organization's (FAO) Committee on Forestry (COFO)
Rome, Italy
Contact: www.fao.org/forestry/cofo/en/

6-8 October 2010
International Conference-Forum on Emerging Economic Mechanisms: Implications for Forest-Related Policies and Sector Governance (in the framework of COFO-World Forestry Week)
Rome, Italy
Contact: Prof. Gerard Buttoud, University of Tuscia, Department of Forest Environment and Resources (DISAFRI); via San Camillo de Lellis snc., 01100 Viterbo, Italy; gerard.buttoud@unitus.it

11-15 October 2010
Society of Wood Science and Technology. 53rd International Convention
Geneva, Switzerland
Contact: Victoria L. Herian; vicki@swst.org

11-15 October 2010
UNECE Timber Committee, 68th session, held jointly with Society of Wood Science and Technology
Geneva, Switzerland
Contact: Ed Pepke; ed.pepke@unece.org; http://timber.unece.org/index.php?id=124

18-29 October 2010
10th Conference of the Parties to the Convention on Biological Diversity (COP 10)
Nagoya, Japan
Contact: Secretariat of Aichi-Nagoya COP 10 CBD Promotion Committee, 3-2-1 Sannomaru, Naka-ku, Nagoya; aichi-nagoya@cop10.jp; www.cop10.jp/aichi-nagoya/english/index.html; Tel: +81-52-972-7778 or +81-52-972-7779; Fax: +81-52-972-7822

29 November - 10 December 2010
16th Conference of the Parties (COP 16)/ 6th Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 6)
Mexico City, Mexico
Contact: http://unfccc.int/

13-18 December 2010
46th Sessions of the International Tropical Timber Council and Associated Committees
Yokohama, Japan
Contact: ITTO Secretariat; itto@itto.int; www.itto.int Tel: +81-45-223-1110; Fax: +81-45-223-1111