

ITTO Tropical Forest

UPDATE

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



The cutting edge of SFM

SUSTAINABLE FOREST MANAGEMENT (SFM) has always been a goal of foresters. The trouble is, the concept of SFM has changed. Once, foresters learned mainly about sustained timber yield—how to calculate it, measure it and achieve it in the forest. Now, the profession has many more concerns: biodiversity conservation, community involvement, and a rapidly changing marketplace, to name only a few. In the tropics, the forestry profession is beset with problems ranging from illegal harvesting and disputed land tenure to the high profitability of alternative land-uses and competition in international timber markets.

Given the changing nature of the challenges facing SFM in the tropics, international treaties set up to meet them must also evolve. The first International Tropical Timber Agreement (ITTA) was agreed in 1983, the second in 1994. Now, a third has been agreed. The new ITTA, which was adopted amid dramatic scenes on the last day of the fourth part of negotiations in January 2006, is set to come into effect in 2008.

The new agreement is at the cutting edge of international



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Cover image Leaf-cutter ants (*Attini* spp) at work in an Honduran rainforest. © Konrad Wothe/APL

efforts to promote SFM and a sustainable timber trade, say three negotiators who were willing to put their views on paper (page 4). The ITTA, 1994 contained 13 objectives; the new agreement has two key objectives (described on page 3) and 19 specific objectives that expand the scope of ITTO's work. Strengthening the capacity of members to improve forest law enforcement and governance and address illegal logging and related trade in tropical timber will now be an explicit task of the Organization, as will contributing to sustainable development and poverty alleviation. The Organization will also have a clear mandate to encourage its members to recognise the role of forest-dependent indigenous and local communities in achieving SFM and to develop strategies to enhance the capacity of these communities to sustainably manage tropical timber-producing forests. At the same time it will continue its work to promote access to, and transfer of, technologies related to tropical forest industries and increased and further processing of tropical timber from sustainable sources.

The making of forest policy at the international level runs many risks, but probably the greatest of all is that the policies thus made will never be implemented. This is because there is often a huge gap between the international ideal and the reality on the ground, and many countries simply lack the means to put the policies into effect. To be useful, an international organisation such as ITTO must be able to provide its members with resources with which the process of policy implementation can commence. Since 1986, when it became operational, the Organization has committed about US\$280 million in grants towards the achievement of its objectives within member countries, and ITTO certainly ranks among the most generous of all the international organisations concerned with tropical forests. This is a feature that Katsuhiko Kotari, one of ITTO's founding fathers, particularly admires (page 32)—the ability to put policy into practice. Yet spread between 33 producer members over nearly 20 years, the power of a sum of money of this size to drive change is limited; while certainly useful, it falls far short of what is necessary to bring the tropical forest estate

under SFM and to optimise the contribution of tropical forest industries to sustainable development. Under the new agreement, a sub-account for thematic sub-programs has been set up to make it easier for donors to contribute. Time will tell what effect this change will have on the availability of funds to implement the Organization's policy initiatives in member countries.

Elsewhere in this edition we highlight a new law in Brazil that will lead to the country's first timber concessions (page 7). Concessions will only be allocated if bidding entities—companies, communities and non-governmental organisations—can demonstrate high management standards and the generation of social benefits. Two articles on the Tapajós National Forest, where timber harvesting has been carried out with the assistance of an ITTO project, explore the ground-level impacts of a prototype SFM regime, both social and environmental, and foreshadow what might be expected with the adoption of a highly transparent concession regime.

Another article examines the state of teak improvement work in countries where teak is found naturally, and finds that a great deal of work needs to be done before the highest-quality genetic material can be made available for the expanding area of teak plantations. Another looks at France's tropical timber trade, recommending steps that tropical timber producers and ITTO could take to grow that trade, and another at Gabon's efforts to institute a reliable system for the gathering of timber-sector statistics.

This edition of the *TFU*, which was due out at the end of 2005, has been delayed by a number of factors; I apologise for any inconvenience caused. The next edition—a special report on the status of forest management in the tropics—will follow very quickly. It will show that a great deal of progress is being made in the implementation of SFM in the tropics, despite the sector's problems. Yet only a small fraction of the tropical forest estate is under SFM; ITTO and other international and national promoters of SFM will no doubt be kept as busy as ants for many years to come.

Alastair Sarre

New forest treaty agreed

The agreement under which ITTO operates is re-negotiated, with some new features added

A NEW TREATY has been agreed that will reinforce work to bring tropical forests under sustainable management and increase the role of the tropical timber trade in sustainable development.

ITTO, which was created in 1983, aims to both conserve tropical forests and assist countries to develop economically. The treaty under which it operates—the International Tropical Timber Agreement (ITTA)—is renegotiated periodically because of a built-in expiry clause and to take into account changes in global forest policies and the world timber trade.

More than 180 negotiators from governments and international organisations met for two weeks in January 2006 to finalise the agreement. It contains several changes that are likely to lead to significant improvements in the Organization's work.

The Organization's longstanding philosophy of using tropical forests in a sustainable way for economic development is stated explicitly in the new agreement. The two key objectives are:

“to promote the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests and to promote the sustainable management of tropical timber producing forests ...”

Related to the first objective, the Organization will, among other things, help improve the competitiveness of wood products relative to other materials, boost the marketing of tropical timber from sustainably managed and legally harvested sources, and share information on certification and other aspects of the international timber market.

In pursuit of the second key objective, the Organization will help countries to improve forest law enforcement and governance, address illegal logging and related trade in tropical timber, and undertake sustainable forest management and forest restoration. It will also strengthen the capacity of countries to gather and report data on the tropical timber trade and forest management.

The agreement acknowledges the role of ITTO in assisting countries to pursue sustainable development and alleviate poverty and encourages forest-dependent indigenous and local communities to achieve sustainable forest management.

ITTO relies for much of its work on funds contributed on a voluntary basis, up to now mostly by the governments of Japan, Switzerland and the United States. To help boost such contributions the new agreement creates a sub-account for thematic sub-programs, which, some donors say, will lead to greatly increased funding for specific areas of work. There are also changes to assessed contributions, with activities such as the production of the *Tropical Forest Update* and Market Information Service, which are currently funded through projects, and other communications and outreach activities to be funded 80% by consumer member countries and 20% by producers to a maximum of one-third the general administrative budget.

ITTO's Executive Director, Dr Manoel Sobral Filho, said that the new agreement will help ITTO build on its past sustainable development successes.

“People want neither poverty nor environmental degradation,” he said. “ITTO believes that natural tropical forests can be both



Negotiators at work: Alhassan Attah (centre), Jürgen Blaser (second from left) and UNCTAD staff discuss the finer points of the agreement during an informal working group.

Photo: © M. Goldstick/ENB

conserved for future generations and put to economic use to alleviate poverty and contribute to national development. This new agreement articulates this belief and gives material support for it through innovative funding mechanisms.”

Dr Sobral said that many people think the conservation of tropical forests and the development of the tropical timber trade are mutually exclusive.

“On the contrary, the one is essential for the other,” he said. “Without conservation there can be no long-term trade. Without trade, the forests will be cleared for agriculture because, one way or another, the people living in tropical countries will continue to demand economic development.

“ITTO's role has been, and will continue to be, to help governments, companies and communities to improve the management of their forests and the marketing of their products.”

The independent environmental news service the *Earth Negotiations Bulletin* (ENB) reported the negotiations from start to finish and was upbeat about the outcome.

“Certainly, the new ITTA is born at a time when international cooperation on forests could use an infusion of new energy,” it said.

According to the ENB, many activist environmental groups may not be willing to concede legitimacy to an organisation with overriding objectives that include promoting the expansion of the international trade in tropical timber.

“Yet the fact that the ITTO keeps chugging away, together with the increased potential that the new agreement brings to its work, may eventually make ITTO one of the most effective international organizations in pursuing the goals of both ending tropical deforestation and increasing the well-being of the people and communities that depend upon tropical forests.”

The ITTA, 2006, is expected to come into force in 2008 and will operate for ten years, with the possibility of extensions of up to eight years. ITTO will continue to function under the ITTA, 1994, until the new Agreement is ratified.

For a detailed report on the negotiations go to <http://www.iisd.ca/forestry/itto/itita4/>.

The TFU asked three key negotiators of the ITTA, 2006 to present their views on the new agreement

Daniel Birchmeier **Swiss delegation**

- 1) *The current agreement is due to expire at the end of this year. What motivated your government to negotiate a successor agreement?*

Motivations included:

- the importance of the ITTA: it is the only international agreement with some binding character directly relating to tropical forests and forest products;
- positive experiences with the ongoing work;
- the efficient work of the Organization;
- the Organization's balanced mix of policy and project work; and
- the constructive policy dialogue and knowledge exchange concerning all major issues relating to tropical timber and the management of its resource base.

- 2) *How would you characterise the new agreement?*

The new agreement has taken up emerging issues, reflecting the experiences and work of the Organization in the past, especially its most recent years. At the same time it is forward-looking enough to cope with future challenges.

- 3) *How has it changed?*

The scope has widened towards new fields such as trade in non-wood forest products and considerations in respect to the valuation and trade of tropical forest service functions, but also with regard to illegal logging and related trade. ITTO can now play an even more important role as a platform for the exchange of experiences, and feed into other ongoing processes.

- 4) *Please highlight what you see as the key improvements in the new agreement.*

The new agreement has a potentially more attractive structure—with the establishment of thematic programs—to allow a wider set of donors to contribute financially to the realisation of the objectives. It also contains some reforms of the system for assessed contributions, which will ultimately broaden and make more predictable the financial support for the Organization, particularly increasing its ability to sustain the recurrent operational activities of fundamental importance for the Organization. A longer duration of the agreement (for an initial ten years, with scope for a maximum of 18 years) helps the Organization to focus on the realisation of its objectives. Finally, the text of the agreement is better structured than that of the ITTA, 1994, containing less detail but more clarity.

- 5) *What effects, if any, do you think the changes will have on the operation of the Organization and the achievement of its mandate?*



Photo: © M. Goldstick/ENB

This is difficult to say at this stage. Some possible consequences include:

- less micro-management by the Council and increased responsibility for the executive director and the secretariat in realising the objectives of the agreement;
- more responsibility for the executive director in the financial management of the Organization, including fundraising and securing a stronger involvement of additional donors;
- more flexibility for the Organization in addressing emerging issues in respect to tropical forest management and timber trade and in developing innovative measures to secure the sustainable management of the resource base of tropical timber; and
- the consolidation or even upscaling of the role of ITTO in the international forest regime and in the trade-related multilateral landscape.

The work of ITTO under the new ITTA will continue to require a highly qualified staff.

- 6) *Were you disappointed by any of the outcomes, or lack of outcomes? What were they?*

There were no major disappointments: negotiations are ultimately an act to find the right compromise. We appreciate the high level of compromise that was made by all the participants. The agreement gives substantial flexibility to the executive director and the Council to design future work. The way the different issues (budgeting, handling of thematic programs, etc) will be addressed will offer a clearer answer to this question.

- 7) *What steps, if any, are needed to prepare members and the Organization for the new agreement?*

There will need to be substantial preparatory work, including discussions among members, in view of the organisation of work under the new agreement. The new budget process will be challenging, especially initially, and there will be many discussions on managing the transition between agreements. The new agreement will also require review and the revision of a number of elements of the project cycle.

Reflection concerning a possible extension of the current executive director's term in view of a smooth and efficient transition to the new agreement could be helpful.

8) *Do you expect most current members to join the new agreement?*

Yes, we do hope so and will do our best ourselves to ratify as soon as possible.

9) *What is your vision for ITTO over the next decade?*

The Swiss government foresees an objectives-focused policy dialogue by the Council that tackles the relevant issues to secure the resource base and a continuous flow of forest products from legally and sustainably managed sources. The results of such dialogue could feed the international forest and trade-related regimes and effectively highlight the specific situation of tropical forest and timber production countries. We also hope for the effective reporting on trade in timber and other forest products as well as on the status of the resource base for tropical timber and other forest products, and project work in producer member countries that is more thematic than in the past and which contributes effectively to realising the objectives of the new agreement. If ITTO can achieve its objectives, it will make a substantial contribution to broader development goals.

Daniel Birchmeier is at the Swiss Government's State Secretariat for Economic Affairs (seco)



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Dr B.C.Y. Freezailah **Malaysian delegation**

ITTO is a unique organisation in which producer and consumer member countries are equal partners, and civil society and trade and industry groups provide vital inputs. It is also a source of accurate and balanced information on tropical forests, about which there is often much exaggeration with emotional overtones. ITTO also provides assistance to producer members through project activities to promote and catalyse the care, protection and sustainable use of tropical forest resources.

It is therefore not surprising that the international community was most anxious to negotiate a successor agreement to the ITTA, 1994 to ensure that ITTO continues its good work. Though the recent negotiations were difficult, both producer and consumer countries showed much flexibility and goodwill to successfully conclude negotiations and adopt the ITTA, 2006. With such commitment, present members of ITTO may be expected to accede to the ITTA, 2006. I hope Malaysia will be one of the first to do so.

During the negotiations, certain proposals were advanced to make ITTO more green (eg change its name to the International Tropical Forest Organization), dilute its commodity focus (by merging the committees dealing with forest industries and market intelligence), and possibly slow its pace of work and activities (convene only one session of the Organization's governing body, the International Tropical Timber Council—ITTC—per year). Fortunately, most of these proposals were not adopted, but the fact that they emerged in the recent negotiations must be viewed as worrisome.

Currently the ITTC and its committees meet twice a year, normally in May and November. The November session is always held at headquarters in Yokohama, Japan, whilst the first session of the year is held in a producer member country. This is important in securing vital political support and commitment from producer member countries, apart from facilitating the wider dissemination of the ITTO message. Although members finance their participation at these meetings, logistical arrangements are funded from voluntary contributions, which may decrease under the new ITTA. ITTO will then be forced to meet only once a year, and only at its headquarters. This will no doubt lead to a serious loss in momentum; the Organization's response time will be increased from six to twelve months. More seriously, without any ITTC session in a producer country, ITTO and its message will become remote and diluted, which will lead to an erosion of political commitment and sense of urgency. It is because of this that producer countries responded with a special paper rationalising the need to maintain existing arrangements on the frequency and venue of ITTC and committee sessions. Hopefully, donors will come to the rescue.

In the ITTA, 2006, the basic administrative costs will continue to be shared equally between producer and consumer members. However, a new component has been created in the Administrative Account to finance core operational costs, which will be shared among members in the proportions of 20% for producers and 80% for consumers. Thus, under the ITTA, 2006, producers will contribute to costs (albeit only 20%) related to development work of the Organization that were previously met entirely by voluntary contributions. This must be noted as a major commitment on the part of producers.

As in the previous two agreements, the pursuit of sustainable forest management (SFM) continues to be at the heart of the ITTA, 2006. Both producers and consumers have responsibilities. Currently, voluntary financial resources to fund pre-projects, projects and activities are unpredictable, inadequate and declining, with contributions from only a few donors. Indeed, many approved projects cannot be implemented for lack of funds. Yet, during the negotiations, proposals were made to increase the scope of the new ITTA; indeed, the number of objectives has increased.

Thus, issues related to objectives and financial resources proved most problematic during the negotiations. The objectives, which fall mainly on the shoulders of producer members, and the financial resources, which consumer donor members are expected to contribute, must be linked to ensure the balance between the rights and responsibilities of producer and consumer members. To this end, producers argued that financial resources should be predictable, adequate and from a wider donor community. The indicative amount proposed was US\$200 million annually, which is only a fraction of what is estimated to be required to fund priority actions to promote SFM in the tropics. Eventually producers compromised, with text on '... the need for enhanced and predictable financial resources from a broad donor community to help achieve the objectives ...' in the preamble, and on '... mechanisms for the provision of new and additional resources with

a view to promoting the adequacy and predictability of funding ...' in the objectives, in addition to language in other articles urging adequate funding. In addition, a Thematic Programmes Sub-account was created in the Special Account to facilitate funding. Any mention of the amount of funds needed, even in an informal statement, was dropped in a spirit of compromise.

The effective implementation of the ITTA, 2006 requires the cooperative vigilance of civil society in a constructive engagement, as it does the positive contributions of the private sector. With ITTO's broad membership working hand-in-hand with civil society and the private sector, and with the support of its host city, Yokohama, and the host government, Japan, the ITTA, 2006 offers a ray of hope. Achieving Objective 2000 has been mission impossible, but hopefully with renewed commitment and actions under the ITTA, 2006 by all parties, ITTO will make it mission possible.

Dr Freezailah is a former executive director of ITTO and current chairman of the Malaysian Timber Certification Council and was part of the Malaysian delegation to the negotiations for a successor agreement to the ITTA, 1994.



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Enzo Barattini **Delegation of the European Commission**

Q1* In general terms the European Commission (EC) and the European Union (EU) member states are (and have been) strongly supportive of the ITTA, 1994. Consequently we participated in the renegotiation with the clear intention of achieving a positive result—although not at all costs, if the effect was to denature the spirit of the ITTA, 1994. Moves that could have led to this included, for example: abandoning the principle of linking the agreement to commodities or losing flexibility on finances; extending the coverage to forests other than tropical; or including forest services and other matters falling under the competencies of other organisations and institutions.

Before proposing that the EU participate in negotiations for a successor agreement, the EC undertook an independent external assessment of the ITTA, 1994. This highlighted the added value of EU participation in the Organization, evaluated the advantages and disadvantages of a new agreement, and identified the Organization's positive achievements alongside those areas in which positive results had not been achieved. This study also guided the EC in its preparation of guidelines for the negotiation. The member states were involved in this and the decision to renegotiate was taken unanimously.

Q4 In our opinion it is very important that the agreement now addresses—for the first time in an international pact—the question of strengthening the capacity of members to improve forest law enforcement and address illegal logging. It also encourages the support of SFM with due regard to local communities dependent on forests. Therefore, the new ITTA will be a more efficient instrument in alleviating poverty—given the importance of timber (and timber products) to many developing countries. Also for the first time, the new ITTA dictates that part of the Organization's financial resources are to be allocated for 'operational costs'. This will allow more efficient planning of the Organization's work program. I also appreciate improvements in the flexibility given to the executive director for decision-making. Finally, from a strictly EU point of view we also largely applaud the provisions of Article 36 (on 'signature, ratification, acceptance and approval').

Q5 The above improvements give additional weight to the new ITTA as an innovative instrument. If the International Tropical Timber Council (the Organization's governing body) is not paralysed by discussions on financial issues such as the resources to be allocated to 'operational costs' and the size of the administrative budget, and if members fulfill their financial commitments towards the administrative costs, the agreement will certainly operate in a better and more efficient way compared to the present. This consideration also includes the increased power afforded the executive director.

Q6 In general terms I can express my satisfaction with the outcomes of the negotiations. I note that the major purposes of the EC in this negotiation have been achieved, although I have to recognise that the financial issue was very critical (notably for those EU member states with little or no trade in tropical timber).

Q7 The Organization has to clarify its internal structure and may need to better allocate (or reallocate) existing human resources for the implementation of the new objectives and challenges. As said above, in better defining its operational costs the Organization and its members must avoid confrontation. We may also need to review the Organization's existing policies in order to ensure that they conform with the new rules.

Q8 I hope that all current members ratify the new agreement. Within the EU the process has already started with the translations of the text into all EU languages; the substantive discussions will take place in the second part of the current year. Personally, I believe that through the new financial framework we have given a satisfactory outcome to all members. It would be extremely detrimental to the goals of the Organization if members decided to remain outside, especially after the favourable specific conditions that have been introduced. I also hope that newcomers will join the ITTA 2006, although the costs quite often represent an insurmountable barrier.

Q9 After the failure of other major international discussions on forests, notably at the United Nations Forum on Forests, I consider the ITTA to be the sole instrument regulating trade in timber and addressing SFM and other important issues such as illegal logging. I can easily believe that this unique instrument will benefit from this privileged position for most of the next decade.

Enzo Barattini is at the European Commission's Directorate-General for Development.

**Numbers refer to the questions responded to by Daniel Birchmeier.*

Brazil gets new forest law

The country has adopted a law designed to promote responsible timber harvesting in national forests

THE BRAZILIAN federal parliament recently passed a law on the management of public forests that will have a significant impact on sustainable forest management (SFM) in the Amazon.

The law on the management of public forests for sustainable production (*Lei de gestão das florestas públicas para a produção sustentável*) was first put before parliament in February 2005 after a national process of debate and consultation (see *TFU* 13/3) and was approved by the Chamber of Deputies in July 2005. It was signed by Brazil's president, Luiz Inácio Lula Da Silva, in February this year.

The law sets out the approach to be taken in the allocation of timber concessions in public forests—those forests located on federal lands—for sustainable production involving the private sector, communities and other potential stakeholders. It also creates the *Serviço Florestal Brasileiro* (Brazilian Forest Service—BFS), which will be responsible for the implementation of the law, and a National Forest Development Fund (*Fundo Nacional de Desenvolvimento Florestal*).

The enactment of the new law has been hailed by many commentators ... as an important step in addressing illegal logging and deforestation in the Amazon.

Under the law, forest concessions will be allocated through a bidding process conducted in accordance with a separate law (promulgated in 1993) on the procurement of goods and services (Law 8.666/93). Communities and non-governmental organisations (NGOs) might be favoured by this process above private-sector companies, because Law 8.666/93 exempts non-profit organisations from normal bidding procedures and other requirements. In accordance with Article 26 of the new forest law, concession fees will be set on a case-by-case basis and will take into consideration the characteristics of the forest, its location and other aspects. Under the new law, 20% of all revenue from land-use will go to the BFS and the Brazilian Institute of Environment and Renewable Resources (IBAMA).

Transparency

Transparency in the process will be provided under Law 8.666/93 and also by the new law. Bidding documents will be available to interested parties, and all other documents of the process will be posted on the internet.

The new law addresses the safeguarding of environmental, social and economic values in some detail. Under Article 26, bids will be judged on price, but only after they demonstrate that operations will cause the least environmental impact and the largest generation of direct social benefits, will be efficient, and will add most value to products and environmental services in the concession area. The bidding document will outline all the required criteria for environmental, financial, economic and social evaluations.

Will the system encourage SFM?

The enactment of the new law has been hailed by many commentators, including from within the environmental NGO community, as an important step in addressing illegal logging and deforestation in the Amazon. Suspicion remains among some about concession systems in general, but the transparency and comprehensiveness of the Brazilian model—addressing legal, environmental and social issues—should counter many of the problems experienced by such systems in the past.

More than 80% of the forested land in the Amazon belongs to government—including Indian reserves, national parks, national forests (FLONAs), extractivist reserves, biological reserves and other categories of protected areas—but to date there has been little attempt to implement SFM on these lands (see page 8 for a rare example). Although the total area of land that will be affected by the law in the short to medium term is likely to be quite small (in the order of 1–3 million hectares), observers say that legalising the economic use of federal forest lands for the production of timber and non-timber products will facilitate the development of forest industry, increase employment and revenues, and generally improve conditions for local communities. At the moment, most illegal occupation is on federal land. Forests under concessions will be better protected from invasion and clearance for agriculture—the main cause of deforestation in the Amazon.

The success of the new law will depend very much on the capacity of the BFS and IBAMA to enforce it. It will take time and investment to develop the necessary expertise within the BFS; its efficiency, and its independence from political influence, will be key factors in the widespread adoption of SFM on Brazil's federal lands.

This article was compiled by Ivan Tomaselli and Alastair Sarre.

Model forest certified in the Amazon

A forest administered by the government of Acre, a small Brazilian state in the western Amazon, was certified recently by SmartWood, a program of the Rainforest Alliance accredited by the Forest Stewardship Council. The 65 000-hectare Antimary State Forest (*Floresta Estadual do Antimary*), which is administered by the Technical Foundation of Acre State (*Fundação de Tecnologia do Estado do Acre*), has been the subject of a long-running ITTO project (PD 94/90 Rev.3 (I)). In 2003, about 17 000 m³ were harvested from an area of about 2200 hectares; annual production is expected to increase to about 52 000 m³ in the longer term. According to the certificate, the forest is "a well-managed source of wood products whose forest management practices adhere to strict environmental and socioeconomic standards in accordance with the principles and criteria of the Forest Stewardship Council". The Antimary State Forest is the first public forest certified in the Amazon.

The logging of Tapajós

Reduced impact logging is being applied in one of Brazil's national forests

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IN THE 1970s, Brazil's military government had a policy of encouraging the occupation of the Amazon. Roads were built to facilitate immigration, and settlers were allowed to take up lots on both sides of these roads. A few conservation units were also established; one of these was the 600 000-hectare Tapajós National Forest (FLONA), located in the Santarém region of Pará state about 3° south of the equator.

FLONAs are conservation units covered by natural forest that are designated for the rational use of forest resources, including timber, under a regime of sustainable management. Large-scale logging had not been attempted in Tapajós or any other tropical-forest FLONA until, in 1992, an ITTO project (PD 68/89 REV.1 (F)) commenced with the aim of testing sustainable forest management (SFM) in Tapajós in accordance with Brazilian forestry legislation and an environmental impact assessment. A management plan for the forest was devised and a pilot area selected for logging using reduced impact logging (RIL) techniques. This article describes some of the results and lessons learned; a second article (page 10) describes the impacts of the project on communities living in or near the Tapajós FLONA.

From 2001, as RIL training was intensified and logging operations were more closely supervised by qualified technicians, logging standards began to approach those expected of RIL.

Annual production units

The purpose of the project, which was implemented by IBAMA (a national government agency), was to develop a realistic RIL harvesting experience in a large tropical FLONA. It focused on a 3222-hectare area of forest within a larger, 136 000-hectare area designated for logging within Tapajós. The area was further subdivided into five annual production units (known as AMFs) of about 600 hectares each, and 38 working units, most of which were about 100 hectares in size. Logging commenced in 1999; the total volume extracted from the five annual production units in the period 1999–2003 was 63 392 m³ (averaging 6.4 m³/tree and 20.25 m³/hectare). Training in RIL was provided progressively between 1999 and 2003; accordingly, post-harvesting surveys should be able to detect any improvement in practices over the period.



Preparation: workers receive training in forest operations in the Tapajós National Forest.

Logging standards

RIL is the improvement of conventional logging based on the planning of the activities to be carried out, the training and qualification of workers, and the adoption of new techniques and technologies suited to the characteristics of the forest (Pereira Jr 2004). In comparison to conventional exploitation it aims to reduce damage to residual forests, maintain water quality, minimise the risk of forest fires and protect biological diversity. The annual operational plans (POAs) drawn up for the annual operating areas in Tapajós prescribed forest management aimed at mitigating the environmental impacts of logging.

Management planning was based on 100% inventories, which determined the timber stock and mapped the forest. The infrastructure of the management area, including the main and feeder access roads, bridges, storage yards, skid trails and camping areas were all planned and built according to RIL standards, and conservation areas—particularly around rivers, streams and other water bodies—were designated.

Assessment

The management operations and forest harvesting practices were assessed recently using data collected from the AMFs, interviews, literature reviews and the project's archives at the IBAMA head office in Santarém. ITTO's criteria and indicators for the sustainable management of natural tropical forests were used to assess the quality of the operations and their conformity or otherwise with SFM. The collected data were also used to assess the compliance of the management regime with the requirements specified in the environmental impact assessment.

Post-logging data were collected in all five AMFs; in each, one work unit was selected at random and, in that, one feeder road was chosen, along which all log yards were assessed. From the yards, a skid-trail was chosen at random, along which stumps were located and felling practices assessed.

On the feeder roads, in the log yards and along the skid trails, data were collected on: width and length of tracks, canopy opening/closing, soil exposure, damage to lateral vegetation, and natural regeneration. The assessment of the felling was conducted by observing the types of cutting and felling techniques used.

According to Johns et al. (1998), if trees are felled correctly they create smaller openings in the canopy and damage fewer trees compared to 'conventional' techniques; moreover, damage to the soil associated with the manoeuvring of machines in the skid trails is four times greater in a non-planned operation than under RIL. Holmes et al. (2002) reported that in a RIL operation less than 10% of skid trails show exposed soil.

In 1999 and 2000, harvesting in Tapajós exhibited characteristics of conventional activity, especially in such activities as the building of roads and yards, and the felling and skidding of logs. From 2001, as RIL training was intensified and logging operations were more closely supervised by qualified technicians, logging standards began to approach those expected of RIL.

The evaluation also showed that permanent conservation areas were respected and preserved and buffer strips along watercourses were maintained. Hunting by logging crews was also strictly prohibited.

Thus, the pilot logging can be deemed a success, environmentally at least. But is it sustainable? Tapajós was not empty when it was created, and is even less so now. Critical to the long-term success of the Tapajós operation as a sustainable development activity is the relationship between it and the communities that live in or near the forest. The next article deals with this issue in more detail.

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Showing the way: workers watch a demonstration on directional felling, a component of RIL, in the Tapajós National Forest.

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Measured approach: a researcher assesses the recovery of a logging track after harvesting.

The people of Tapajós

Local communities in the Tapajós National Forest are positive about logging but should be more involved in both management and the sharing of benefits

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THE ITTO PROJECT (PD 68/89 REV.1(F)) carried out in the Tapajós FLONA (see article page 8) was the first experiment in sustainable production forestry in a tropical FLONA. What social and economic impacts has it had? In 2004 we conducted an independent assessment, and present our findings here.

Not empty

When the Tapajós FLONA was created, no attention was paid to the fact that parts of it were occupied, particularly along the Tapajós River. The problem was made worse by the fact that the new FLONA was so close to the new road (BR163), along which a separate agency, the National Institute for Settlement and Agrarian Reform (*Instituto Nacional de Colonização e Reforma Agrária*—INCRA), was encouraging settlement.

Early attempts to expel ‘intruders’ from the Tapajós forest were unsuccessful. Indeed, conflicts started to come to an end only in 1994, when a federal decree opened the way for traditional populations to live legally inside the borders of the FLONA.

Today, the Tapajós FLONA is home to 25 communities, 20 on the eastern banks of the Tapajós River and five on the western shoulders of BR163. In 2003, these communities comprised approximately 876 families (5012 individuals). The municipality of Aveiro also exists partly inside the limits of the Tapajós FLONA: it sprawls over both sides of the Tapajós River; one side is part of the FLONA and comprises about 5000 residents, and the other, not part of the FLONA, amounts to about 15 000 residents.

Most of the interviewed workers said their welfare increased while working for the ITTO project and that the salary earned was used to buy durable products

One of the five communities living in the Tapajós FLONA is made up of *colonos*; it developed as a result of INCRA or Land Institute of Pará (*Instituto de Terras do Pará*—ITERPA) settlement projects close to BR163. The other communities along the Tapajós River are known as *ribeirinhos*, who use land differently to the *colonos*. *Ribeirinhos* base their livelihoods mainly on subsistence crops (such as rice, beans, corn, cassava and pumpkins) complemented by hunting, fishing and poultry. *Colonos* use parcels of land varying in size from a quarter of a hectare to 170 hectares for the

production of such products as pepper, coffee and cattle destined for local, national and even international markets, just like most settlers living outside the FLONA.

Only two communities, in the northern part of the FLONA, have good all-weather road access to the municipality of Belterra. Native rubber products, fruits like *cupuaçu*, and *andiroba* oil are of economic importance for these two communities. Other *ribeirinho* communities engage in less commercial activity and use the river for access to local markets and cities in the region.

The *ribeirinho* communities have still not fully demarcated their zones of influence. Two have claimed rights over one lake, and three of them want to be acknowledged as Indians of the *Munducuru* tribe; as Indians they are also claiming the right to expand the limits of their communities. The Brazilian governmental agency for Indian affairs, the Indian National Foundation (FUNAI), has already recognised these tribes and designated a working group to demarcate their lands. The demarcation could result in the excising of their areas from the FLONA, which carries the risk of disrupting the cultural and social equilibrium among the communities.

Economic benefits of the ITTO project

The company contracted by IBAMA to harvest the timber from Tapajós, Agropecuária Treviso Ltda, sold its logs exclusively to Cemex (*Comercial Madeiras Exportação SA*—Commercial Timber Exports). During the three first years of the project, Agropecuária Treviso was solely responsible for field operations, but in 2002 it outsourced the development of forest management plans to MAFLOPS (*Manejo Florestal e Prestação de Serviços*—Forest Management and Services). A specific price was paid by Cemex to MAFLOPS for its services. Cemex also assumed the payment of all taxes, fees to IBAMA and freight costs.

According to representatives of both Cemex and Treviso, the amount paid for the services delivered by Treviso were those given in Table 1.

Even using conservative estimates (top wages for field workers and bottom prices for harvested logs), Rodriguez and Bacha (2004) estimated that Cemex/Treviso received an internal rate of return of 36% for their RIL operation in Tapajós.

IBAMA also obtained direct returns, in the form of cash, from the fees it charged. Fees and taxes paid by the contractor (estimated to be some US\$298 000) were close to 20% of the amount IBAMA spent on the project (much of it from ITTO and the UK Department for International Development—DFID). However, these revenues were not internalised by the local IBAMA office in Santarém or the communities in the FLONA. Therefore, the ITTO project was profitable to Cemex

Costs to mill gate

Table 1: Cost of logs transported to the Cemex sawmill

Year	Fees paid by CEMEX (US\$/m ³)			TOTAL
	To Treviso for the logs	To IBAMA	Freight	
2002	10.83	4.00	6.67	21.50
2003	15.00	5.00	8.67	28.67
2004	20.83	6.00	9.17	36.00

Exchange rate: R\$3 = US\$1

and Treviso but was subsidised quite heavily by the project and little if any cash windfall accrued locally.

Impacts on jobs, income and welfare

Data on local-level impacts were collected through interviews with local stakeholders, conducted in May and June 2004, and an analysis of documents provided by Treviso and Cemex. The project employed 42–51 local workers per month. Some 43 jobs were offered during the last year of the project: one forest engineer, one forest technician, one accountant, three loader operators, one tractor operator, two skidder operators, one cook, one cooking assistant, one mechanic, one tire specialist, eight chainsaw operators, eight chainsaw assistants, four skidding planners and assistants, eight log-landing inventory keepers, and two security guards. At the start of the project all hired workers were non-locals, but by the end about 60% were from the local communities. The local workforce tended to occupy low- and medium-qualified positions, such as chainsaw operation, cooking, tree identification, mechanics, log-landing accounting and other supporting roles. Most of the local workers that joined the ITTO project lived in communities that were crossed by dirt roads easily negotiated in non-rainy seasons (São Domingos, Maguari, Acaratinga, Pedreira, São Jorge, Santa Clara, Nossa Senhora do Nazaré e Nova Vida), which created a bias against communities with poorer access.

Wages and working rights

The wage officially paid was the minimum salary for less-qualified workers and twice the minimum salary for the mechanics, although most of them ended up receiving a little more because they worked extra hours. Payments were sometimes delayed, but all interviewees affirmed that Treviso honoured all contractual working clauses, and all workers were hired legally.

Working conditions

No interviewees had complaints about lodging, food or transport. Treviso provided reasonably adequate lodging facilities in the working area, and food was prepared by a cook and an assistant. Extended working periods were very common; usually twelve straight days followed by two days of rest (usually a Saturday and Sunday), but also 25 consecutive work-days followed by five rest days; Sunday afternoons were always reserved for rest in both these systems. All hours beyond the eight hours of daily work were considered extra hours and, according to interviewees, were paid correctly by Treviso.

Most of the interviewed workers said their welfare increased while working for the ITTO project and that the salary earned was used to buy durable products like ovens, bicycles, beds and closets, and non-durable consumables such as clothes, shoes and food. However, the project did not alter the basic lifestyles of most workers, except in two

cases where a small meat business and an 'eco-leather' craft manufacturing enterprise (wallets, purses and backpacks, etc, made out of rubber and latex) were established by ex-workers. All interviewed ex-workers declared they would take a similar job again in future logging operations in the FLONA. Other local workers, who had not worked on the project, said they would take a job in logging operations in the FLONA given what they perceived as improvements in the welfare of those who did get involved.

Non-monetary benefits

All interviewed ITTO project ex-workers claimed they had learned new skills, especially RIL techniques. Some—such as tree identifiers, tree-fellers, skidding planners, and loading-site inventory controllers—considered they had learned a new profession. In addition, Treviso widened and improved local dirt roads that connect BR163 with the Pedreira and Piquiatuba communities.

A negative direct impact

Members of the Piquiatuba community, the closest community to the project, alluded to diminished hunting opportunities (jaguars, deer and tapirs) as one of the main problems introduced by the logging operations.

Future projects in Tapajós or other FLONAs should ... make a greater effort to really involve the local communities as forest keepers and should include mechanisms for transferring greater direct and indirect benefits to them.

Conclusion

The operation turned out to be profitable for the contractor, allowing it to comply with all legal obligations regarding fees, workers' entitlements and logging standards. It contributed to the general welfare of workers living in the communities in the Tapajós FLONA.

The opportunities provided by the logging project in Tapajós created favourable perceptions in the local communities because alternative good local job opportunities are almost non-existent. Future projects in Tapajós or other FLONAs should, however, make a greater effort to really involve the local communities as forest keepers and should include mechanisms for transferring greater direct and indirect benefits to them. These efforts could include the continuation of training programs and direct community control over part of the revenues generated by the royalties and fees received by IBAMA.

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Supplying France with value-added

France is open to new tropical timber species. But producers need to get organised

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THE FRENCH timber market has an adaptable taste. In less than a generation it has had six different number-one tropical joinery species: African sipo, Philippine lauan, Malaysian and Indonesian dark red meranti, Malaysian white seraya, Brazilian curupixa and, now, Brazilian tauari.

The market is open to new species and products—including the so-called lesser-known species of the tropics—but certain conditions apply. The most important of these are regularity of delivered volume of supply, product quality, specification and appearance, and a competitive price relative to alternatives.

It is clear that the French market is significant for tropical timber producers and one that, if nurtured, could even increase in importance. But it will not look after itself: producers who wish to sell their lesser-known species have work to do.

New homebuilding and home renovation are the main drivers of demand for construction materials, including wood, and France is enjoying its highest level of home construction activity in more than 20 years.

Recognising this, in mid 2005 ITTO commissioned a study of the French timber market. A report was subsequently produced by the authors and presented to the International Tropical Timber Council in November 2005. This article is based on that report. It gives a brief overview of the market and presents a series of recommendations by which ITTO and producers could maintain and increase tropical timber's share of the French timber market.

The French market

New homebuilding and home renovation are the main drivers of demand for construction materials, including wood, and France is enjoying its highest level of home construction activity in more than 20 years. New housing permits issued in the first seven months of 2005 were up 13% on the same period in 2004. Historically low mortgage rates have helped fuel demand for new housing and have also provided a boost to the home renovation sector.

Tropical hardwood is a major beneficiary of this strong demand, but it is not without competition. Nordic softwood imports are performing strongly; major Nordic producers have their own terminals in French ports with their own stocks, marketing staff and distribution systems, driving up



Decked out: Every year in June, hundreds of truckloads of sand are brought into the heart of Paris to create "Paris Plage"—the beach of Paris, along the Seine River, to the delight of young and old—and to the benefit of sellers of tropical timber decking. *Photo: O. Pedersen*

their market share across the board in all profitable market segments.

Trends in the tropical timber trade

Sawn softwood imports increased by 50% in volume terms between 1973 and 2003, veneer sheet imports—mainly tropical—almost doubled, and plywood increased slightly. Imports of tropical sawnwood also increased slightly, whereas the import of tropical industrial roundwood decreased by 80%.

In volume terms, the market share of tropical timber decreased during the period as the availability of traditional, popular species declined. Contributing to the decrease, tropical timber prices generally rose strongly, while Nordic softwood prices have declined over the last decade.

In value terms, however, countries exporting tropical timber, particularly when counting China (which exported significant volumes of tropical timber in the period) in that category, overall did better than maintain their market share in the 30 years between 1973 and 2003. Imports of furniture and other secondary processed wood products from tropical countries more than compensated for the reduced value of roundwood imports. Some €500 million worth of furniture containing tropical timber is now imported into France each year.

The cost of transport—the single biggest element of cost for many wood products—has increased dramatically over the last few years; in certain cases, international freight rates have doubled. This has contributed to the ability of the tropical timber industry to manufacture downstream products and its interest in doing so: it is far more cost-effective to transport 1 m³ of dowelling than 3 m³ of roundwood.

France's forest and wood industry

The French forest estate has expanded over the last 150 years from 8 million to 16 million hectares. The standing wood volume amounts to about 2 billion m³, of which 60% is hardwood and 40% softwood. Annual incremental growth totals 90 million m³, only two-thirds of which is harvested. Thus, France's standing wood volume continues to increase.

Despite the apparent overabundance of local raw material, however, many sectors of the French forest and downstream industries are suffering a serious lack of profitability. Factories have closed and as many as one-third of related jobs lost. The balance of the wood products' trade is seriously deteriorating: imports (of all timber) are up, exports are down, and the annual deficit is at an all-time high of €3.4 billion; €1 billion of this is attributable to furniture imports and €1 billion to woodwork including sawnwood.

This trend is similar to that in most other high-cost West European countries. France exports high-quality oak logs to China and imports the same wood as finished furniture. Tropical timber producers are among the beneficiaries of this, increasing their sales of value-added products.

France is the only remaining European country with a tropical-hardwood-based plywood industry of any consequence. That situation is changing, however, because French plywood manufacturers are setting up peeling factories in Africa (mainly Gabon). Currently, veneer imports into France are growing strongly and plywood slowly. The French CTBX (*Centre Technique du Bois Exterior Grade*) standard required for all construction plywood represents a non-tariff barrier.

End-use of tropical timber

The vast majority of tropical timber imported into France is used in home construction and home renovation. Builders' joinery represents some 80% of end-use and the remaining 20% of solid tropical timber is used for mouldings, parquet and truckdecks, decking and a range of marine products, etc.

Environmental concerns

Until a few years ago, public awareness of environmental concerns was lower in France and other Latin countries than in northern Europe. But NGOs are now very active in France.

The government has issued a decree establishing guidelines for the public procurement of wood. The objective is to progressively increase the share of wood from producers who are able to demonstrate legal origin and are committed to sustainable forest management from a minimum of 50% by 2007 to 100% by 2010. The decree refers to all wood from all sources.

France also participates in the European Union's forest law enforcement, governance and trade action program, particularly in its role as coordinator for countries in the Congo Basin.

The timber industry and trade prefer that forest certification is not monopolised by a single organisation. Some support the Programme for the Endorsement of Forest Certification Schemes and some the Forest Stewardship Council, but there is general agreement that several schemes must be allowed to compete. Indeed, the wood trade and industry fraternity is unanimous in calling urgently for mutual recognition of all the different schemes.

Promotion

The National Committee for Wood Development (CNDB) is working with trade and industry actors to promote wood. *J'aime le bois* ('I love wood') ran for a decade. That campaign was succeeded first by *Le bois avance* ('wood is advancing') and then by *Le bois—c'est essentiel* ('wood—it's essential'). Television spots on popular channels, advertising in popular magazines, and posters all remind the public that using wood is an ecologically sound act, and that wood is one of the very few renewable building materials. All wood benefits from these campaigns.

The objective is to progressively increase the share of wood from producers who are able to demonstrate legal origin and are committed to sustainable forest management from a minimum of 50% by 2007 to 100% by 2010.

Factors affecting competitiveness

Many ITTO tropical timber producers are battling constraints that have less effect on their counterparts working with softwood and temperate hardwoods. These include distance to market, the high cost of transport, climatic and other factors that hamper logistics, a lack of visibility and investment, and the difficulty and cost of certification.

Fortunately, the inherent natural characteristics of the popular tropical timber species are excellent for a number of end-uses such as parquet, joinery, outdoor decking and other outdoor applications. Many tropical species are available in attractive specifications of high export quality. The durability, stability, workability and attractiveness of many tropical species are superior to those of most competing timbers and other materials.

The possibilities for tropical timber

In this setting, what can tropical timber producers do to capitalise on the opportunities presented by a healthy French economy? We make a number of recommendations that industry and trade associations might wish to consider, including the following four general points as well as recommendations for popular and lesser-known species.

- 1) **Participate in work to promote simpler and clearer nomenclature:** this will assist in creating better access to the plywood market, among others.
- 2) **Respect the standards:** producers should work to meet all standards that apply to timber imports. There are several in the European Union.



Tropical logs in France: a popular material for decking.
Photo courtesy Indubois SA

- 3) **Give full attention to environmental concerns and pursue certification.**
- 4) **Aim to supply high-quality finished and semi-finished products:** wood-based furniture represents the biggest item by value of tropical timber imports, and semi-finished products are also increasingly important. The reduced cost of transport (per unit value) is only one of the advantages of downstream processing for export.

Popular species

Each of the tropical timber species prominent in the French timber market owes its popularity to its inherent technical and aesthetic characteristics. Producers should take full advantage of these qualities in their marketing efforts.

***Recommendation:** employ each species for the purposes/final products for which it is best suited and most appreciated. Listen to the market and deliver quality products that satisfy the client's real needs. This is true for all products: industrial roundwood, sawnwood, veneer, plywood, joinery, mouldings, parquet, decking, furniture and other processed wood products.*

Lesser-known species

In most cases, lesser-known species are simply lesser popular, or secondary, for a number of technical and/or aesthetic reasons related to workability, drying, stability, finishing, durability and appearance, etc. These species fetch low delivered prices when they are sold on the world market either as industrial roundwood or in the form of primary processed products (ie sawnwood or veneer). They compete (often poorly) with a host of other species of tropical and temperate hard- and softwoods, as well as against other building/decorative materials.

With rising energy costs, transportation absorbs much of the value. The producer is left with very low profitability ex-lyard or ex-mill for such species.

Other lesser-known species are not popular because the available volume is low. This often poses a problem for the producer/manufacturer in the country of origin: the volume of fresh logs is insufficient to make a production run in the sawmill, it is difficult to ensure proper kiln-drying, and there is insufficient volume to make a production run in the moulding factory.

However, a number of the lesser-known species can profitably be made into plywood, furniture and other secondary processed wood products. Provided that the producer manufactures them into finished products that satisfy the client's technical and aesthetic requirements, the client is not concerned about the species used, or even if more than one species is used.

***Recommendation:** producers should aim to process lesser-known species into finished/semi-finished wood products such as plywood, furniture, joinery, mouldings, decking and other processed wood products prior to export—grouping species if necessary. Seen with the user's eyes, the species from which a sheet of plywood or a piece of furniture is made is unimportant—as long as the product is serviceable and satisfies the intended use. The same is true of mouldings, for certain end-uses, and a number of other secondary processed wood products.*

In some cases, species have technical and/or aesthetic characteristics which are highly attractive to the market, but they are only available in modest quantities.

***Recommendation:** producers in the same region should work together to group similar, low-volume but high-value species to ensure economically viable production runs. Heavy hardwoods suitable for decking are a good example of this kind of opportunity.*

The full report on the French timber market can be downloaded at <http://www.itto.or.jp/live/PageDisplayHandler?pageId=203>.

The numbers game in Gabon

A series of ITTO projects have helped strengthen forest statistics in Gabon, but the full implementation of a national system requires more support from government

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GOOD management of an economy requires, first and foremost, a good information base. This holds true in the forest sector: a thorough knowledge of the structure of the national forest sector is essential for managing the timber production and processing economy.

It is imperative that all the stakeholders understand this, whether they are administrators or operators. Only a thorough understanding of the market situation can enable the accurate forecasting of trends, on which a whole range of governmental and private-sector decisions must be based. For government, good information allows the rational and efficient determination of revenues from taxes and their differentiation according to product categories, as well as the strategic development of infrastructure. Industrialists and private operators can direct their investments towards those fields that will best allow the development of local potential.

The exchange of views organised between neighbouring countries could breed success, and each country could avoid a repetition of failures and difficulties.

Knowledge depends on the availability of reliable data on production and the marketplace, although information in this field can never be perfect. Some forest-sector statistics—in fact the majority of them—are drawn from operators' reports and can therefore be distorted by those who may have an interest in under- or over-declaring numbers, or sometimes in not declaring them at all. That apart, even comprehending the full scale of certain activities can prove to be a long, difficult, expensive and sometimes illusory process. Thus, statistics must inevitably be a compromise between reliability and timeliness, because economic choices must often be made with relatively little notice.

ITTO's conceptual support

Knowing the importance of statistics, ITTO has undertaken a process to support tropical timber-producing countries in improving their systems of forest and timber data collection. Many producer countries have received substantial assistance from ITTO since the early 1990s for the development of computer-based statistical systems. Parallel to these national projects, regional initiatives have been training forest personnel involved in the collection and processing of statistical information on forests and timber. These efforts have resulted in a significant improvement in



Statistical outlier? On-site data collection can be hazardous. Photo: Irina Kouplevatskaya

the quality of the information obtained and, in turn, have led to increased rigour in data processing. They have also improved the reliability of subsequent economic analyses that are used for, among other things, ITTO's *Annual Review and Assessment of the World Timber Situation*.

However, statistical capacity still needs to be strengthened in many countries, even in places where significant improvement has been brought about by ITTO projects. One such case is Gabon, where an ITTO project (PD 56/00 REV.3 (M)) was completed recently and evaluated in 2005. This article summarises the findings of the ex-post evaluation and makes some recommendations for the future.

The sequence of improvement

ITTO has supported a long-running process in Gabon designed to improve the collection and processing of statistics on forests and timber. It began in 1994 with ITTO PROJECT PD 36/92 (M), the objective of which was the computerisation of timber-processing data collected manually at the level of inspectorates governed by the Directorate General of Water and Forests (*Direction G n rale des Eaux et For ts*), and has continued in four successive phases.

One of the initial project's achievements was the establishment of a statistics department responsible for the publication of a statistical yearbook on forests and timber. The often considerable time taken by the inspectorates to communicate data, as well as the risk of repeating errors during data collection and processing—which were still carried out manually—led to the setting up of a second phase (ITTO PROJECT PD 29/96 REV.1 (M)). From 1997 to 1998, this project contributed to the full computerisation of data processing on timber harvesting at the level of each Water and Forests inspectorate. To that effect, it created a data-processing module called STATFOR. An ex-post evaluation carried out in



Photo: Irina Kouplevatskaya

1999 confirmed the validity of this approach but drew attention to the need for the system to be made operational throughout the country as soon as possible.

The third phase of the process (ITTO PROJECT PD 15/98 REV.2(M)), which took place in 2000–2001, continued the work of computerising data collection, including at the level of the harvesting site. An experimental system called EXFOR was developed to make it possible both to replace a paper-based approach with electronic notebooks (hand-held computers) and to track the products by means of bar codes.

The fourth phase of Gabon's forest statistics development (ITTO PROJECT PD 56/00 REV.3 (M)) took place in 2002 and 2003. The tasks were to adapt the EXFOR module to a Windows operating system and to design data-processing modules for upstream management (INVFOR for management inventories) and downstream for exports (COMFOR on timber flows in lumberyards); this would allow the tracking of logs entering the international market and facilitate labelling under certification schemes.

With a fifth phase of the process due to begin in 2006 (ITTO PROJECT PD 182/03 (M)), the sequence of improvement will be completed. By the end of this project, Gabon will have a fully computerised system for the collection and processing of data on the activities of its primary timber industry, activated in several pilot regions/concessions. It should then be possible to know precisely and with a reduced risk of error all the elements characterising the flow of wood products within the sector. The Gabonese experience constitutes a model applicable elsewhere, particularly in other Congo Basin countries; a good starting point for other countries would be Gabon's third phase, which set out to leap-frog technology in field-data collection.

Difficulties in nationwide implementation

The series of projects implemented in Gabon has seen the introduction of a sophisticated data-processing system in various parts of the country. Nationally, however, there has been little change, with most data collection and processing still carried out as per the practice at the beginning of the 1990s. In fact, the development of the computer modules has been gradually disconnected from the issue of their national application. Powerful data-processing tools are available, which should allow the effective improvement of statistics, but the mechanisms for large-scale application are not yet ready. This disconnection between the model approach and reality can be attributed in large part to issues of organisational management that are not unique to Gabon: the transfer of personnel trained in statistics to different departments, and administrative re-organisations that change the methods for monitoring statistics. Moreover, the funding requirements of some tasks related to statistics (eg publication of the yearbook, procurement of computer

hardware, etc) are not easily met by the national budget. This results in a situation where decision-makers do not benefit from the improved statistical information that should normally be derived from the model approach.

Conditions for effective improvement

Clearly, the successful development of a functioning model of data collection and processing techniques is not sufficient in itself; it must be accompanied by measures for its large-scale implementation. Some of the conditions that must be met if the type of activities ITTO has funded in Gabon are to translate into a comprehensive national system within the national forestry administration include the following:

- initially, as a matter of priority, there must exist at the national level a clear strategy aimed at improving statistics, whether or not it is integrated into the national forestry program. This strategy should be perceived by the country as an approach to ownership of the project results. It must clearly define national objectives to be achieved within a given time-frame, identify those departments responsible for optimising the financial and human capacities available, and institute a transparent system for monitoring and evaluating national inputs;
- the setting up of an international system of training in statistics, together with ongoing evaluation, would speed up the dissemination of lessons learned by each country in a region where similar conditions prevail. The exchange of views organised between neighbouring countries could breed success, and each country could avoid a repetition of failures and difficulties. The joint training of personnel in charge of statistics in countries in the same region would also benefit from being interlinked with the regional evaluation process and thereby be more focused on practical needs; and
- the linkage of the outputs of the statistical system with enhanced abilities to levy and collect forest rents would generate more support for the system from outside the forest sector/administration (eg in finance departments).

These conditions, which imply both a country's commitment and the support of the international community, would help to remedy the difficulties encountered with the large-scale achievement of forest-statistics-related objectives. They are to be made explicit in ITTO PROJECT PD 182/03 (M), the fifth and last phase of the process designed to improve forest and timber statistics in Gabon. If this project leads to the country-wide adoption of the suite of data collection and processing modules developed to date, it will be a significant step forward for both Gabon and many of its neighbours, most of whom are at earlier stages of statistical development.

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Is teak improving?

A study finds that some basic work is being done in Asia to improve teak growing stock, but not yet at a scale to impact timber production

by
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TEAK (*Tectona grandis*) is an increasingly important plantation species in the tropics. It is being grown in at least 36 countries across the three tropical regions and constitutes an estimated 75% of the world's high-quality tropical hardwood plantations (Bhat & Ma 2004). Much has been done to improve the seed-stock of teak since it was first planted in the mid 1800s; several publications (eg Ball et al. 2000) summarise trends and accomplishments in tree improvement among the major teak producers. However, in some producing countries, major policy changes in the late 1980s and the 1990s—such as logging bans and the restructuring of forestry departments—have affected improvement programs and their status has sometimes been obscured.

In the past decade, regional and global initiatives (such as Teaknet, based in Myanmar) have been launched to promote integrated and efficient approaches to (among other things) teak improvement. Several projects have commenced—funded by ITTO, among others—to initiate or expand improvement programs. At an international conference on teak in late 2003, a wide range of stakeholders issued a statement called the Kerala Call for Action, which urged governments, funding agencies, investors and others to, among other things, evaluate and document the present condition of the teak crop/resource and critically appraise the technology in use in the context of new developments in research.

This study was undertaken by Japan's Forest Tree Breeding Center (FTBC) to consolidate information on teak improvement programs in major producing countries and regions, with the aim of strengthening teak development networks.

Methodology

A series of consultations was conducted between the authors and relevant international organisations in order to better understand the global picture and recent trends in teak improvement. Information obtained from ITTO, the Center for International Forestry Research and the Regional Office for Asia and the Pacific of the Food and Agriculture Organization of the United Nations (RAP/FAO) revealed that



Seed sources: a teak seed production area in Myanmar. Photo: H. Nakata

Thailand, Myanmar and the Indian state of Kerala are the keys because of their existing natural and planted teak forests and their historical timber production. Improvement programs in other regions are of secondary importance because they are mostly relatively recent and based on stock introduced from one of the source regions (although there is some debate over whether the teak forests on the island of Java in Indonesia are derived from natural or imported stock). Thus, the focus of this study was on activities in Thailand, Myanmar and Kerala.

Significant changes in teak improvement work have taken place over the last ten years due to institutional restructuring and major policy changes. Given the dynamic situation, available publications did not sufficiently reflect such changes. Visits were made to Thailand, Myanmar and Kerala in September 2005 to ensure that the most up-to-date information was used in the study; priority was given to Myanmar, for which it was more difficult to obtain recent information by electronic means.

The essential elements for assessing the current status of teak improvement were:

- institutional arrangements and policy/plans for teak plantation development and improvement;
- existing teak resources;
- improvement efforts; and
- propagation and production of improved materials.

These formed the basic parameters of the study.

Progress in teak improvement

Table 1 summarises the major indicators relevant to tree improvement as of 2005 in Thailand, Myanmar and Kerala based on the data collected by this study. Table 2 shows the progress in improvement activities to date.

Keyword

Plus-tree

A phenotype (ie individual tree) judged (but not proved by test) to be unusually superior in some quality or quantity, eg exceptional growth rate, desirable growth habit, high wood density, exceptional apparent resistance to disease and insect attack or to other adverse environmental factors.

Source: Nieuwenhuis, M. 2000. Terminology of Forest Management. IUFRO, Vienna, Austria

Teak improvement

Table 1: Status of the major indicators of teak improvement, 2005

		THAILAND	MYANMAR	KERALA	
INSTITUTIONS AND POLICY/PLANNING					
Relevant organisations in teak plantation development	Public sector	Department(s)	National park/Forestry	Forest	
		Enterprise(s)	Forest Industry Organisation (FIO)	Myanmar Timber Enterprise (MTE)	
		Research institute(s)	Teak Improvement Centre (TIC)	Forest Research Institute (FRI)	Kerala Forest Research Institute (KFRI)
		University(ies)	Many	Myanmar Forestry University	Many
	Private sector	Private companies	Many	None	Many
		Local communities	Negligible	Negligible (?)	Yes
	Dominant executing agency		FIO	Forest Department	Forest Department
	Executing agency of improvement activities		TIC	FRI	KFRI
Human resources	Researchers in teak improvement		Some	Few	Many
	Practitioners/experts in teak		Many	Many	Many
Endorsed teak improvement plans		None	None	None	
TEAK RESOURCES					
Natural forests	Trends		Decreasing	Decreasing/large	Decreasing
	Production		None	Selective cutting	None
Planted forests	Most advanced rotation		Second	Second	Third
	Major executing agency		Government company	Forest Department	Forest Department
	Dominant planting methodology		Industrial	Taungya system	Industrial
	Future development opportunities		Limited	Large	Limited
IMPROVEMENT EFFORTS					
Plus-trees	Estimated existing number		Around 500	Few	94
	Criteria for selection		Developed by TIC	Under development	Developed by KFRI
Provenance trials	Type		International	National	International
	Number of provenances tested		3	10	n.d.
	Number of test sites		1	4	n.d.
	Starting year		1974	1998	1960
	Publications		Yes	Yes	No
Progeny tests		Pilot scale	None	Pilot scale	
Clonal tests		None	None	Yes	
PROPAGATION/PRODUCTION					
Seed production areas		1000 hectares	650 hectares	Yes	
Seed orchards	Type		n.d.	Clonal	n.d.
	Number of locations		n.d.	2	n.d.
	Scale		n.d.	20 hectares	n.d.
	Production		none	None	none
Hedge gardens		Pilot scale	Pilot scale	Production scale	
Nurseries		Yes	Yes	Yes	
Tissue culture		For research purposes	Test scale	For research purposes	

n.d. = no data

Improvement activities in general

All three producers have made progress in teak improvement. However, the improved genetic materials are not yet ready for large-scale supply.

Executing agencies of plantation development and improvement

The production and improvement of teak generally rely

on the public sectors of each country/state. Taungya, a farmer-based agroforestry system, is widely practised in Myanmar using teak.

Potential for the use of improved materials

Myanmar has the largest potential for the use of improved materials because more plantation development is expected there. To date, the selective cutting of natural-forest teak has been the predominant form of production but the Myanmar Forest Department intends now to promote plantations over

Areas for improvement

Table 2: Level of development in teak improvement

INDICATORS	COUNTRY/LOCALITY		THAILAND		MYANMAR		KERALA	
	PROPAGATION SCALE		Development	Production	Development	Production	Development	Production
Selection of sources	Populations	Seed production area(s)	•	•	•	•	•	•
		Provenance(s)	•		•		•	
	Individuals	Plus-trees	•		•		•	•
Breeding	Open-pollination		•				•	
	Controlled-pollination		•					

natural forest production. In Thailand and Kerala, the large-scale expansion of the teak plantation estate is not foreseen; prevailing policies in Thailand even discourage harvesting in the existing teak plantations. The use of such improved materials is expected when existing plantations are harvested and re-planted, or when new private plantations are established.

Selection of superior sources

Each of the three (Myanmar, Thailand and Kerala state) has initiated improvement through selection, such as phenotypic thinning in seed production areas, provenance trials, and the selection of plus-trees. In Kerala and Thailand, a number of plus-trees have been selected based on the criteria established by their research organisations. These agencies established provenance trials in the 1960s and 1970s respectively using provenances from across the species's natural range. Myanmar set up provenance trials in the late 1990s using genetic material from a wide range of sub-national locations. The ITTO project 'Ex-situ and in-situ conservation of teak (*Tectona grandis* L.F.) to support sustainable forest management' (PD 270/04 REV.2 (F)) is expected to promote the establishment of seed production areas/provenance trials and the selection of plus-trees in Myanmar.

Breeding

Some research has been conducted in Thailand and Kerala into teak breeding through pollination among the selected trees. However, the seed orchards in both have not given satisfactory quantities of open-pollinated product. A recent study by the Kerala Forest Research Institute (KFRI) indicated that artificial cross-pollination could increase fruit productivity by about tenfold (Indira et al. 2002). Controlled pollination trials have been initiated recently in Thailand. The extent to which breeding efforts could contribute to teak forestry in the near future remains unclear because research results are still limited.

Propagation

Seed production areas have been established to support field operations in Myanmar, Thailand and Kerala. However, one of the main hindrances to high-quality teak plantation development remains the insufficient production of seed. In all of the three major producers, some kind of tissue culture technique has been applied. In Thailand and Kerala, tissue culture is used mainly to duplicate individuals for research purposes. Nevertheless, some private and public organisations in Thailand have used tissue-culture facilities to produce and sell seedlings of plus-trees; it is estimated that more than 500 hectares of teak plantations have been developed with materials derived using tissue culture by private companies to date. In Kerala, recent research efforts have been directed towards the practical development of clonal propagation of superior individuals and cost-effective tissue-culture techniques. However, the extent to which tissue-culture techniques will

substitute for more conventional propagation practices such as cuttings and seedlings for the large-scale production of improved materials remains unclear.

Conclusion

Various teak improvement efforts have been made in each of the three main teak-growing areas studied. The focus has mainly been on improvement through selection, represented by the establishment of provenance trials/seed production areas and the selection of plus-trees. At the same time, wood production has not yet benefited much from such improvement. The key next step is to establish and execute strategically focused, integrated and actionable teak improvement plans to support potential teak plantation/planting development in the future.

The standardisation of research methodologies and coordinated research planning would be of enormous benefit by allowing major producers to share and benefit from results. The main international provenance trials set up to date are those in Thailand and Kerala, while the trials in Myanmar are national; the results could have been compared if the designs had been standardised. Research information on genetic variation in Myanmar, Thailand and Kerala could possibly help in the improved design of breeding trials and the scientific determination of provenances.

Acknowledgements

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ITTO's recently funded projects

The projects summarised below were financed at the 39th session of the International Tropical Timber Council, which was held in November 2005. A total of US\$13 million was committed at the session for projects and for activities in the 2006–2007 biennial work program

Bi-national conservation and peace in the Condor range region, Ecuador-Peru Phase II (Ecuadorian component) (PD 238/03 Rev.4 (F))

Budget ITTO:	US\$577 800
Ecuador Ministry for the Environment:	US\$22 000
Natura Foundation:	US\$121 678
Conservation International:	US\$37 000
Total	US\$758 478

Implementing agencies Ecuador Ministry for the Environment, Natura Foundation, Conservation International

Funding sources Japan, USA, Bali Partnership Fund

The Condor Range has unique features because of its biodiversity, endemism and conservation status. During the first phase of this project (PD 2/00 REV.2 (F)), two conservation areas (the Condor Ecological Reserve and the Condor Shuar Territory) were established, their management plans designed and both areas integrated into a framework of land-use management and general master plans for conservation and sustainable development and municipal environmental management plans.

In its second phase the project will ensure: (a) the conservation of national protected areas and the sustainable management of the natural resources of the Condor region, with a view to promoting the sustainable development of the Shuar communities through the implementation of sub-programs contained in the management plans for the Condor Shuar Territory and the Condor Ecological Reserve; and (b) the joint implementation of mechanisms and instruments for coordinated conservation management between Ecuador and Peru.

Bi-national conservation and peace in the Condor Range region, Ecuador-Peru – Phase II (Peruvian component) (PD 237/03 Rev.4 (F))

Budget ITTO:	US\$577 800
INRENA:	US\$117 600
Conservation International Peru:	US\$157 789
Total	US\$853 189

Implementing agencies National Institute for Natural Resources (INRENA) in association with Conservation International Peru and with the participation of indigenous organisations

Funding sources Japan, USA, Bali Partnership Fund

This second phase of the project will help conserve the flora, fauna and landscapes of a representative sample of tropical mountain forests within the context of the indigenous Awajun-Wampis world view through the implementation of the master plan for the Condor Range National Park. At the same time it will enhance the capacity of indigenous communities to sustainably manage the natural resources of the region.

Criteria and indicators for the evaluation of tropical forest management sustainability in Mexico (southeastern coastal plains: Gulf of Mexico and Yucatan Peninsula) (PD 351/05 Rev.1 (F))

Budget ITTO:	US\$514 653
INIFAP-CONAFOR/Gobierno Anfitríon:	US\$181 572
Total	US\$696 225

Implementing agencies National Institute for Forestry, Agricultural and Animal Research (INIFAP), National Centre for Disciplinary Research on Forest Ecosystem Conservation and Improvement

Funding sources Japan, USA, Finland, Bali Partnership Fund

This project will develop management programs for the sustainable conservation and utilisation of tropical forests in the southeast of Mexico (Los Tuxtlas, Chimalapas, Selva Lacandona, Centla, Calakmul, Tekax and Sián Kaán). Major outputs will include: a diagnosis of forest resources in the tropical forests of the southeastern coastal plains; forest management evaluation processes tailored to Mexico's tropical forest conditions; and validated local criteria and indicators with which to evaluate tropical forest management. The project will transfer knowledge on sustainable forest management (SFM) to *ejido* communities that own tropical forest.

Development and delivery of a vocational training program in reduced impact logging and sustainable forest management practices in Guyana (PD 333/05 Rev.2 (I))

Budget ITTO:	US\$361 897
Government of Guyana:	US\$441 431
Forestry Training Centre Inc:	US\$80 155
Forest Enterprises:	US\$136 130
Tropical Forest Foundation/ Caterpillar Inc:	US\$135 000
Total	US\$1 154 613

Implementing agency Forestry Training Centre Incorporated

Funding sources USA, France, Bali Partnership Fund

The purpose of this 24-month project is to continue and expand vocational training in SFM and reduced impact logging (RIL) in Guyana. The project will build on the experience of the Forestry Training Centre Inc, which was established in May 2003 through ITTO PROJECT PD 68/01 REV 2 (I).

One of the main project activities is to continue the RIL training program through 27 practical training courses targeting 234 forestry professionals at all levels. A second component will develop a RIL system and special training program tailored to the needs of small-scale and community forest operators. A third component will broaden the vocational SFM training program beyond RIL to forest management planning, code of practice standards, forest surveying and mapping, tree species' identification, and auditing practices for criteria and indicators.

Demonstration and application of production and utilization technologies for rattan sustainable development in the ASEAN member countries (Philippines; PD 334/05 Rev.2 (I))

Budget ITTO:	US\$629 873
Government of the Philippines:	US\$270 000
Total	US\$899 873

Implementing agencies Ecosystems Research and Development Bureau, Department of Environment and Natural Resources

Funding source Bali Partnership Fund

This 48-month project will promote the development of ASEAN's rattan sector through the demonstration and application of rattan management and utilization technologies. It will establish rattan demonstration plots of 20 hectares in each ASEAN country and develop technical manuals on rattan management and training. Training is planned on rattan utilization technologies for the production of quality furniture, handicrafts and other products after research work on relevant technologies. The project will also establish an ASEAN Rattan Centre for discussion and policy sharing to support the implementation of national rattan projects.

Tropical forest fire monitoring and management system based on satellite remote sensing data in China (PD 228/03 Rev.3 (F))

Budget ITTO:	US\$230 000
Government of China:	US\$172 500
Total	US\$402 500

Implementing agencies Research Institute of Forest Resources Information Techniques, Chinese Academy of Forestry

Funding sources Japan, Australia

This project will help reduce the frequency of fire in China's tropical forests by strengthening forest protection and accelerating the sustainable development and utilisation of tropical forests. Specifically it will: improve forest fire monitoring and fire danger forecasting in an experimental and demonstration area in Guangdong Province; and promote forest fire management at the provincial, district and county levels through the establishment of a satellite-based tropical forest fire monitoring and management system and through demonstrations and technical training.

Sustainable management of tropical forest resources through stakeholder agreements in traditionally owned areas of Papua New Guinea (PD 324/04 Rev.3 (F))

Budget ITTO:	US\$452 196
The Nature Conservancy (TNC):	US\$505 538
Government of PNG:	US\$75 000
Total	US\$1 032 734

Implementing agencies PNG Forest Authority in collaboration with TNC

Funding sources Japan, Australia, TNC, Bali Partnership Fund

This project will assist local forest owners in the Adelbert Range and throughout PNG to conserve and sustainably manage their forests to meet the livelihood needs of current and future generations. Specifically it will assist local forest owners in the Adelbert Ranges to effectively use conservation agreements and management plans to conserve and sustainably manage their forests and meet their livelihood needs.

Conservation and recovery of degraded land in family agriculture units in the eastern Brazilian Amazon (PD 346/05 Rev.2 (F))

Budget ITTO:	US\$324 000
National counterpart:	US\$191 700
Total	US\$515 700

Implementing agency Embrapa Eastern Amazon

Funding sources Bali Partnership Fund

The objective of this project is to contribute towards the recovery of degraded areas on family-owned lands in the eastern Amazon through capacity-building among farmers in the project area, and the networking of partnerships involving farmers, scholar students, research institutions and producers' associations interested in the rehabilitation of degraded forests. The project will also include the establishment and monitoring of demonstration areas using various schemes and a review of current legislation with a view to reducing deforestation and promoting the rehabilitation of degraded lands.

Contribution to livelihood and forest rehabilitation in Thailand's areas affected by tsunami disaster (PD 372/05 Rev.1 (F))

Budget ITTO:	US\$790 020
Government of Thailand:	US\$343 620
Total	US\$1 133 640

Implementing agencies Royal Forest Department in collaboration with Thailand Environmental Institute

Funding sources Switzerland, USA, Korea, Bali Partnership Fund

The Asian tsunami of 26 December 2004 caused widespread destruction in six southern provinces of Thailand along the Andaman coastline. This project will initiate a process for medium and long-term rehabilitation of the damaged coastal forests in that zone. Its design emphasises the complementarity and synergies with a project to be funded in the same area by Swiss Solidarity, which aims to provide support to the development of sustainable community livelihoods.

Technological development for the production of planting materials to support sustainable plantation of Bali indigenous species through community participation (Indonesia; PD 386/05 Rev.1 (F))

Budget ITTO:	US\$597 512
Government of Indonesia:	US\$1 076 662
Total	US\$1 674 174

Implementing agencies Bali Provincial Forestry Service in collaboration with Directorate General of Land Rehabilitation and Social Forestry, Indonesian Ministry of Forestry

Funding sources Korea, Australia, Bali Partnership Fund

This project, a follow-up to ITTO PROJECT PD 137/02 REV.2 (F), will support the tree-planting program of the Bali provincial government as a means of empowering the local economy and improving environmental conditions in Bali.

A comprehensive information system for sustainability of the wooden furniture industry in Malaysia (PD 192/03 Rev.3 (M))

Budget ITTO:	US\$121 072
FRIM:	US\$14 552
Total	US\$135 624

Implementing agency The Forest Research Institute Malaysia (FRIM)

Funding sources Australia, Bali Partnership Fund

Malaysia's wooden furniture industry is growing in importance in the export structure of the country's economy and is now worth up to 4 billion Malaysian ringgit per year. This small project will develop an information system on supply and demand for the sustainable development of the wooden furniture industry in Malaysia. Such an information system will assist policy in the future development of the industry, provide market information for international and local buyers, and assist industrialists in planning industrial expansion.

Establishment of a network to facilitate collection, processing and dissemination of statistics pertaining to tropical timber and other forestry parameters in India (PD 291/04 Rev.2 (M))

Budget ITTO:	US\$216 378
ICFRE:	US\$25 100
Total	US\$241 478

Implementing agency Indian Council of Forestry Research and Education (ICFRE)

Funding sources Japan, USA, Republic of Korea, Bali Partnership Fund

This project will establish a network to collect, process and disseminate data related to India's forestry sector. It will develop reporting formats in line with those of ITTO and other relevant international bodies and it will prepare a manual for the implementation of the network as well as training courses for field investigators. The data processing and dissemination capabilities of ICFRE will be developed with the aim of minimising the response time to the demands of data by ITTO and other relevant bodies.

Sustainable community management, utilisation and conservation of mangrove ecosystems in Ghana (PPD 108/04 Rev.1 (F))

Budget ITTO:	US\$75 578
Government of Ghana:	US\$18 674
Total	US\$94 252

Implementing agencies Institute of Renewable Natural Resources Management (IRNR), in collaboration with the Forestry Research Institute of Ghana (FORIG) and the Ghana Forestry Commission

Funding sources USA, Bali Partnership Fund

In recent years, the pressures of a growing population combined with increased agricultural, industrial and urban development in coastal areas have led to the degradation of mangrove ecosystems in Ghana. This pre-project will identify opportunities and threats to the sustainable management, utilisation and conservation of mangroves by local communities. It will also formulate policy and legislative guidelines for community-based mangrove management and prepare a proposal for a larger project on the sustainable management, conservation and utilisation of mangroves by local communities in Ghana.

Technical assistance for the formulation of a project aimed at capacity strengthening for the sustainable management of natural and planted tropical forests (Panama; PPD 45/02 Rev.3 (M))

Budget ITTO:	US\$32 022
Government of Panama:	US\$13 270
Total	US\$45 292

Implementing agency Autoridad Nacional del Ambiente (ANAM)

Funding source Japan Forestry Agency

This pre-project will formulate a project proposal aimed at strengthening capacity to promote the sustainable management of Panama's forests. The ultimate goal is to ensure the national supply of Panamanian forest products to meet the requirements of the international tropical timber market and thus provide the possibility of increasing exports and of generating foreign-exchange earnings while promoting the conservation of natural forests.

Producers

Africa

- Cameroun*
- 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 Union*
 - Austria*
 - Belgium/Luxembourg*
 - Denmark*
 - Finland*
 - France*
 - Germany*
 - Greece*
 - Ireland*
 - Italy*
 - Netherlands*
 - Portugal*
 - Spain*
 - Sweden*
 - United Kingdom*
- Japan*
- Nepal*
- New Zealand*
- Norway*
- Republic of Korea*
- Switzerland*
- United States of America*

How much carbon do Ghana's teak plantations sequester?

by Samuel Asirifi Boateng

Forestry Research Institute of Ghana

FORESTS SERVE as a major reservoir of carbon, containing about 80% of all carbon stored in land vegetation. Large quantities of carbon may be emitted into the atmosphere during conversion from forest to another land-use, contributing to the increase of greenhouse gases in the atmosphere. The fast-dwindling nature of our forest estate is therefore alarming.

Many measures have been designed and put in place to encourage afforestation and reforestation. One of these is the Clean Development

Mechanism of the Kyoto Protocol, under which afforestation-reforestation activities may qualify for carbon credits, which could lead to payments for carbon sequestration. Effective and accurate methods of accounting for carbon are needed to implement such sequestration projects.

The objective of my ITTO fellowship was, therefore, to acquire skills in and knowledge of the various modelling methods applied in carbon accounting. It was conducted at the Wageningen Agricultural University in the Netherlands under the supervision of Professor G. M. J. Mohren.

Ghana's plantation program

Ghana has a program to replant 20,000 hectares of its degraded forestlands each year with the aims of assisting economic development and providing new wood resources. The new plantations also act to sequester carbon.



Fellow at work: the author does some desk research.

Teak (*Tectona grandis*) is one of the main hardwood species used in plantations in Ghana, having been planted for the first time in 1905 (Odoom & Varmola 2002). Teak grows very well in Ghana, with a mean annual increment of 8–10 m³ per hectare (Bhat & Ma 2004). The systems used in plantation establishment are taungya and 'standard' monocropping.

Model description

The CO2FIX Version 3.1 simulation model (Masera et al. 2001) is a user-friendly tool designed to quantify the carbon balance of both non-forested and forested ecosystems. It is a multi-cohort (see below), ecosystem-level model applicable to many situations, including afforestation projects, agroforestry and selective logging systems. It can be obtained for free from the internet at: <http://www.efi.fi/projects/casfor/>. The minimum requirements for installing the program on personal computers are: Intel 80386 processor, 4 MB RAM memory, 4 MB free space on the hard disk and any Win32 operating system previously installed.

A 'cohort' is defined in the model as a group of individual trees assumed to exhibit similar growth and which may be treated as a single entity within the model. Parameters to consider when running the model include initial biomass, growth and mortality of the cohort, and interactions between and within the cohort. The CO2FIX model has several components, described below.

Biomass and soil models

The model accounts for all carbon stock in the living biomass (above- and below-ground). The basic methods for modelling the growth of a forest are: (a) tree growth as a function of tree or cohort age; and (b) tree growth as a function of tree size (eg basal area, volume or biomass).

Site characteristics

Table 1: General features of the sample plots

PARAMETER	SITE	
	TAMALE	BOLGATANGA
Area (hectares)	0.063	0.063
Height (m)	21.7	23.3
Basal area (m ² per hectare)	26.5	32.4
VOLUME		
Stem (m ³ per hectare)	268	343
Foliage (m ³ per hectare)	19.6	21.4
Branches (m ³ per hectare)	171	211
Roots (m ³ per hectare)	105	111
TOTAL VOLUME (m³ per hectare)	564	686

When the age of a cohort is known, biomass growth is often modelled as a function of time. On the other hand, biomass growth is modelled as a function of diameter increment when the cohort age is unknown. The mortality of each cohort can be described in two ways: mortality due to senescence and density-related competition, and mortality during and after logging.

Parameters for thinning and the final cut for each cohort must be defined. The required information for each cohort includes: age at which harvesting takes place; the intensity of the harvesting (fraction of cohort biomass removed); and the allocation of the biomass removed to the different raw-material classes of slash, logwood, poles and fuelwood.

The required inputs for the soil model are mean annual temperature, precipitation in the growing season, and potential evapotranspiration in the growing season for the study area.

Product model

The product model estimates the carbon stock in the product from harvesting to final decay. It takes into consideration the life span of the product, its purpose, and the portion it takes from the tree.

The bioenergy model calculates the effect of using wood or wood waste for the generation of energy. This emission avoidance can be expressed in terms of carbon and added to the total stock in the system to calculate the total effect of the modelled plantation on the atmosphere.

Data collection

To run the model, data were collected from two teak plantations at Bolgatanga (11°47'N, 0°51'W) and Tamale (9°25'N, 0°51'W) in northern Ghana. Temporary 25 m x 25 m sample plots were demarcated at the centres of the plantations; trees within the plots were counted to establish tree density. Height and diameter at breast height were measured for basal area and stem volume calculations. *Table 1* shows basic site data.

The soils at both sites are savanna ochrosols found on the Voltian sandstone. The topsoils are generally thin (<20 cm), greyish-brown sandy loam, and weakly granular and friable. The annual rainfall is 1000–1200 mm, with a peak around August–September. The mean annual temperature is 28°C (Boateng 1966).

Carbon accumulation

Table 2: Accumulated carbon stock in two teak plantations in Ghana

	TAMALE	BOLGATANGA
COMPONENT	VOLUME (m³ per hectare)	
Stem	35.7	43.9
Foliage	4.72	5.16
Branches	40.9	50.7
Roots	25.3	26.6
	CARBON (tonnes per hectare)	
Biomass	107	126
Products	9.73	12.8
Soil	35.8	43.9
TOTAL	165	191

The model assumed a rotation length of 40 years, average wood density of 480 kg per m³, and a mix of products (sawlogs, poles and fuelwood) harvested over the life of the plantation. *Table 2* summarises the outcomes of the modelling.

The net carbon that would be accumulated over the 40-year rotation is therefore estimated to be 165 tonnes per hectare at Tamale and 191 tonnes at Bolgatanga.

Conclusion

Further testing of the model parameters should be carried out in other teak plantations in Ghana. Many new things have been learned through this training program, and I hope that it will enhance my work and my contribution to the country's environmental management.

References

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- Boateng, E. 1966. *Geography of Ghana*. Second edition. Cambridge University Press, Cambridge, UK.
- Masera, O., Garza-Caligaris, J., Kanninen, M., Karjalainen, T., Liski, J., Nabuurs, G., De Jong, B. & Mohren, G. 2001. Modeling carbon sequestration in afforestation, agroforestry and forest management projects: the CO₂FIX V.2 approach. *Ecological Modelling* 164: 177–199.
- Odoom, F. & Varmola, M. 2002. *Hardwood plantations in Ghana*. FAO Working paper FD/24. FAO, Rome, Italy.

Fellowships awarded

Twenty-five fellowships worth a total of US\$156 100 were awarded at the 39th session of the International Tropical Timber Council in November 2005. Awardees were:

Stephen Lartey Tekpetey (Ghana), to undertake a PhD in wood technology; **Bibi Pamela Mbohno** (Cameroon), to do a postgraduate diploma in tropical forest ecosystem management; **Qiao Chen** (China), to take a short training course on monitoring and managing tropical forests using remote sensing; **Fernando Fernández Méndez** and **Carolina Alcázar Caicedo**, both of Colombia, to undertake master's programs in the management and conservation of tropical forests and biodiversity; **Ripu Mardhan Kunwar** (Nepal), to prepare a technical document on non-timber forest products in Nepal; **Newton Jordao Zerbini** (Brazil), to do PhD research in Xingu, Para, Brazil; **Minlend Albert** (Cameroon), to participate in a short training course on sustainable natural resource management; **Vag-Lan Gomes Boges** (Brazil), to prepare a technical document on the economics of babassu trees products and derivatives in the Amazon; **Ganesh Bahadur Karki** and **Shiv Kumar Manjan**, both of Nepal, to undertake a master's program in watershed management; **Remy Shabantu Mukongo** (Democratic Republic of Congo), to attend a short training course on forest products; **Arsenio Bacerdo Ella** (Philippines), to publish manuals on Philippine woods; **Janice Monica Bollers** (Guyana), to do a master's program in environmental forestry; **Denis Ngatse** (Congo), to undertake training in improving transparency in the international trade of tropical timber; **María Soledad Bastidas Fegan** (Ecuador), to do a master's program in agroforestry; **Edouardo Zama** (Central African Republic), to do a master's program in the participatory management of forest resources; **Adje Oliver Ahimin** (Côte d'Ivoire), to conduct doctoral research on developing criteria to identify high conservation value forests and relevant silvicultural treatments in tropical forests; **Keassemon Herve Kone** (Côte d'Ivoire), to prepare a PhD thesis on reducing invasive species in teak plantations; and **Sadhna Tripathi** (India), to undertake a study tour.



US\$13 million in new funds for tropical forests

39th Session of the International Tropical Timber Council

7–12 November 2005

Yokohama, Japan

At this session, the International Tropical Timber Council committed US\$13.3 million for new projects and activities for the conservation and sustainable management, use and trade of tropical forest resources. The funds pledged at this session are in addition to the US\$7.6 million committed in June at the previous Council session, bringing the total pledged in 2005 to almost US\$21 million.

The funds pledged at this session are in addition to the US\$7.6 million committed in June at the previous Council session, bringing the total pledged in 2005 to almost US\$21 million.

The Council financed twelve projects and three pre-projects at this session (see page 20 for descriptions), as well as elements of the biennial work program for 2006–07, which has a total budget of US\$10.2 million. The funds needed to implement the work program include US\$3.05 million to help improve the capacity of ITTO member countries to implement CITES listings of timber species and US\$240 000 to assist countries to develop systems to demonstrate the legality of their timber exports. The work program also includes almost US\$400 000 to field-test a draft set of revised ITTO *Guidelines on the Conservation of Biological Diversity in Tropical Production Forests*.

The major donors at the session were the governments of Japan, Switzerland and the USA, while The Nature Conservancy (a non-governmental organisation) and the governments of Finland, Australia, the Republic of Korea, the Netherlands and France also pledged funds. In addition, funds were mobilised from the Organization's un-earmarked resources, including the Bali Partnership Sub-account B.

More UNFF

6th Session of the United Nations Forum on Forests

13–24 February 2006

New York, USA

After two weeks of negotiation, 600 delegates have agreed to meet again next year to continue the work of the United Nations Forum on Forests (UNFF).

The UNFF was created in 2000 as the evolved form of the Intergovernmental Forum on Forests, which itself was the successor of the Intergovernmental Panel on Forests. Its mandate is to promote the management, conservation and sustainable development of all types of forests, which it pursues through its annual sessions, country-led initiatives on various aspects of forests, and by supporting the Collaborative Partnership on Forests (CPF), an informal grouping of 14 international forest-related bodies (including ITTO). Together, the UNFF and the CPF constitute what is called the international arrangement on forests (IAF).

One of the tasks that the UNFF has grappled with is the possibility of a legally binding instrument on forests—a forests' convention. Several countries have been vociferous advocates of such an instrument, while others have been equally noisy in their opposition. Ultimately, delegates agreed to keep this issue on the slow-burner.

At this session, debate centred on the Chair's draft negotiating text, forwarded from the fifth session of the UNFF (held last year—see *TFU* 15/3), which was to be attached as an annex to a resolution for consideration by the United Nations Economic and Social Council (ECOSOC). According to the independent reporting service the *Environmental News Bulletin* (ENB), "negotiations proceeded slowly, with little sense of urgency to force compromise and complete the agreement until the very final day". In the end, delegates agreed on the text, which sets out four 'global objectives' on forests. These are:

- 1) to reverse the loss of forest cover worldwide through sustainable forest management (SFM), including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation;
- 2) to enhance forest-based economic, social and environmental benefits and the contribution of forests to the achievement of internationally agreed development goals ...;
- 3) to increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, and increase the proportion of forest products from sustainably managed forests; and
- 4) to reverse the decline in ODA [official development assistance] for SFM and mobilise significantly increased new and additional financial resources from all sources for the implementation of SFM.

Delegates also agreed on text setting out the functions of the IAF, which are:

- to enhance the contribution of forests towards achieving internationally agreed development goals;
- to encourage and assist countries, including LFCCs [low forest cover countries], to develop and implement forest conservation and rehabilitation strategies, increase the area of forests under sustainable management, and reduce forest degradation and loss of forest cover; and
- to strengthen interaction between the UNFF and relevant regional and subregional forest-related mechanisms, institutions and instruments, organisations and processes.

The text also urges countries to make "concerted efforts to secure sustained high-level political commitment to strengthen the means of implementation to provide support, in particular for developing countries, to promote SFM".

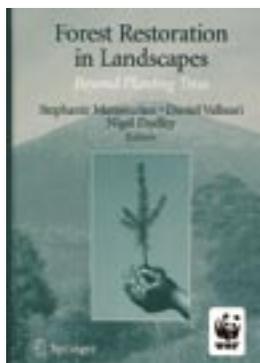
The text proposes that after UNFF 7, to be convened next year, the UNFF will meet every two years on the basis of a multi-year program of work. Delegates agreed to conclude and adopt a non-legally binding instrument on forests at UNFF 7, on the basis of the work of an ad hoc working group that will meet beforehand. A full review of the UNFF will be conducted in 2015; it will consider, among other things, the possibility of a legally binding instrument on forests.

The full ENB summary of UNFF 6, from which the above 'agreed text' is extracted, is available at <http://www.iisd.ca/forestry/unff/unff6/>

Edited
by
Alastair
Sarre

- **Mansourian, S., Vallauri, D. & Dudley, N. 2005. Forest restoration in landscapes: beyond planting trees. Springer, New York, USA. ISBN 0 387 25525 7.**

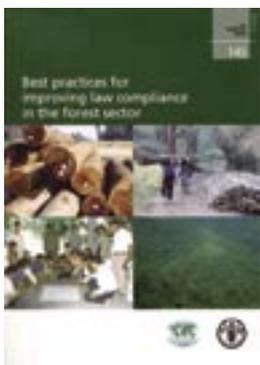
Available from: Springer; springeronline.com



This book, produced by WWF International, comprises 59 chapters—essays, according to the editors—written by an impressive line-up of forest restoration practitioners, policymakers and sages. The chapters are brief and easy to read. They are arranged under the general headings ‘towards a wider perspective in forest restoration’, ‘key preparatory steps towards restoring forests within a landscape context’, ‘implementing forest restoration’, ‘addressing specific aspects of forest restoration’, and ‘lessons learned and the way forward’. Its scope is global, and it includes chapters dedicated to dry tropical, tropical moist broadleaved, tropical montane, floodplain, Mediterranean and temperate forests. The book should prove a valuable reference and compendium for forest landscape restoration practitioners.

- **FAO & ITTO 2005. Best practices for improving law compliance in the forest sector. FAO Forestry Paper 145. FAO, Rome, Italy and ITTO, Yokohama, Japan. ISBN 92 5 105381 2.**

Available from: authorized FAO sales agents or directly from Sales and Marketing Group, FAO, Viale delle Terme di Caracalla, 00200 Rome, Italy; or download it from <http://www.itto.or.jp/live/PageDisplayHandler?pageId=203>



This joint FAO/ITTO publication examines best practices for improving law compliance in the forest sector by drawing on case studies in Bolivia, Cambodia, Cameroon, Ecuador, Honduras, Indonesia, Italy, Malaysia, Mozambique, Nicaragua and Peru, and on experiences in other countries and international initiatives.

The report provides numerous examples of steps being taken to put an end to illegal logging and highlights four overarching areas where policy reforms can help: making forestry laws and policies more rational, equitable, transparent and streamlined; improving monitoring and information gathering; strengthening national capacities to enforce compliance; and ensuring that policies take into account the economic and social dynamics that underlie illegal logging.

- **Global Witness 2005. A choice for China: ending the destruction of Burma's northern frontier forests. Global Witness, Washington, DC, USA. ISBN 0 9772364 1 2.**

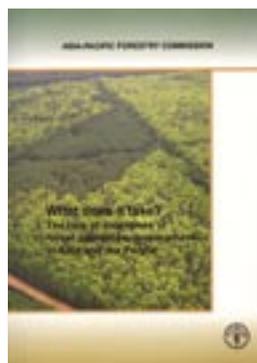
Available from: Global Witness Publishing Ind, 8th floor, 1120 19th Street NW, Washington, DC 20036, USA; burma@globalwitness.org; www.globalwitness.org



This report describes both the mechanisms and scale of logging in Kachin state in Myanmar's northeast and the associated cross-border trade with China, which Global Witness alleges is mostly illegal. It also looks at the impact of logging on the livelihoods of Kachin's forest-dependent communities.

- **Enters, T. & Durst, P. 2004. What does it take? The role of incentives in forest plantation development in Asia and the Pacific. Asia-Pacific Forestry Commission, FAO, Bangkok, Thailand. ISBN 974 7946 60 2.**

Available from: Patrick Durst, Senior Forestry Officer, FAO Regional Office for Asia and the Pacific, 39 Phra Atit Road, Bangkok 10200, Thailand; Patrick.Durst@fao.org

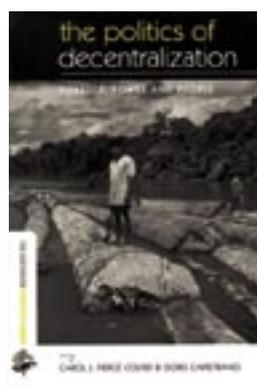


This book reports a study commissioned by the Asia-Pacific Forestry Commission to examine the reasons for the mixed results achieved by forest plantation programs in the region in the past and to provide guidance to those countries interested in stimulating the expansion

of their plantation estates through incentives. It is based on case studies in Australia, China, India, Indonesia, Malaysia, New Zealand, the Philippines, Thailand and the USA. It concludes that many kinds of incentives are available to policymakers, although “none has emerged as a silver bullet”. A stand-alone executive summary is also available.

- **Pierce Colfer, C. & Capistrano, D. (eds) 2005. The politics of decentralization: forests, power and people. Earthscan, London, UK. ISBN 1 84407 205 3.**

Available from: Earthscan, 8–12 Camden High Street, London NW1 0JH, UK; earthinfo@earthscan.co.uk; www.earthscan.co.uk

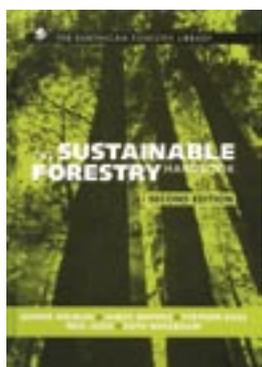


This book comprises chapters based on papers presented at a conference convened by the governments of Indonesia and Switzerland in Interlaken, Switzerland, in 2004. It relates the experiences of decentralisation—and the effects on forests and forest management—in countries as dissimilar as Switzerland

and Russia, and Scotland and Bolivia. In the concluding chapter, Capistrano and Pierce Colfer report a “marked tendency for central governments to decentralize management responsibility for the most degraded and least valuable forests while keeping the most valuable revenue-generating forests under central control”. Some case studies also showed that decentralisation, rather than being a linear process from the centralised to the decentralised, can sometimes be cyclical. “Because conditions, norms and citizenry change, governance—and, thus, also decentralization—is an ongoing process of negotiation and power brokering.” One wonders what will happen in some places when now-decentralised degraded land once again becomes productive and valuable.

► **Higman, S., Mayers, J., Bass, S., Judd, N. & Nussbaum, R. 2005. The sustainable forestry handbook: a practical guide for tropical forest managers on implementing new standards. Second edition. Earthscan, London, UK. ISBN 1 84407 118 9.**

Available from: Earthscan, 8–12 Camden High Street, London NW1 0JH, UK; earthinfo@earthscan.co.uk; www.earthscan.co.uk

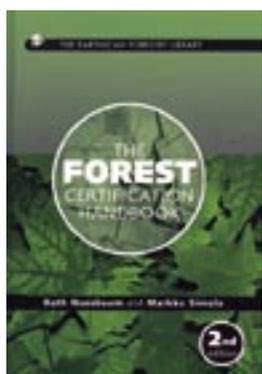


The first edition of this book was published in 1999 and was apparently well-received. According to the authors, a second, “substantially revised” edition became necessary because “standards in forestry have moved forward, new standards have been developed and existing standards modified”. Nonetheless it “maintains its focus on the practical application of the ITTO guidelines [for the sustainable management of natural tropical forests and for the establishment

and sustainable management of planted tropical forests] and FSC [Forest Stewardship Council] standards, which are still the main international standards applicable to tropical forests.” It takes a pragmatic approach to sustainable forest management, defining it as the “best available practices based on current scientific and traditional knowledge, which allow multiple objectives and needs to be met without degrading the forest resource”. In contrast, “bad forest management” leads to loss of livelihoods, loss of cultural assets and knowledge, rising inequality and loss of an asset base for national development. The book is designed as a reference to be consulted as necessary on specific subjects.

► **Nussbaum, R. & Simula, M. 2005. The forest certification handbook. Second edition. Earthscan, London, UK. ISBN 1 84407 123 5.**

Available from: Earthscan, 8–12 Camden High Street, London NW1 0JH, UK; earthinfo@earthscan.co.uk; www.earthscan.co.uk

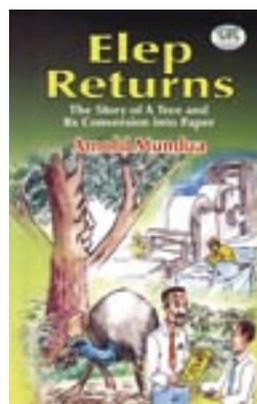


According to its back-cover blurb, the first edition of this book, which was published in 1995, “has become the landmark book concerning all aspects of forest and wood product certification from policy to business to in-the-field technical issues”. It has now been “entirely rewritten” to take into account the many developments in certification that have taken place over the last decade. It includes a chapter on phased approaches, which have been proposed as a

way by which companies can maintain market access while they improve their practices through a series of phases.

► **Mundua, A. 2005. Elep returns: the story of a tree and its conversion into paper. CBS Publishers & Distributors, New Delhi, India. ISBN 81 239 1268 4.**

Available from: CBS Publishers & Distributors, 4596/1-A, 11 Darya Ganj, New Delhi 110002, India; Tel 91-11-2328 9261; Fax 91-11-2327 6712; cbspubs@vsnl.com; www.cbspd.com



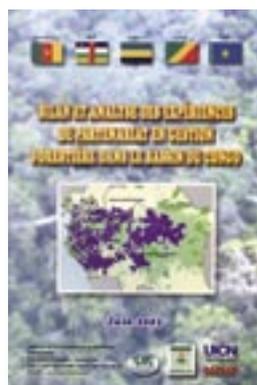
“As a young fruit, I thought I would always remain with my mother tree on her branch. I thought that I’d be there for the rest of my life and would forever enjoy watching the wonderful scenery below and the marvelous blue sky and sunshine above. But no.”

This unusual children’s novel is written by a forester with the assistance of an ITTO fellowship. It follows the life of a tree, from its conception in the heart of the Papua New Guinean rainforest to its felling, export to Japan, conversion to paper, eventual return

to PNG and final use as a schoolchild’s Year 10 certificate. According to the author, the story is intended to “give an overview of forestry and the timber industry and, more importantly, the role of trees as a natural renewable resource”.

► **ITTO 2005. Bilan et analyse des expériences de partenariat en gestion forestière dans le Bassin du Congo. UICN-BRAC and ITTO, Yaoundé, Cameroun.**

Available from: IUCN-ROCA / UICN-BRAC, B.P. 5506 Yaoundé, Cameroon; Tel: (237)-221-6496; Fax: (237)-221-6497; iucnbrac@iucn.org



This report derives from the implementation of ITTO Council Decision 10(XXXII) regarding the promotion of SFM in the following Congo Basin ITTO member countries: Cameroon, Central African Republic, Democratic Republic of Congo, Gabon and Republic of Congo. It includes information on the review and assessment of experiences in forest management partnerships among the various relevant stakeholders, while taking into consideration demonstration activities already funded by ITTO in the

region, and other activities undertaken by the French Development Agency (Agence Française de Développement), the Wildlife Conservation Society and WWF. It also includes the findings of case-studies regarding participatory SFM practices in three forest concessions located in Cameroon, Gabon and Republic of Congo. The results of this report are part of the ITTO contribution to the development of a regional strategy aimed at improving the management of forest concessions, based on ITTO guidelines, in these member countries.



Edited
by
Alastair
Sarre

Liberia revokes all forest concessions

Recently elected Liberian President Ellen Johnson-Sirleaf cancelled all forest concessions in the country in February 2006. She has accordingly established the Forestry Reform Monitoring Committee (FRMC) to be led by the Forestry Development Authority (FDA) with the participation and assistance of the Liberia Forest Initiative (LFI). The LFI comprises Liberian and international representatives including international and local civil society.

The FRMC is charged with the responsibility of overseeing, monitoring and verifying the formulation, development and implementation of the measures prescribed as conditions for the resumption of concession grants and allocations. Concession agreements will be restored only after the FRMC, in collaboration with the FDA, "certifies that they are consistent with international standards and basic principles of accountability, transparency, and sustainability as provided for in the Public Procurement and Concession Act of 2005". The FDA and FRMC will "identify appropriate land areas for establishing a concession system based on land-use planning principles, establish an appropriate chain of custody system that tracks logging operators from the point of enumeration to export and work with the international community to define an appropriate tax system (based on international timber prices) and equitable sharing of the benefits with local communities and institute that system".

In May 2003, the UN Security Council imposed a ban on all Liberian timber trade due to its link to the country's civil war. The ban came into effect in July 2003 and has been renewed. The operation of the FRMC is expected to facilitate the lifting of the trade ban. See *TFU 15/3* for a comprehensive report of the forestry situation in Liberia.

Training opportunities at forest tree breeding center

Japan's Forest Tree Breeding Center (FTBC) offers tailor-made training opportunities for researchers in tree improvement and genetic conservation and practitioners in the development of high-quality planting stock. Specific areas include: tree improvement and relevant research practices; genetic conservation and relevant research practices; design, construction and management of nurseries and orchards; management of seeds; propagation techniques including tissue culture; and DNA analysis; etc.

The estimated cost of one-month training is around US\$3000 at headquarters in Ibaraki, Japan (near Tokyo) and US\$4000 on Iriomote Island, Okinawa. This includes accommodation, meals, domestic transportation in Japan and other necessary expenses but excludes the cost of international travel.

FTBC was founded in 1957 under the Forestry Agency and became autonomous in 2001. Its main tasks are: research and development in tree improvement and the promotion of use of the improved planting materials; the conservation of genetic resources; and overseas cooperation. In its fiscal year 2004, a total of 89 foreign trainees visited FTBC.

Contact: Forest Tree Breeding Center (FTBC), attention: H. Nakata; 3801-1 Ishi, Juuou, Hitachi, Ibaraki 319-1301, Japan; Tel 81-294-39 7013; Fax 81-294-39 7306; bxd05436@nifty.com; <http://ftbc.job.affrc.go.jp/html/english/index.html>

Bamboo journal

The Kerala Forest Research Institute (KFRI) has taken over the publication of the *Journal of Bamboo and Rattan* published by Brill Academic Publishers, starting from Volume 5 (2006). To subscribe, or to advertise in the journal, contact: The Circulation Officer, *Journal of Bamboo and Rattan*, KFRI, Peechi, Thrissur 680 653, India; Tel 91-487-269 9037; Fax 91-487-269 9249; jbr@kfri.org.

Trade news

Highlights from the ITTO *Tropical Timber Market Report* (11:6, 16-31 March 2006)

Southeast Asian plywood availability shrinks

Facing declining plywood supply from Indonesia, European buyers have turned to Malaysia to replenish stocks, but Malaysian mills are reported to be producing almost at top capacity. A similar situation is seen in Japan, despite the dull market there. This is putting pressure on FOB prices.

Uncertainty puts investment on hold

The Peruvian currency, the nuevo sol, has devalued in recent weeks due to the proximity of presidential elections and the payment of annual tax liabilities. The uncertainty about who will be Peru's next president has affected new investments and industrial activities in the country. Wood firms are refraining from attending relevant international events and purchasing machinery despite growing international demand for Peruvian manufactured products.

African log prices edge up

West and Central African log prices at the end of March reflected brisk trading conditions and generally stable markets, with an ongoing trend of rising prices for species in strong demand. The log trade continued to be driven by high demand from China, India and, to a lesser degree, Japan, with Europe continuing its long-term reduction in the volume and number of imported tropical timber species. Sawn lumber prices were also on a rising trend, due in part to the strong performance and rising prices of competing Asian species and to increased demand from European buyers closing business for their spring and summer stocks.

Fires in Riau

The Malaysian Ministry of Natural Resources and Environment has expressed concern over haze coming from forest fires in the Indonesian province of Riau, the head of the Riau environmental impact management agency, Khairul Zainal, said recently. Mr Zainal dispatched a 45-member quick-reaction team to monitor the Bukit Batu reserved forests in Riau's Bengkalis district and to put out hot spots. Malaysia has offered to cooperate in putting out hot spots in Riau and to exchange information on how to handle forest fires, which have become a recurrent problem in Indonesia. Data from the Bengkalis district administration showed 75 hot spots in Bengkalis and Rokan Hilir districts and in Dumai.

The ITTO Tropical Timber Market Report is published every two weeks and distributed by email. In addition to news affecting the tropical timber trade, the report contains prices for a wide range of tropical timber products. For a free subscription contact Dr Jairo Castaño at itto-mis@itto.or.jp

Be careful with illegality numbers

Sir

Using a conversion factor of three for sawnwood (admittedly indicative of an inefficient industry) and 2.2 for veneer and plywood, official export data from the Cameroon Ministry of Forests and Fauna (MINFOF) suggest that about 2.1 million m³ of timber were exported from the country in 2003 and 2.3 million m³ in 2004. I'd like to stress the fact that, unlike past data, these figures are consistent with many other sources. In particular, they show minimal discrepancies with the data of the private company managing Douala port (1% for logs and 6% for processed products), as well as with ITTO and COMTRADE data series for the same years. FAO data record lower values.

Official production data in Cameroon are recorded for different purposes by different ministries. MINFOF records data in the SIGIF (*Système Informatique de Gestion de l'Information Forestière*) database, where only forest management units, sales of standing volume, and some officially delivered timber recovery permits are registered. The Ministry of Finance (MINEFI), on the other hand, registers any timber for which taxes are due. That is why, in recent years, values registered by MINEFI have often been higher than values recorded in the SIGIF: special permits and wood harvested in some community forests (generally not exported) must be added to the SIGIF data. In 2004, values registered in SIGIF have been very consistent with those recorded as exports.

Once you have looked at production and export data, take a look at import data: that is, volumes declared by those countries importing timber originating in Cameroon. The first thing you will note is that different sources show significant discrepancies compared to export data. This is no surprise, because there are many factors affecting these figures: conversion between kilograms and cubic metres, differences in the way timber is classified, confusion between timber produced and exported in Cameroon against timber leaving Douala but harvested in the Central African Republic or Congo (China is the best example of this), and many others (for a complete list, see Goetzl 2005¹). However, it is interesting to note that if you use the best available data from all the various sources, volumes reported by importing countries are lower than export data declared by Cameroon. The message is this: there is no clear sign that the world is registering more incoming wood than is registered as outgoing from Cameroon.

It must also be remembered that internal consumption is mostly absent from the above picture. Estimates do exist, but they are unreliable.

Why this letter? Because recent documents reporting the rate of illegal logging in Cameroon—timber that is

harvested, transported, processed, exported and imported illegally—are still using a 50% figure.

If half as much again of the official export volumes given above (which I invite you to cross-check) is illegal, this implies that more than 1 million m³ (more than 30 000 truckloads) of timber are harvested, transported, processed and exported without being registered in the SIGIF, without paying taxes at MINEFI, without being detected on the roads, without being registered at Douala (both by the government and by the private company managing the port), and finally without being registered by the importing country. All of this, at the same time!

Indeed, illegalities can be detected all along the production chain from the forest to foreign ports, starting with some forest management units which are up and running but which were never granted according to the law, or the four timber recovery permits (outlawed in 1999 by the same ministry delivering them) officially registered in the 2004 SIGIF data, or the more than 30 special authorizations already delivered in 2005. But if constructive solutions are what we are looking for, I believe it is time to break the production chain down into little pieces, clean the rings, and build it again. Then, perhaps, people won't find it so easy to wave around the "50%" number without demonstrating its veracity.

I'd be pleased to hear the views of your readers.

Mimbimi Esono Parfait

akung34@yahoo.fr

1 December 2005

¹ Goetzl, A. 2005. Why don't trade numbers add up? *Tropical Forest Update* 15/1.

International community must support Liberia

Sir

The most recent edition (*TFU* 15/3) was the best of the 2005. This is not just because it was partly focused on the forestry sector of my country (Liberia), but also because the other issues covered were of great interest to readers. The edition's emphasis on sustainable forest management, the achievement of which is still a major problem in most of the tropics, is commendable.

Having known the factors militating against sustainable forest management in Liberia, it is my sincere hope that the recommendations presented by the ITTO mission will be taken seriously by all stakeholders.

Abednego Gbarway

20 December 2005

Participatory action research for community-based natural resource management

28 June–4 July 2006

Cost: US\$1050

Thailand

The objectives of this study tour are to: demonstrate how local people apply action research in natural resource management; gain an understanding of participatory action research and to explore the different models and practices involved; discuss the challenges and issues that arise when communities conduct action research in natural resource management; explore the roles of different stakeholders in participatory action research in natural resource management; evaluate the impact of participatory action research on sustainable natural resource management; and review the challenges in developing participatory action research practices within participants' own contexts.

Contact: Poom Pinthep, Regional Community Forestry Training Center (RECOFTC), Tel 66-2-940 5700 Ext. 1234; contact@recoftc.org

Leadership and adaptive management: supporting decentralised forest and nature management in rural development

2 October–10 November 2006

Cost: first module (three weeks): €2750 (Wageningen, the Netherlands)

second module (three weeks): €2400 (Africa)

This course offers participants the opportunity to reflect on current work approaches and develop skills and practices supporting collaborative forest management with active stakeholder participation. In particular, the course should enable participants to: build an awareness of their own skills and competencies for leading innovations in multi-disciplinary work approaches; practice a broad range of participatory methods and adaptive management tools; understand and assess the implications of up-scaling participation to working with diverse stakeholder groups at various levels; design, plan and implement change processes with small teams to support decentralised management practices in NRM; and assess the impact of their own values and personal learning styles and further develop their competence as team leaders.

Contact: International Agricultural Centre, PO Box 88, 6700 AB Wageningen, the Netherlands; Tel 31-317-495 495; Fax 31-317-495 395; training.iac@wur.nl; www.iac.wur.nl

Interactive forest and nature policy in practice: managing multi-stakeholder learning in sector-wide approaches and national forest programs

27 November–8 December 2006

Southeast Asia (probably Indonesia)

Cost: €3100

The overall aim of this course is to provide participants with insights, knowledge and skills for designing and managing interactive policy development and implementation processes in forest and nature management. In particular, the course should enable participants to: critically examine different interactive policy processes such as national forest programs and sector approaches; understand and assess the implications of up-scaling participation to working with diverse stakeholder groups at regional and national levels; identify the types of institutional change and support necessary for effective interactive policy facilitation and improved governance; assess the impact of their own values and personal learning styles; and further develop their competence as process managers.

Contact: International Agricultural Centre, PO Box 88, 6700 AB Wageningen, the Netherlands; Tel 31-317-495 495; Fax 31-317-495 395; training.iac@wur.nl; www.iac.wur.nl

Forest and certification summer training program

17–21 July 2006

Oxford, UK

This program provides a range of courses dealing with current issues for those involved in forest management, certification and sustainable natural resource management. The courses are based on up-to-date practical experience and are designed to bring together key players in a range of fields to provide a unique training opportunity.

Training courses are available in the following subject areas:

- introduction to certification and standards (one day; cost = £225);
- forest certification in practice (4- or 5-day options; cost = £850 & £900);
- responsible purchasing in practice including product tracing and chain of custody (two days; cost = £425);
- identifying and managing high conservation value forests (two days; cost = £425); and
- climate change policy and forests (one day; cost = £250).

Participants can select the combination of courses that suits their needs and attend them in one integrated event.

Contact: ProForest, South Suite, Frewin Chambers, Frewin Court, Oxford, OX1 3HZ, UK; Tel 44-1865-243 439, Fax 44-1865-244 820, info@proforest.net; www.proforest.net

Enterprise development and marketing of natural resource products

18 July–1 August 2006

Bangkok, Thailand

Cost: US\$2750

The objectives of this course are to: provide an understanding of the key elements which influence community enterprise development and the linkages with sustainable rural livelihoods; develop participants' capacity to plan and implement sound micro and small enterprise development programs; increase participants' knowledge and understanding of the process involved in the marketing of natural resource products to enable the establishment of sound rural enterprises; provide the analytical skills and knowledge to research potential products, the market situation, and market entry; and provide opportunities for participants to share experiences and ideas on community-based enterprises and the ability to convert these discussions into workplace outcomes.

Contact: Somjai Srimongkontip, RECOFTC; Tel 66-2-940 5700 Ext. 1234; contact@recoftc.org

Participatory management of protected areas

11–23 September 2006

Bangkok, Thailand

Cost: US\$2600

This course is designed to provide forestry, natural resource and conservation professionals with a deeper understanding of why it is important to include local communities in the management of protected areas and to better understand how this can be done. It will also help participants gain the analytical skills needed to enable them to better conceptualise and overcome problems in the application of participatory protected area management within their own specific situations. The objectives of the course are to: introduce key concepts and issues in participatory management of protected areas; increase understanding on important approaches in implementing protected area management; and build basic skills in participatory planning and design of conservation initiatives.

Contact: Ronnakorn Triraganon, RECOFTC; Tel 66-2-940 5700 Ext. 1234; contact@recoftc.org

Introducing community forestry: innovative ideas, practices and methodologies

9–20 October 2006

Kathmandu, Nepal

Cost: US\$2000

The objectives of this course are to: provide international participants with opportunities to identify and analyse key community forestry concepts, strategies and principles in order to gain a broader and deeper understanding of community forestry; share experiences, knowledge and skills in community forestry among a diverse group of international participants; and explore and highlight the evolution of 'generational' issues within the Nepalese context and link lessons learned to participants' own country experiences and developments.

Contact: Peter Stephen, RECOFTC, Bangkok, Thailand; Tel 66-2-940 5700 Ext. 1234; contact@recoftc.org; or Netra Timsina, ForestAction, Kathmandu, Nepal; Tel 977-1-555 0631; npt@forestaction.wlink.com.np

▶ 19–21 April 2006. **International Conference on the Roles of Forests in Rural Development and Environmental Sustainability.** Beijing, China. **Contact:** *Symposium Secretariat, Ms Guan Xiuling or Ms Feng Caiyun, The Summer Palace, Beijing 100091, China; Tel 86–10–6288 9819 or 6288 9367; Fax 86–10–6288 9817; csf_org@forestry.ac.cn*

▶ 19–21 April 2006. **1st International Symposium on Mangroves as Fish Habitat.** Miami, Florida, USA. **Contact:** *Symposium Organizers (NOAA); Tel 1–305–361 4255; Fax 1–305–361 4562; mangrovesasfishhabitat@oaa.gov; www.rsmas.miami.edu/conference/mangrove-fish-habitat/*

▶ 26–27 April 2006. **International Tropical Forest Investment Forum: Issues and Opportunities for Investment in Natural Tropical Forests.** Cancún, Mexico. **Contact:** *Mr Paul Vantomme, ITTO Secretariat; Fax 81–45–223 1111; vantomme@itto.or.jp or Ms Alicia Judith Gomez Anaya or Mr Ramón Carrillo Arellano, CONAFOR; Tel 52–33–3777 7047; Fax 52–33–3777 7028; agomez@conafor.gob.mx and rcarrillo@conafor.gob.mx or Michael Jenkins, Forest Trends; mjenkins@forest-trends.org*

▶ 1–12 May 2006. **14th Session of the UN Commission on Sustainable Development.** New York, USA. **Contact:** *UN Division for Sustainable Development; Tel 1–212–963 2803; Fax 1–212–963 4260; dsd@un.org; www.un.org/esa/sustdev/index.html*

▶ 29 May–2 June 2006. **40th Session of the**

International Tropical Timber Council and Associated Sessions of the Committees. Mérida, Mexico. **Contact:** *Information Officer (Mr Collins Ahadome), ITTO Secretariat; Tel 81–45–223 1110; Fax 81–45–223 1111; itto@itto.or.jp; www.itto.or.jp*

▶ 5 June 2006. **World Environment Day: Deserts and Desertification.** **Contact:** *Elisabeth Guilbaud-Cox, UNEP; Tel 254–20–62 3401/62 3128; Fax 254–20–62 3692/62 3927; elisabeth.guilbaud-cox@unep.org; www.unep.org/wed/2005/english/About_WED_2005/*

▶ 19–20 June 2006. **Scoping Dialogue on Forests and Poverty Reduction.** South Africa. **Contact:** *The Forest Dialogue, New Haven, USA; Tel 1–203–432 5966; info@theforestdialogue.org; www.theforestdialogue.org*

▶ 26–30 June 2006. **24th Session of the Latin American and Caribbean Forestry Commission.** Santo Domingo, Dominican Republic. **Contact:** *Carlos Marx R. Carneiro; carlos.carneiro@fao.org; www.fao.org/forestry/site/31107/en*

▶ 3–8 July 2006. **16th Meeting of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Plants Committee.** Lima, Peru. **Contact:** *CITES Secretariat; Tel 41–22–917 8139; Fax 41–22–797 3417; cites@unep.ch; www.cites.org/eng/news/calendar.shtml*

▶ 7–13 July 2006. **22nd Meeting of the CITES Animals Committee.** Lima, Peru. **Contact:** *CITES Secretariat; Tel 41–22–917 8139;*

Fax 41–22–797 3417; cites@unep.ch; www.cites.org/eng/news/calendar.shtml

▶ 9–14 July 2006. **Catchments to Coast International Conference.** Cairns, Australia. **Contact:** *Sally Brown, Conference Coordinator; Tel 61–7–3201 2808; Fax 61–7–3201 2809; sally.brown@uq.net.au; www.catchments.org.au/*

▶ 26–29 September 2006. **Patterns and Processes in Forest Landscapes: Consequences of Human Management.** University of Bari, Italy. **Contact:** *Prof Giovanni Sanesi, Dip Scienze delle Produzioni Vegetali, Faculty of Agricultural Science, Program in Forestry and Environmental Science, University of Bari, Via Amendola 165/A, Bari, Italy 70126; Tel 39–80–544 3023; Fax 39–80–544 2976; www.greenlab.uniba.it/events/iufro2006*

▶ 26–30 September 2006. **X Congreso Latinoamericano de Estudiantes de Ciencias Forestales (10th Latin American Students Congress of Forest Science).** University of Pinar del Rio, Cuba. **Contact:** *Ing. Suriel Cruz Torres, Marti Final 1270, Pinar del Rio, Cuba; suriel@af.upr.edu.cu; Tel 53–82–77 9661; Fax 53–82–77 9353*

▶ 1–4 October 2006. **International Workshop on Climate Change: Opportunities and Challenges for Forest Mitigation Projects in Sub-Saharan Tropical Africa.** Busua, Ghana. **Contact:** *Mr Emmanuel Ze Meka, ITTO Assistant Director for Reforestation and Forest Management; zemeka@itto.or.jp; www.itto.or.jp/live/PageDisplayHandler?pageId=223&id=1136*

▶ 2–6 October 2006. **International Conference on Managing Forests for Poverty Reduction: Capturing Opportunities in Forest Harvesting and Wood Processing for the Benefit of the Poor.** Ho Chi Minh City, Vietnam. Sponsored by ITTO and others. **Contact:** *Thomas Enters, FAO Regional Office, Bangkok, Thailand; Thomas.Enters@fao.org*

▶ 4–7 October 2006. **Ecosystem Goods and Services from Planted Forests.** Bilbao, Spain. **Contact:** *joachim.schmerbeck@waldbau.uni-freiburg.de; www.waldbau.uni-freiburg.de/bilbao.html*

▶ 30–31 October 2006. **6th Dialogue on Forest Certification.** Washington, DC, USA. **Contact:** *The Forest Dialogue, New Haven, USA; Tel 1–203–432 5966; info@theforestdialogue.org; www.theforestdialogue.org*

▶ 7–10 November 2006. **2nd Congreso para la Prevención y Combate de Incendios Forestales y Pastizales en el MERCOSUR.** Malargüe, Argentina. **Contact:** *Diligencia Viajes SA, Av Pte Roque Sáenz Peña 616, piso 8, Of 812, CP 1036, Ciudad Autónoma de Buenos Aires, Argentina; Tel 54–11–4342 9331/2057; Fax 54–11–4342 9546; viajesd@infovia.com.ar*

▶ 6–11 November 2006. **41st Session of the International Tropical Timber Council and Associated Sessions of the Committees.** Yokohama, Japan. **Contact:** *Information Officer (Mr Collins Ahadome), ITTO Secretariat; Tel 81–45–223 1110; Fax 81–45–223 1111; itto@itto.or.jp; www.itto.or.jp*

▶ 6–17 November 2006. **12th Conference of the**

Parties to the United Nations Framework Convention on Climate Change and 2nd Meeting of the Parties to the Kyoto Protocol. Nairobi, Kenya. **Contact:** *UNFCCC Secretariat; Tel 49–228–815 1000; Fax 49–228–815 1999; secretariat@unfccc.int; www.unfccc.int*

▶ 13–17 November 2006. **3rd International Fire Ecology and Management Congress.** San Diego, USA. **Contact:** *Detlef Decker, Washington State University; Tel 1–509–335 2811; ddecker@wsu.edu; http://emmps.wsu.edu*

▶ 16–22 April 2007. **2nd International Symposium on Ecological Restoration** (2º Simposio Internacional sobre Restauración Ecológica). Santa Clara, Cuba. **Contact:** *Grecia Montalvo o Alberto Torres; sisre@ccb.vcl.cu*

▶ 16–27 April 2007. **7th Session of the United Nations Forum on Forests.** New York, USA. **Contact:** *UNFF Secretariat; Tel 1–212–963 3160; Fax 1–917–367 3186; unff@un.org; www.un.org/esa/forests*

▶ 3–15 June 2007. **14th Meeting of the Conference of the Parties to CITES.** The Netherlands. **Contact:** *CITES Secretariat; Tel 41–22–917 8139; Fax 41–22–797 3417; cites@unep.ch; www.cites.org/eng/news/calendar.shtml*

▶ 1 November 2007. **8th Session of the Conference of the Parties to the UN Convention To Combat Desertification (COP-8).** Spain. **Contact:** *UNCCD Secretariat; Tel 49–228–815 2800; Fax 49–228–815 2898; secretariat@unccd.int; www.unccd.int*



a close friend and mentor of Mr Kotari. The two met to discuss Japanese international forest policy, and in 1974 were instrumental in the establishment of the Japanese International Cooperation Agency (JICA), Japan's main overseas development agency. Mr Kotari was offered the job of creating and leading a section within JICA on agriculture and forestry. However, he wanted to maintain his freedom of speech and declined the offer, although he did later become an (unpaid) advisor to the organisation in order to work to increase Japan's overseas development assistance.

Meanwhile, countries in the European Community were becoming concerned about logging in Africa, particularly by European-owned companies. A critical mass was building towards increased international cooperation on the tropical timber trade. During the fourth session of the UN Conference on Trade and Development in Nairobi in 1976, agreement was reached on an Integrated Program for Commodities. This stipulated that agreements for 18 specified commodities—including tropical timber—would be negotiated or renegotiated with the principal aim of avoiding excessive price fluctuations and stabilising commodity prices at levels remunerative to the producers and equitable to consumers. Agreements were quickly concluded for some of these—such as jute and sugar—but an agreement on tropical timber proved much more problematic.

"Tropical timber was an unusual type of commodity," says Mr Kotari. Unlike most others, tropical timber was far from uniform in quality, distribution or end-use—the variety was virtually endless. Moreover, and perhaps most importantly, tropical timber was derived largely from natural forests and it became increasingly difficult to ignore questions related to the sustainability of the resource base. Globally, tropical deforestation and degradation were starting to generate widespread concern.

"You could not treat timber separately from its source, the forest," says Mr Kotari. "But this was a new concept for a commodity agreement; inevitably, negotiations for an agreement were likely to be protracted."

So it proved. It took ten years before an agreement came into effect (in 1986). Even then it took a concerted effort by a number of independent visionaries, such as Mr Kotari, Alf Leslie, Terence Hpay and Duncan Poore, to bring it into being.

To what effect?

"In 1985, FAO decided to establish something called the Tropical Forest Action Plan (TFAP)," said Mr. Kotari. "Everyone thought this was a good idea, but it was about developing plans, which then had to be implemented. In 1992, the TFAP evolved into national forest action programs, which were to be implemented by governments with the support of the international community. ITTO not only

makes policies, it actually helps countries to implement them. This is the importance of ITTO."

Even this assistance is not enough, though, says Mr Kotari.

"The gap between developed and developing countries is not growing smaller," he says. "So it's very important that cooperation between countries grows, not diminishes. A little bit of self-sacrifice from developed countries is needed. If one country says 'we want to keep the status quo', or 'we want to grow even richer at the expense of others', then the gap won't get smaller, it will get bigger. And this is not good for the planet. Therefore, increasing the financial contributions by developed countries for the implementation of country-level projects is a priority for ITTO."

Mr Kotari has been influential in the negotiation of all three of the ITTAs agreed so far (1983, 1994 and 2006). He is the only person to have served as a delegate at all three negotiations. According to Manoel Sobral, ITTO's current executive director, Mr Kotari has played a vital role.

A little bit of self-sacrifice from developed countries is needed.

"Mr Kotari has been a close friend and advisor both to me and to my predecessor, Dr Freezailah," he says. "We have benefited very much from his strategic view. Particularly during the negotiations of the agreement, he was extremely important in identifying paths and ways towards consensus."

Consensus underpins not only the agreement, but also the operation of the Organization itself. This is the key to future success, says Mr Kotari.

"I was rather surprised by the heated discussions at the last round of negotiations," he says. "Nevertheless, of all the international meetings I've experienced, the atmosphere in ITTO is the most intimate. All members are able to express their views as equal partners. More than anything, perhaps, this goodwill must be nurtured and maintained if ITTO is to build on past achievements."

This Out on a limb was prepared by Alastair Sarre based on an interview with Katsuhiko Kotari in March 2006.

Out on a limb



How ITTO began

WAR DOES STRANGE THINGS to people. In the case of Katsuhiko Kotari, one of ITTO's founding fathers, it gave him a lifelong concern for tropical forestry.

Graduating in 1941, Mr Kotari's forestry career was put on hold as Japan fought the Allies in World War II. He was shipped to an anti-aircraft battery located in Rabaul on the New Guinean island of New Britain. He didn't know it at the time, but fighting for the enemy in the South Pacific was Australian Alf Leslie, another of ITTO's founding fathers.

"We probably shot at each other," says Mr Kotari. Fortunately for ITTO, they both missed. And they later became good friends.

You could not treat timber separately from its source, the forest ... But this was a new concept for a commodity agreement; inevitably, negotiations for an agreement were likely to be protracted.

When the fighting ended, Mr Kotari returned to Japan armed with books on the trees of New Guinea and a concern for their management that would later find expression in an international treaty. This article presents Mr Kotari's version of events leading up to the first International Tropical Timber Agreement (ITTA) in 1983, and his views on ITTO as it enters its 20th year.

The changing timber economy

After the war, Mr Kotari worked in Japan's Forestry Agency until 1958, when he retired from the agency. He had worked mainly in the national forests, but increasingly his attention was drawn to the global arena. Japan's economy was booming. Log imports—from Southeast Asia, the USA and Russia—were escalating at an extraordinary rate. It was a time of rapid change in the international forestry sector. Yet most Japanese foresters remained focused on the national forests, and not many knew much about international issues.

Mr Kotari travelled frequently to Europe, Russia,

and East and West African countries, as well as to various parts of Asia, studying their forests and timber sectors. Some of these countries were in the process of winning their independence from colonial powers, and Mr Kotari was interested in how that would affect the timber trade. He also visited Brazil, because he recognized the importance of the Amazon in the future timber supply.

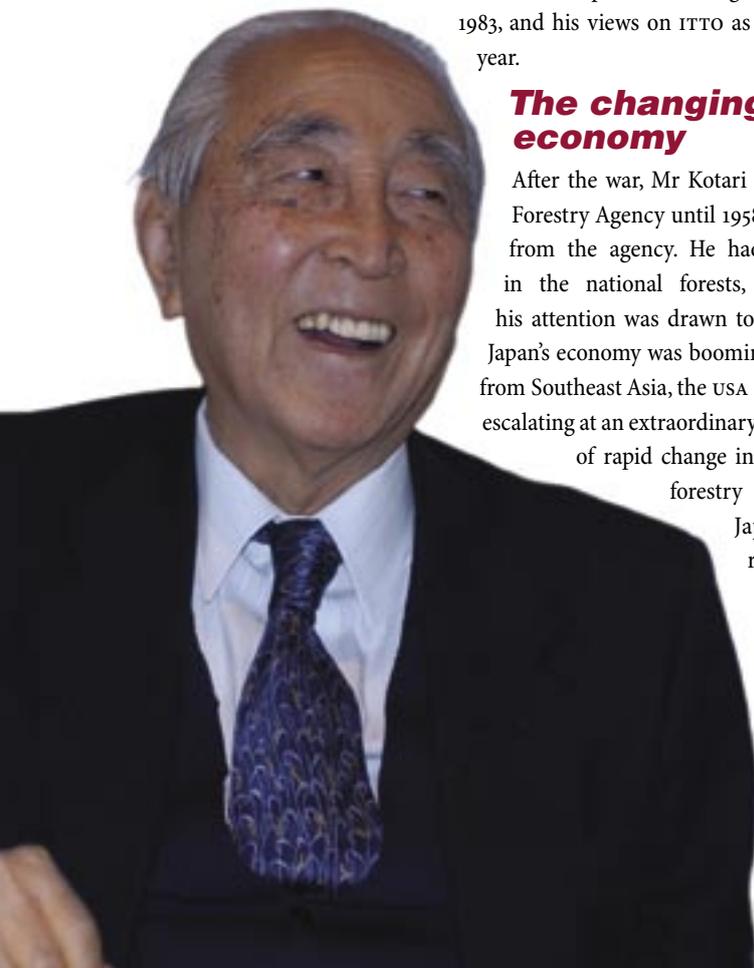
The more he studied the situation overseas, the more he worried about the policy of many developed countries, particularly Japan, towards the tropical timber trade and its effect on developing countries. He realised that the new industrial style of logging was doing enormous damage to tropical forests and the social fabric of those countries, without really benefiting their economies, and he also knew that Japanese demand would not decrease in the near future. Something needed to be done.

In 1973 a meeting was held by the United Nations Economic Commission for Asia and the Far East (later to become the UN Economic and Social Commission for Asia and the Pacific—ESCAP) that was to shape the future development of international forest policy.

"At that meeting, the problem of log exports/imports was discussed," says Mr Kotari. "It was a difficult meeting, because many countries were against Japan and its policy of importing logs from producer countries. We were buying mainly in log form and then converting the logs within Japan to other uses such as plywood. This meant that most of the profits and economic benefits went to Japan, while the producer countries were destroying their forests."

At that meeting, says Mr Kotari, many of the elements that were to become tenets of ITTO were discussed—such as wood-product research, technology transfer, forest industry development, improving forest management, capacity-building, and market transparency.

A year earlier, in 1972, the Club of Rome had published its report *Limits to growth*, which predicted that the world would start running out of resources as its population and consumption increased. Saburo Okita was a member of the Club of Rome. He was a man of very high standing both within and outside Japan, as well as



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