



# TROPICAL FOREST U · P · D · A · T · E

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Conservation and Sustainable Development of Tropical Forests*

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## Nailing a New Agenda

The 29th session of the International Tropical Timber Council, held in Yokohama last October/November, was a rowdy affair. For six days, delegates from 44 of the most important tropical timber producing and consuming countries, and representatives of non-governmental organisations, hammered away at issues that would decide where ITTO should go from here.

The outcome was worth the beating, with the Council forging 14 new decisions. The fact that this number is a record demonstrates that Council members remain committed to the objectives of the Organization. But the nature of the decisions should also give heart to the tropical forestry community.

Foremost was the one relating to ITTO's Objective 2000. The Council reiterated its "full commitment to moving as rapidly as possible towards achieving exports of tropical timber and timber products from sustainable managed sources". It outlined some initial, concrete measures that are to be pursued, including: the establishment of reduced impact logging training schools; an increase in ITTO's program of sustainable forest management demonstration forests; the preparation of action plans in member countries; the development of a format to facilitate reporting of progress in implementing ITTO's criteria and indicators; and the setting up of Objective 2000 boards in member countries (see pages 3-4).

The Council has raised and debated many of these measures in the past and is now committing firmly to action. Such measures could even be formulated as targets to be achieved within a three-year period, as proposed by the Executive Director, Dr Sobral, during his opening speech at the session (see page 3). The Council will have an opportunity to set itself such targets



Timber is widely used in Japanese housing – softwoods for construction and hardwoods inside. One of the many elements in the global forests agenda must be expanding high-value markets for tropical timber to help promote and pay for sustainable forest management (see, for example, pages 18-19).

when it considers a new action plan for the Organization next year.

Also indicative of the Council's energy is the fact that five other draft decisions were debated during the session and will be revisited when the Council next convenes. These cover critical issues such as illegal logging and the illegal timber trade, certification, and a framework for guidelines on the management of secondary tropical forests.

The Council continues to stress the importance of cooperation between international organisations and processes (see page 3). Perhaps the most influential international organisation of all, the World Bank, is featured in this edition. Bank officials Juergen Blaser and Jim Douglas outline some of the findings of a wide-ranging review of the Bank's forest policy (pages 9-14); we will bring you the revamped policy itself when it becomes available. Also in this edition, we look at ITTO's initial work to take its criteria and indicators to ground level (pages 4-6) – a

related decision to be revisited by Council at the next session would bring considerable new resources to bear on this work. We also present an interview with the Secretary General of the Malaysian Department of Primary Industries, Datuk Haron bin Siraj.

ITTO enters the next decade recognising, as the Council put it, that "progress towards [Objective 2000] has not been sufficient". The bulk of the work – translating policies into action – still lies ahead. The clamour should only grow louder.

**Alastair Sarre**  
Editor

### Inside this issue

- ◆ Council gets to work
- ◆ Criteria and indicators in the field
- ◆ Interview with Datuk Haron
- ◆ World Bank's world view

# Council Moves Forward on Objective 2000

*ITTO continues to make sustainable tropical forest management its pivotal objective*

The International Tropical Timber Council has approved concrete measures to help fulfil its pledge to achieve exports of tropical timber and timber products from sustainably managed sources. This pledge is known as ITTO's Objective 2000.

The Council, which is ITTO's governing body, meets every six months to consider developments in international forest policy and its wide-ranging project program. Its 29th Session, which was held in Yokohama, Japan on 30 October–4 November 2000, was attended by delegates from 44 member countries and by 23 observers from United Nations agencies, environmental non-governmental organisations, and trade and industry bodies.

In moving from dialogue to action, the Organization will provide assistance to producing member countries, on request, to identify, in each country, those factors which most severely limit progress towards sustainable forest management and to formulate action plans to overcome these constraints.

It will facilitate the implementation of these action plans through measures such as demonstration projects and reduced impact logging training facilities. Member countries are expected to submit project proposals for such measures at future Council sessions.

## **Objective 2000 boards**

The Council also authorised the Executive Director to assist individual producer countries, on request, to set up Objective 2000 boards to build broad-based support and high-level commitment to the achievement of the objective. According to Dr Sobral, ITTO's Executive Director, such boards will have several functions:



The Executive Director, Dr Sobral (left), the Chair, Mr Rae-Kwon Chung (Korea), and the Vice-chair, Madame Josefina Takahashi Sato (Peru), listen to an intervention from the floor during the latest Council session. Photo: A. Sarre

- they will raise the profile of ITTO's Objective 2000 in the countries concerned;
- they will provide a domestic focus for efforts in achieving Objective 2000;
- they will marshal internal resources to ensure they are used to best effect in achieving Objective 2000; and
- they will report to ITTO on the progress being made.

Several ITTO producer countries have already expressed interest in the idea.

## **ITTO to Send Mission to Indonesia**

Following a request from Indonesia's Minister for Agriculture and Forestry, the Council decided to send a four-person team of experts to assist the government there in developing plans for sustainable forest management.

According to the Council decision, this technical mission will "assist the Government of Indonesia to identify ITTO support, especially in formulating forestry action plans to achieve sustainable forest management".

Under the terms of reference, the mission will assist the formulation of pilot programs to restructure the forest industry, including downsizing the industry, improving industrial competitiveness, establishing forest plantations,

recalculating timber values, and decentralising forest management. It will also assist the country in formulating an action plan with strong measures to combat illegal logging.

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## Mangrove Conservation Highlighted

ITTO will develop a workplan to assist its members in the conservation, rehabilitation and use of mangroves, following another decision of the Council at its 29th session.

The workplan will aim to increase awareness among members of the importance of mangrove conservation, encourage cooperation between members to intensify ITTO activities in this field, and promote the sustainable use of mangrove ecosystems. Members are being encouraged to prepare project and pre-project proposals in this area for consideration by the Council at future sessions.

## Cooperation with ATO

In its deliberations, the Council emphasised the need to strengthen cooperation between ITTO and the African Timber Organization (ATO).

With this in mind, it requested the Executive Director to:

- assist ATO in the assessment and refinement of its principles, criteria and indicators for the sustainable management of African forests and to make them consistent with the ITTO guidelines and criteria and indicators;
- assist ATO in organising a regional workshop to review and adapt the ITTO principles, criteria and indicators for sustainable management to African forests for use by the ATO; and
- formulate a project proposal for developing a framework of cooperation between the two organisations.

## New ITTO Action Plan

Action plans were certainly popular with the Council during the session. Apart from approving their formulation in those member countries requesting ITTO assistance, the Council has embarked on a process of developing a new action plan for the Organization itself. The Libreville Action Plan, which currently guides the work of the Organization, expires at the end of 2001.

The starting point for the new plan will be a working paper to be prepared by the Executive Director with the assistance of two consultants, which will then be considered by a 16-member

expert panel comprising representatives of producer and consumer countries and of non-governmental and industry organisations. The draft action plan prepared by the expert panel will be considered by the Council at its 31st session, to be held in Yokohama next November.

## International Forums

In a move to maintain the Organization's relevance in the international forests debate, the Council has requested the Executive Director to convene a second 16-member expert panel to consider and report to Council recommendations for ITTO's involvement in relevant international and regional organisations and forums.

In the interim, it has authorised the Executive Director to continue to participate in such forums, particularly the United Nations Forum on Forests, the Inter-Agency Task Force on Forests and the Collaborative Partnership on Forests.

## Other Decisions

The Council moved to strengthen ITTO's communication and outreach activities, authorising the Executive Director to develop communication outputs to promulgate the messages on progress made to date towards sustainable forest management in member countries and to strengthen linkages with

relevant organisations. In addition, it reached decisions on a number of matters related to the administration of the Organization.

## Contributions

Countries made voluntary contributions amounting to US\$6.94 million to finance the 24 projects, pre-projects and activities approved and funded at the Session. These included: the Government of Japan (US\$4.81 million); the Government of Switzerland (US\$890,000); the Government of the USA (US\$104,000); the Government of Australia (US\$50,000); the Government of the Republic of Korea (US\$30,000); and the Government of Sweden (US\$9,500). The Trade Advisory Group, which comprises tropical timber trade organisations, pledged US\$6,500. In addition to these new contributions, up to US\$2 million was made available from Sub-account B of the Bali Partnership Fund for specific activities arising from the decisions. ■

## Three-year Targets Proposed

ITTO can achieve significant improvements in the field implementation of sustainable forest management within three years, according to the Organization's Executive Director.

Speaking at the opening of the session, Dr Manoel Sobral Filho proposed six achievable, measurable, medium-term targets to maintain momentum towards sustainable forest management. These are:

- 1) the establishment of 20 additional demonstration areas for sustainable tropical forest management (ITTO has already established some 35 such areas in 18 tropical countries);
- 2) the establishment of reduced-impact-logging training schools in each of the three tropical regions with the ability to train hundreds of logging professionals;
- 3) the production of annual reports on the status of sustainable forest management at the national level applying the ITTO criteria and indicators for sustainable forest management;
- 4) the assessment of sustainable forest management in 500 forest management units using the ITTO criteria and indicators;

- 5) the development of guidelines for the rehabilitation of degraded tropical forests and a project program in place to rehabilitate 1 million hectares; and

- 6) the expansion of ITTO-sponsored transboundary conservation reserves to a worldwide area of 15 million hectares.

The processes are already in motion to achieve some of these targets by the end of 2003, said Dr Sobral, and decisions taken during the session by the Council will provide further impetus for their achievement. For example, a project was approved to "consolidate the processes to ensure the sustainable development of the natural protected areas of Tambopata and Madidi and their areas of influence" on either side of the border between Peru and Bolivia; the reserve will cover some 2.85 million hectares. Another project funded at the session will strengthen a reserve covering 1.4 million hectares on the border between Indonesia and Malaysia on the island of Borneo, bringing the total forest area covered by ITTO-sponsored transboundary conservation reserves to nearly 8 million hectares.

# Bringing C&I to Ground

*Field tests and a series of ITTO workshops to train trainers in applying criteria and indicators are bringing sustainable forest management concepts to the field*

by Dr B.C.Y. Freezailah<sup>1</sup>,  
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**The first trainees:** participants at the first workshop on applying ITTO's criteria and indicators pose for a photo outside the training centre in Kuala Lumpur, Malaysia. Will these people form the core of in-country efforts to apply criteria and indicators for sustainable forest management?

ITTO pioneered the development of criteria and indicators for assessing sustainable tropical forest management. In 1991 it published *Criteria for the measurement of sustainable tropical forest management*; in 1998 it adopted a revised version of these and published them as *Criteria and indicators for sustainable management of natural tropical forests*.

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*'PKKT in Malaysia could meet most of the information needs for most of the indicators. A driving force behind these developments appears to be that the company is working towards obtaining forest certification.'*

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But worthy though these documents are, they will do little for sustainable forest management if they sit on library shelves. A major task for ITTO is to assist their application in real-world forestry operations.

## What are Criteria and Indicators?

Criteria and indicators (C&I) are tools for assessing trends in forest condition and forest management. Implicitly, they define sustainable forest management, conceptually and on the

ground, and provide a framework for describing, monitoring and evaluating progress towards sustainable forest management (Durst and Qiang Ma 2000).

The C&I of ITTO and others have helped in the development of sustainable forest management policy, but their impact at ground level has been less apparent (Cassells and Hall 2000). Some years ago, ITTO realised that more assistance was needed if member countries were to make rapid progress towards achieving sustainable forest management. One response was the formulation, in 1999, of the *Manual for the application of criteria and indicators for sustainable management of natural tropical forests* in two parts: Part A for measuring and describing the C&I at the national level, and Part B for doing the same at the forest management unit (FMU) level. The basic purpose was to assist forest managers to assess the sustainability of forest management at both the national and field levels.

How useful is this manual and can we facilitate its use? At its 26th session (May-June 1999), the International Tropical Timber Council requested the Executive Director to organise 1) the testing of the manual in the field and 2) workshops to train trainers in its application. We were subsequently appointed to assist the Executive Director in this task; Marco Vinueza was selected to assist in running the workshop and field-testing in Ecuador.

## Scope of Work

The task had several components:

- conducting workshops in Malaysia, Indonesia and Ecuador to provide training to ‘trainers’ on the effective use of the manual;
- testing the manual under field conditions in the three countries in conjunction with the workshops;
- assessing the clarity of the manual for implementation based on the experience gained during the workshops and field-testing; and
- recommending revisions that might make the manual more user-friendly to facilitate its wide use.

Field-testing of the manual was carried out in Malaysia in March 2000 and the first workshop was convened in Kuala Lumpur in April. The second workshop was held in Bogor, Indonesia, in July, with the preceding week devoted to field-testing; the Indonesian element of the work was conducted in collaboration with the Center for International Forestry Research. In Ecuador, the field-testing and workshop were conducted in September.

## Field-testing the Manual

The field-testing of the manual at the national level in Malaysia was conducted with officials at the headquarters of Peninsular Malaysia’s Forestry Department. In Indonesia, the examination took place with officials of the Ministry of Forestry and representatives of trade and industry associations. In Ecuador, national-level field-testing was undertaken at the office of the Sustainable Forest Management Corporation (COMAFORS) and was attended by the Under-secretary and other officials of the Ministry of Environment and by representatives of industry and non-governmental organisations (NGOs). We received the full cooperation of officials in all three countries, including access to all relevant information.

Field-testing at the FMU level required the identification of forest owners or concessionaires willing to accept detailed scrutiny of their operations. In Malaysia, the testing was conducted over two days at the concession of Kumpulan Pengurusan Kayu Kayan Terengganu Sdn Bhd (PKKT) on the east coast of Peninsular Malaysia. In Indonesia, field-testing was conducted

at three concessions: Sumalindo, Inhutani I and Inhutani II in West Kalimantan. There is no system of forest concessions in Ecuador and most production forests are privately owned. The two forests selected for field-testing there were in Esmeraldas Province and comprised the La Maironga forest, owned by the Fundacion Forestal Juan Manuel Durini (FFJMD), and the Iscuande forest, owned by Enchapes Decorativos Sociedad Anonima (ENDESA).

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*‘... the FMUs examined were at the upper end of the scale in their respective countries in their commitment to sustainable forest management and their ability to meet the data requirements of the manual. In other words, they may not reflect the situation of an average FMU in its ability to implement the C&I.’*

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### FMU-level testing

The field-testing of the ITTO C&I in the three host countries provided valuable information on the applicability of the manual under different country conditions, as well as on its user-friendliness.

The FMUs tested were at different stages of applying C&I. PKKT in Malaysia could meet most of the information needs for most of the indicators. A driving force behind these developments appears to be that the company is working towards obtaining forest certification. In Indonesia, the three concessions tested also seemed to have a strong commitment to sustainable forest management, due largely to their interest in seeking certification, but the availability of relevant information was more limited. In Ecuador, the high national-level awareness of sustainable forest management is yet to be translated into enabling legislation. While the commitment of the companies participating in the FMU-level testing to sustainable forest management seemed strong, their application of C&I at that level was at a preliminary stage.

Notwithstanding these limitations, we believe that the FMUs examined were at the

upper end of the scale in their respective countries in their commitment to sustainable forest management and their ability to meet the data requirements of the manual. In other words, they may not reflect the situation of an average FMU in its ability to implement the C&I.

Data availability for two criteria, Criterion 5 (on biological diversity) and Criterion 6 (on soil and water) proved particularly problematic. Another issue was the use of qualitative data and the absence of definitions. Assessing impacts as ‘light’, ‘medium’ and ‘heavy’ calls for subjective judgements; other terms such as ‘adequacy’ also posed difficulties. While the manual makes it clear that each country/concession should define such terms themselves, many of the people consulted were uncomfortable doing so at the FMU level. At a minimum, such definitions may have to be provided at the country level so that all FMU-level reports are consistent.

On social issues and community development, especially as dealt with by Criterion 7, there is a need for greater clarity between the responsibilities of the concession holder and those of government.

## Workshop Outcomes

A total of 83 participants attended the three workshops. They included 51 representatives of government, 21 of industry, six of universities and research organisations and five of NGOs. Nationals of 26 countries attended: Bolivia, Brazil, Cambodia, China, Colombia, Ecuador, Egypt, Fiji, Ghana, Guyana, Honduras, India, Indonesia, Liberia, Malaysia, Myanmar, Nepal, Panama, Papua New Guinea, Peru, Philippines, Suriname, Thailand, Trinidad and Tobago, Vanuatu, and Venezuela.

The backgrounds of participants were diverse and the understanding of sustainable forest management and the use of C&I was highly varied. This posed difficulties for us in determining the extent and level of explanation

### Country-level Workshops on Agenda

At its 29th session, the International Tropical Timber Council discussed the possibility of national-level workshops in up to ten major producer countries to train forest managers and concessionaires in the implementation of the manuals. Discussions on this issue will resume at the next Council session in May.

## Recommendations to Improve the C&I and Manual

- 1) The ITTO C&I and the manual should be revised to make them more user-friendly
- 2) Facilitate greater use of the manual by:
  - providing ongoing training in the use of ITTO's C&I
  - making the application of the C&I a precondition of project funding approval
  - seeking regular reporting by member countries on the extent of application of C&I
- 3) provide technical assistance for implementing the C&I as necessary on request from member countries
- 4) support country initiatives towards timber certification, since the initiative to apply C&I is derived largely from an interest in obtaining certification and less from a commitment to sustainable forest management.

required to ensure that all participants were well informed. The high level of enthusiasm of participants helped offset this limitation, and most found the workshops useful not only in expanding their awareness of C&I but also in preparing them as trainers.

Since the ITTO C&I at the FMU level were a sub-set of those at the national level, we decided that the workshop should focus on national-level indicators while drawing attention to the FMU level where the two diverged.

### National-level information

Workshop participants constituted a source of information on the availability of national-level data in their home countries; they were asked to report against each indicator and we adopted a simple system for scoring the responses. The results of this mini-survey are presented in Table 1 and suggest that most of the countries (19 of 26) were either marginal or unsatisfactory in terms of the availability of data for the full suite of indicators.

However, this finding must be treated with caution. For example, the information may actually be available but needs to be compiled from various documents and records and from different government agencies. Alternatively, participants may not have been aware of the availability of specific information.

In order to ensure that the investment in the workshops was well used, participants were asked to point out any major impediments or constraints they were likely to face in their home countries in effectively putting into practice what they had learnt in the workshops. The most commonly identified obstacles were:

- lack of trained manpower;
- budgetary constraints;
- a lack of political commitment; and
- a lack of information.

Such issues cannot be addressed without a major commitment of time, effort and resources. While training is one major positive step in promoting the application of C&I, other fundamental issues also need to be addressed if the C&I are to become an integral part of forest management in member countries.

### More User-friendly?

ITTO's C&I are general enough to be relevant to all of ITTO's tropical member countries. Conversely, since they provide a complete conceptual framework for sustainable forest management, their application and assessment requires a sophisticated data collection system. These two features make the use of the manual a daunting task, even for countries in which sustainable forest management is relatively advanced. It would assist members if both the C&I and the manual were more user-friendly; in our report we make a number of recommendations in this regard (see box).

**Table 1: The availability of information for assessing sustainable forest management, by country**

Percentage of indicators for which satisfactory information is available	Number of countries
< 50	8
50 – 60	5
> 60	5

Training and field-testing were seen by all participants as major steps forward in convincing member countries of the importance of C&I for sustainable forest management. Such efforts should not be a one-off exercise but part of an ongoing process to assist countries implement C&I. Training 'trainers' means that the ripple effects of the workshops should extend well beyond workshop participants, but support for such trainers in developing and implementing

their own training programs would also be of considerable value.

### Linking C&I and certification

A close link between the implementation of C&I and timber certification became clear over the course of our work. At the national level, the understanding of the manual was higher in those countries working towards forest certification, although only a few countries were in this category. Moreover, the level of understanding seemed to be higher at the FMU level than at the national level. This may be partly because of the smaller scale and therefore relative ease of coordinating information sources, but also because concessionaires are starting to use C&I as a platform for certification.

### More Work

Another workshop is to be held in Africa in early 2001. We see the continuation and expansion of this training program as a key element in ITTO's efforts to bring sustainable forest management to the field level in ITTO member countries.

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# Malaysia on Track – But Trade Barriers Still Loom

***ITTO should encourage consumer members to lift trade barriers affecting tropical timber products, says the Honourable Datuk Haron bin Siraj, Secretary General of the Malaysian Ministry of Primary Industries***

done. Each state department has submitted management plans to my Ministry demonstrating how sustainable forest management is to be achieved. I am the Chairman of the Steering Committee that is vetting these plans; if a plan is approved, the particular state government becomes eligible for financial allocations from the federal government for sustainable management-related projects.

Coordination between state and federal governments takes place primarily through the National Forestry Council, which is chaired by the Deputy Prime Minister and includes as members all the state government chief

ministers. Recently, the Council agreed on regulations pertaining to the exploitation of forest products – including even herbal and medicinal plants – and the need to employ contractors who are qualified, experienced and well trained in sustainable forest management practices. So initiatives such as this are now coming down not just from the federal level but also from the state level and are being implemented and/or supervised by professional foresters. So we hope this consistency of policies and rules will assist in maintaining our forests.

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*‘... we have introduced an industry levy on exports of sawn timber; in five years we expect to [raise and] spend about 1.7 billion ringgit for sustainable forest management ...’*

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Now I think the next stage is to show the world, particularly the NGOs [non-governmental organisations] that have been so critical in the past, that we are striving hard for sustainable forest management, even though it is by no means an easy thing to achieve. We are doing this largely with our own money and our own resources and we hope that our efforts will be appreciated.



Datuk Haron at the launch of a series of ITTO-funded publications at the IUFRO World Congress in August (see page 24 for a more detailed description of the launch). Photo: A. Sarre

**TFU:** Malaysia was identified in a recent ITTO report as one of six countries that have made most progress towards ITTO's Objective 2000. What more needs to be done in Malaysia to fully achieve the objective?

**Datuk Haron:** Well, we've definitely come a long way, although we still have more to do. The awareness is already there: the whole nation has been fully alerted to the need for sustainable forest management. Second, we are doing things on the ground. About 58 per cent of Malaysia is natural forest, part of which has been allocated to timber production and part to protection. The production forests will be exploited in a manner that is sustainable but nobody can touch the protective forests or take anything out of those areas. We are enforcing these restrictions.

Importantly, we have worked hard to gain the cooperation of all the state governments, which are actually responsible for implementing sustainable forest management and have shown a great preparedness to help us achieve the Year 2000 Objective. Officials in all the state departments of forestry, from the highest ranks down to the rangers and forest workers, have already been sensitised to what needs to be

*What have been the main driving forces for Malaysia to engage in the certification process? Has it been the threat of trade barriers, is it seen as a marketing tool, or is it a tool for encouraging sustainable forest management?*

The term 'sustainable forest management' is reasonably new, but the concept is not. Thirty years ago the national forest policy contained provisions for a national forest estate and many of the elements of sustainable forest management. Now with possible trade barriers, we see certification as a means of demonstrating to the world that we are implementing the policies of sustainable forest management.

*As one of the countries that has made most progress in forest management, are there lessons that other countries which have perhaps made less progress can take from what you've done? What has Malaysia been doing right?*

Well, let me first say that we have not always done everything right, but I think that where there are weaknesses we are trying to make corrections. The most important factors in our progress are commitment and enforcement. As I have said, sustainable forest management is now a national commitment; the fact that it has been taken up at the level of the National Forestry Council under the leadership of the Deputy Prime Minister symbolises that. We certainly would want to share our experiences

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with other countries. Other countries may be interested in seeing the way the mechanisms are structured in this country to ensure compliance and consistency with sustainable forest management.

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*‘Malaysia now has a sophisticated downstream processing sector, but its ability to penetrate some markets is hampered by trade restrictions: lifting these would mean more export earnings and therefore would assist in funding sustainable forest management.’*

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But the question of finances is also critical. Where does the money come from for sustainable forest management? In Malaysia we have introduced an industry levy on exports of sawn timber; in five years we expect to spend about 1.7 billion ringgit for sustainable forest management, all of which is being derived from the levy as well as from collections by state governments. So the government needs the machinery to define, implement and enforce sustainable forest management, but it also needs money to do it. In our case, the levy fund collected from the private sector is actually channelled back to the forests. We think that’s fair, because the private sector is benefiting from being able to harvest the forest.

*Can the industry afford to absorb the costs of sustainable forest management? Is there a need for new revenue sources besides timber?*

I think the industry is struggling to carry the burden of financing [through the levy]; I do not say it will be able to continue to fund the whole process. Certainly we could do with assistance from outside, both financial and technical, particularly for improving our harvesting techniques and for introducing the technology for more efficient timber recovery and fast-growing plantation species. Malaysia now has a sophisticated downstream processing sector, but its ability to penetrate some markets is hampered by trade restrictions: lifting these would mean more export earnings and therefore would assist in funding sustainable forest management. We

are also monitoring developments in carbon credits, but we don’t yet know how much revenue this might bring to forest owners.

*Now that we’ve reached the year 2000, what should ITTO’s priorities be?*

ITTO can assist us by giving a true and informed picture of the commitment by tropical countries to introduce sustainable forest management, which I hope would go a long way towards influencing our friends in developed countries to really look at what we are doing. The other way that perhaps ITTO can help is to provide technical assistance in the fields I suggested earlier.

In policy work, ITTO could help by encouraging the mutual recognition of the various certification or labelling schemes. This is very important: we believe that whatever we do here in terms of certification must find acceptability anywhere in the world because we are doing it in good faith and with the expectation that we will not face problems of recognition in other countries.

I will give you an example. We are working bilaterally with the Dutch to work out and agree on the principles, criteria and indicators for a national Malaysian certification scheme. But we have told them: please make sure that our scheme is compatible with your pan-European standards so that if our certification scheme is acceptable in the Netherlands then our timber should also be able to go into England, France or any other European country.

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*‘We feel that we’ve honoured our part of the bargain; now it’s time for our consumer friends to show good faith and honour theirs by removing the barriers that are hindering our exports.’*

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We believe that if a country or market insists on certain forest management standards, then these standards – localised, of course, to suit specific conditions – must be applicable to everyone. This is why Malaysia is pushing for a binding convention for all forests and all timber. We feel that we’ve honoured our part of the

bargain; now it’s time for our consumer friends to show good faith and honour theirs by removing the barriers that are hindering our exports.

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*‘ITTO should continue to pursue its objectives of bringing about a greater understanding of sustainable forest management and of reducing trade frictions and discriminatory market barriers.’*

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*You mentioned a possible global convention on forests. What future do you see for ITTO?*

ITTO remains the best forum for pursuing such issues. It has an understanding of the debates, it has experience in bringing consumers together with producers, and it is strongly promoting sustainability. It could do more in breaking down the barriers to trade: I don’t believe it should be just a hand-out organisation. The project work is good and it is appreciated – surveys on biodiversity, species studies, technical assistance and so forth. But it should go beyond that. ITTO should continue to pursue its objectives of bringing about a greater understanding of sustainable forest management and of reducing trade frictions and discriminatory market barriers. We are fully committed to ensuring that sustainable forest management is here to stay, but at the same time it is important that tropical country ‘bashing’ is done away with. We should all be working together to make the world more green. I think that is our ultimate objective. And ITTO can be the best platform for that. ■

# A Future for Forests?

## Issues and implications for the emerging forest policy and strategy of the World Bank

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Since mid 1998, the World Bank Group<sup>a</sup> has been conducting a comprehensive review of its work in the forest sector<sup>b</sup>. This article provides an overview of key issues identified in the review and considers some of the implications for the World Bank's future engagement in the sector. The Bank's new forest policy and strategy will be discussed by the Bank's board in early 2001 and presented in the *TFU* thereafter.

### The Deforestation Problem

All over the globe, forests are being degraded and lost at a rate unprecedented in human history. Large parts of formerly untouched boreal forests have become the object of timber exploitation.

Old-growth forests in temperate zones, most of them in industrialised countries, continue to disappear or are being degraded. Tropical rainforests are diminishing at a rate of around 15 million hectares a year because of the human demands for land, food, timber, energy and minerals. Forest destruction inevitably means the loss of a large part of the Earth's terrestrial biodiversity and is a major contributor to the current growth in the concentration of atmospheric greenhouse gases. It also endangers the livelihoods of many people, since forests provide food, shelter, employment and health services, especially for the poorer segment of the world's population (Box 1).

<sup>a</sup> The World Bank Group includes the International Bank for Reconstruction and Development (IBRD), the International Development Agency (IDA), the Multilateral Investment Guarantee Agreement (MIGA) and the International Finance Corporation (IFC). The Bank is also one of the implementing agencies of the Global Environment Facility (GEF).

<sup>b</sup> The Forest Policy Implementation Review and Strategy Development (FPIRS) comprises a comprehensive review of the World Bank's performance in the forest sector and includes forest sector reviews in five key countries. It is being undertaken by the independent auditing unit of the Bank, the Operations Evaluation Department (OED), in conjunction with a series of analytical work and consultation processes undertaken by the Bank's Environmentally and Socially Sustainable Development Forests Team, of which the two authors are members. For an overview of the process and results, please refer to the World Bank's website: [www.worldbank.org/forestry](http://www.worldbank.org/forestry)

### Box 1: Why Forests?

- Forests cover 33 million km<sup>2</sup>, which is 26 percent of the Earth's land surface.
- More than 1 billion people depend on forests for their livelihoods, 350 million people derive significant income from forests and tree crops, 60 million indigenous people are almost wholly dependent on forests, and forest industries employ 60 million people worldwide. One billion people depend entirely on drugs derived from forest plants for their medicinal needs.
- In the 1990s, forests were lost at the rate of 15–17 million hectares per year globally and by up to 2–3 per cent per year in some countries in the Asia-Pacific region.
- Mismanagement of woodlands in the humid and sub-humid tropics significantly contributes to soil losses, equivalent to ten per cent of agricultural gross domestic product (GDP) per year in the countries concerned.
- Forest loss is responsible for 2–5 per cent per decade of global biodiversity loss, with inestimable losses to ecosystem stability and human well-being, and for up to 20 per cent of the greenhouse gases contributing to global warming.
- Forests are consistently and seriously undervalued in economic and social terms. For example, official data for Indonesia show that forests contribute 1–2 percent of GDP, but the Bank estimates that the full value of forests in that economy to be more like 15–20 per cent of GDP.
- Nationally and regionally, forests provide important non-market watershed, soil management, pollination and pest management functions in addition to timber and non-timber forest products.

## Box 2: World Bank–WWF Alliance: 2005 Targets

- 50 million hectares of new protected forests
- a comparable area of existing but highly threatened forest protected areas secured and under effective management
- 200 million hectares of production forests under independently certified sustainable management

Combating deforestation was identified as one of the World Bank's major objectives in its 1991 forest policy paper. However, despite US\$3.5 billion of lending through the International Bank for Reconstruction and Development and the International Development Agency between 1992 and 1999 (the bulk to China and India for forest restoration), US\$370 million of grant funding through the Global Environment Facility (GEF; mainly for protecting forest ecosystems), and US\$580 million of lending through the International Finance Corporation (mostly in pulp and paper industries), the World Bank has achieved little in reducing deforestation or increasing the area of sustainably managed forests.

*'The larger underlying challenge, however, is to develop an effective linkage between forest outcomes and poverty alleviation through sustainable development. If this is not accomplished, the World Bank and other international agencies pursuing forest conservation and sustainable development objectives will fail.'*

In recognition of the urgent need to address uncontrolled forest loss and degradation, the World Bank formed an alliance with the World Wide Fund for Nature (WWF) in 1998, an alliance that commits the two organisations to major targets for improved forest conservation and management (Box 2). The larger underlying challenge, however, is to develop an effective linkage between forest outcomes and poverty

alleviation through sustainable development. If this is not accomplished, the World Bank and other international agencies pursuing forest conservation and sustainable development objectives will fail.

While some of the major impacts and concerns related to forest loss are global, solutions must be formulated at the national and local levels; due attention is needed on issues of tenure, rights, ownership and the meaningful participation of all stakeholders. Forest situations, and the major issues surrounding them, differ widely from one country to another, so solutions need to be flexible. This can be illustrated by broadly comparing situations in forest-rich and forest-poor countries (Box 3).

## Poverty, Participation and Sector Governance

The issues of poverty, participation and sector governance are grouped here because they are strongly related:

- poverty is endemic in many forest and woodland areas;
- poor and marginalised communities often lack effective means to participate in the management of forests; and
- decision-makers often do not fully understand that the poor are highly dependent on forest resources or they choose to ignore this fact in favour of privileged groups as beneficiaries of forest ownership – a sign of severe governance problems.

## Poverty

Of the 1 billion people living in or near forested areas in developing countries, 30–50 per cent are estimated to be poor. Their dependency on forest products is high, especially in forest-poor regions where they utilise fragmented forests and woodlands. About 90 per cent of population growth occurs in the tropics; there is usually a strong link between the incidence of poverty and both the rate of population growth and weak governance.

*'The solution may be to address excessive forest loss directly as an efficient poverty alleviation measure, or to find ways of increasing the value of forests to the people who live in or near them.'*

However, solutions generated simplistically on the idea that poverty causes deforestation must be seriously questioned. The relationship is more complex and depends a great deal on locality. It is true that large influxes of people will often put pressure on forests and any resulting forest destruction can aggravate poverty. It is also true that the destruction of forests for other reasons, including ones related to commercial interests – such as uncontrolled logging, oil exploration, mining, and the rapid expansion of ill-planned forest clearance by

## Box 3: Differences in Forest Resource Availability and Perceptions

### **Forest-rich, low-income countries**

In countries where the forest area to GDP-per-capita ratios are highest, forests tend to be seen as a source of development capital or as a physical barrier to the development of more immediately productive land. In terms of political and institutional commitment to reform and change in the forestry sector, rising valuation of forests tends to be *least* manifest in such countries.

Issues such as deforestation, forest degradation, forest products markets, sustainability, biodiversity conservation and stakeholder participation have global significance. Decisions need to be made related to: (1) the degree of protection to be applied to the biological, cultural, and other values embodied in forested areas; (2) the rate at which the standing value of the forest

asset is converted into capital in the form of production and/or arable land for conversion; and (3) the extent to which stakeholder groups are involved in resource use and protection decisions and in the proceeds of such decisions.

### **Forest-poor, low-income countries**

This group consists of countries with the very lowest incomes. Forest and woodland areas serve very basic needs such as fodder and other non-wood outputs, and fuelwood. In many of these countries, especially those with large arid or dry zones, remaining forest cover is important for the retention of soil and water values. Forest loss and degradation are major issues and the relationship between forests and woodlands and the broader status of the natural resource and land productivity base can be very significant.

large-scale agribusiness – can lead to the impoverishment of local people. The solution may be to address excessive forest loss directly as an efficient poverty alleviation measure, or to find ways of increasing the value of forests to the people who live in or near them.

*‘... it is clear that the undisputed ownership of forest areas by indigenous peoples is not a sufficient condition to guarantee that such areas will be sustainably managed and protected.’*

The cross-sectoral approach also becomes important when poverty is the focus. Specific sector or project investments can often exclude, or even displace, the poor. Broader programs that take into account the impacts on all natural resources and the interests of all groups have a better chance of benefiting such people. A major implication of this is the importance of marginal forest land, with or without trees. These areas can be brought into sustainable livelihood production with investment, secured tenureship arrangements and adequate land-use mechanisms such as agroforestry.

### **Participation**

The broader participation of stakeholders in the use, management and protection of forests is a way of equitably achieving both long-term sustainability and poverty alleviation. Forest management to benefit the poor almost inevitably requires the application of new title or rights-of-access arrangements. Collaborative forest management (CFM) – including community-based management, joint forest management and other models – can apply, but only when the broader political commitment and institutional enabling environment exist.

Although political will is necessary, it may need expression beyond a government’s desire for CFM. Complementary policies – such as a commitment to social justice or a recognition of the potential importance of forests as an efficient means of improving livelihoods – are necessary. In social terms, CFM is most likely to succeed when potential user groups are clearly identified, when all users are dependent to some extent on

the resource, and when the approach will not generate opposing interests among people at different social, economic or political levels. The approach is likely to work better in forests that are threatened, when the resource area is small and clearly defined by user groups, and when enough is known about the forest so that users can reasonably assess the benefits. While there have been successful examples of CFM based on large-scale afforestation, schemes based on the management of existing natural forests are more likely to be both cost-effective and successful.

### **Indigenous people**

The situation of indigenous peoples in forests can be considered a special case of participation. There is some controversy as to whether titling forested areas to the indigenous people who occupy them is the right approach, especially in cases where the resource is under competitive pressure from other poor people or from commercial loggers; protecting rights of access and usage may be sufficient. Based on the experiences of the World Bank and others it is clear that the undisputed ownership of forest areas by indigenous peoples is *not* a sufficient condition to guarantee that such areas will be sustainably managed and protected.

### **Governance**

The forest sector is notorious as a locus of corruption, vested interests, rent-seeking behaviour and lack of transparency in the allocation of resource rights. In situations of rapid political change and instability, forest resources represent a convenient and potent means by which political, military or financial supporters of a particular political faction in power can be rewarded for their loyalty. This can evolve into a mutually beneficial, long-term relationship based on rent appropriation and redistribution among the favoured elite. In some situations, longstanding expropriation of valuable forest areas by locally powerful individuals or groups has occurred. Such situations most often lead to forest destruction and degradation beyond levels that would result from legitimate, landscape-based conversion options. These situations can also exacerbate the impoverishment of local communities excluded from the benefits of forest use.

For the World Bank and others, the reality is that in most cases where forests are economically

## **Box 4: Paying for Biodiversity?**

The biodiversity values of natural forests have long been acknowledged by the international community. Efforts to pay for such values have been made through international sources of grant financing, experiments with leveraging these further via debt-for-nature swaps, and commercial activities such as ecotourism, pharmaceuticals and gene pools. However, these sources of international demand for forest biodiversity and mechanisms of transfer are trivial compared to the demand for the more immediately saleable products from forests, including forest land. The intrinsic valuation placed on biodiversity by developing countries, and by many of the stakeholders living in or near the forests, is commonly lower than that of the international community as a whole.

and environmentally significant at a national scale, effort is needed on governance and institutional issues. Unless these are dealt with effectively, investment in technical inputs such as improving forest management and resource creation is of dubious merit. Yet there is considerable evidence that the World Bank and other donors have pursued such incomplete strategies in many countries.

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## **Forests and Land-Use Issues**

### **Deforestation**

Not all deforestation is undesirable. Social and economic pressures make it inevitable that substantial areas of what is still natural forest today will be converted to agriculture and other uses. However, deforestation should be discouraged when: (1) it is not efficient from an economic viewpoint; (2) it is non-sustainable –

in other words, it is a threat to key biodiversity areas and to broader environmental stability; and (3) it leads to social inequities and conflicts.

The decision on where and what to convert, and for whose benefit, is one of the most crucial in land-use planning. Yet this decision is often made on an ad-hoc basis, without effective and transparent participatory mechanisms in the decision-making process.

*‘There is growing recognition that good forest management is critical to forest conservation and sustainable development, particularly where the local or national economy is based directly on the use of forest resources.’*

### Forest conservation

Protected areas are widely recognised as a cornerstone of any system for the conservation of biodiversity, but few developing countries can afford or are willing to set aside significant areas of commercially accessible forests as completely protected areas; only modest attempts have been made by the international community to pay for such conservation (Box 4). In most developing countries, a significant proportion of the financial resources to effectively manage forest protection areas will have to originate from outside the government budget. The well-known problem of ‘paper parks’ is evidence of this. Even when such

financing is available, local people must be given a meaningful role in management, including the ability to generate an adequate income. The World Bank is engaged in implementing the various operational programs of the GEF and has set conservation targets for itself within its alliance with WWF. The key question is what and how much to conserve, since conservation cannot be separated from social and economic development; nor should it be separated from the broader management of natural forests for sustainable production and other purposes.

### Natural forest management

There is growing recognition that good forest management is critical to forest conservation and sustainable development, particularly where the local or national economy is based directly on the use of forest resources. Given the extent of the resource in many countries, few governments or private sector stakeholders accept that logging should be banned in all accessible forests. Therefore, the question is not whether forest operations will occur, but whether they will be done well or poorly.

The first priority, to be applied on the larger portion of the world’s accessible natural forests, is to combine conservation and production goals across a functional landscape. Such an approach needs to be based on consensus; whenever ownership and tenure arrangements permit, planning and management should be collaborative.

While scientific knowledge about forest ecosystems is far from complete, considerable

ecological and silvicultural knowledge to manage natural forests in ways that preserve their integrity is available and proven for all major forest types, including tropical humid forests. However, available knowledge is frequently not put into practice due to a lack of interest by operators, inefficient monitoring by forest services, and a lack of incentives. Larger economic and governance forces are at the root of these problems.

*‘... the question is not whether forest operations will occur, but whether they will be done well or poorly.’*

The fact that most forest operations in the tropics are not sustainable, even though the techniques for sustainable management are known, has led some analysts and government officials to conclude that such operations *cannot* be sustainable under prevailing economic realities. But analyses of existing costs, prices and incentives are usually highly distorted by the impacts of rent-seeking behaviour by forest operators. Moreover, the calculations rarely factor externalities or the impacts on forest value of extending ownership and tenure to all stakeholders. They virtually never consider the option values of retaining forests. In short, they are not appropriate *economic* estimations of the returns for sustainable forest management.

The challenges for the World Bank and the international community are:

- to ensure that incentive structures reflect the real preferences of stakeholders for forest use; and
- to build market mechanisms to ensure that global values can be actualised and marketed in a way that will allow national and local forest owners to benefit from producing them.

## Forest Resources

### Global wood resources

The current supply of log volume for industrial use is about 1.5 billion m<sup>3</sup> per year; FAO projects that this will rise to about 1.9 billion m<sup>3</sup> per year by 2010. Fuelwood consumption figures are much less reliable but are estimated by FAO at about 1.8 billion m<sup>3</sup> annually at present.

### Box 5: The Role of Plantations

Plantation incentive policies have sometimes been justified on the grounds that plantations might have ameliorating effects on destructive natural forest use by providing an alternative source of wood. To date, however, plantations have had no discernible global impact on reducing deforestation. Unless the expansion of plantations is firmly linked to the removal of perverse incentives and market distortions in natural forest operations, and strong control over illegal operations, then a positive impact on natural forests is unlikely. Indeed, the reverse can occur: the establishment of plantations on land that already carries natural forest will exacerbate deforestation rather than reduce it. Agricultural and tree crop developers may actively seek access to intact forest in order to

capitalise on the standing timber value. This may be more important to them than the underlying land value, especially if part of the incentive system to encourage tree crop investment is access to forest raw material at prices and under rules far more liberal than those applied to logging operations in the permanent forest estate.

Nevertheless, it is also true that plantations will play an increasingly important role in the global supply of cellulose fibre. Small-scale plantation woodlots are already an important source of household income for many of the poorest of the poor. They are also the only way for countries such as Nigeria, Thailand and Philippines, which have already over-exploited their natural forests, to avoid having to import massive volumes of forest products.

The net transfer of wood volume from developing to developed countries is only about 70 million m<sup>3</sup> per year. More developing

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countries are net importers of forest products today than net exporters and only about 20 per cent of timber harvested in developing countries ever enters international trade. Such observations are relevant to the frequently heard argument that demand from the developed countries for developing country timber supplies is a major cause of deforestation. While this is true in some localities it is not the general case. The area of developing country forest that would be required to supply the total flow to developed country markets would still only account for a minor fraction of the forest area currently being lost in developing countries. Thus, the rapidly expanding global plantation resource, which more than doubled between 1985 and 2000, is unlikely to have much effect in reducing deforestation (Box 5).

### **Markets and trade**

The annual total estimated value of outputs from forests globally is about \$730 billion, out of which the global trade of forest products is about \$130 billion. It is difficult to evaluate in monetary terms the significance of non-wood goods and services; however, leading environmental economists recently estimated the value of forest ecosystem services at \$4.7 trillion annually, although only a tiny fraction of this is actually paid by users.

Profits in the trade of forest products can range from zero to windfall depending on the situation. Trade liberalisation in a forest-supply country can have negative environmental effects on a forest if no accompanying measures to control the nature and scale of forest operations are implemented, but there is empirical evidence to suggest that it can also have positive effects.

It is not clear at present whether any liberalisation trend in the trade of forest products is actually occurring. Some tariffs are escalating,

but tariffs in general are generally less of a barrier to forest products than non-tariff barriers.

### **Carbon**

A major new possibility for the valuation of forests is offered within the framework of the UN Convention on Climate Change by the ability of forests to sequester carbon and to store it in biomass and soils over long periods. Reducing concentrations of atmospheric carbon is potentially cheaper via forests than via direct emission reduction at the source (see *TFU 10/3* for background on the possible role of forests in controlling carbon emissions).

The international community will need to approach this issue with considerable care: as with so many topics in the forest sector, the subject of carbon is controversial. However, technical approaches to monitoring the integrity of forested areas involved in carbon offset investment are now increasingly accessible. Financial instruments to structure the payment of offset investments for forest retention can be devised today and issues of ‘moral hazard’ can be eliminated by market responses and certification approaches.

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The issue for the World Bank is to determine the role it should take in forest carbon. Caution will be needed to ensure that bad practices are avoided. The options offered through the Clean Development Mechanism, which could also embrace social issues, are quite promising and could significantly improve incentives to effectively manage and conserve forests.

## **Cross-sectoral Issues**

### **Macro-economic adjustment**

The World Bank differs from other development assistance agencies in one

important respect. It is involved in the economy of a country on a large scale, often through the structural adjustment instrument and in major infrastructure and rural development programs. This can have significant repercussions for natural resources and forests that are not a direct target in these investments. The Bank needs to incorporate forest issues and concerns into its country assistance strategies and adjustment operations, and to undertake research work at a sufficiently regular and rigorous level so that it better understands the issues and can mitigate risks. The lack of rigorous attention to forest outcomes in macroeconomic adjustment in the short term is likely to lead to unanticipated and potentially adverse results.

A major new issue is to build forest sector concerns into macroeconomic adjustment operations. While it is generally true that undertakings for forest sector reform extracted from governments under pressure are unlikely to produce real commitment, this may be less the case when adjustment coincides with the advent of a new government. The World Bank must commit to supporting long-term reform processes in the forest sector. This will be especially true when systemic problems of governance, illegality and disenfranchisement characterise the sector. Sector adjustment may be one way to provide support for longer-term sector reforms. The strong linkage of donors and other stakeholders into larger programs of intervention with adjustment as a crucial element may also work. But this needs to be backed up by solid, ongoing research work and by investment in comprehensive stakeholder dialogue.

### **Forests as landscape**

All forest concerns need to be connected to a landscape strategy that is linked to broader economic, social and environmental goals for the nation as a whole. In this way, the process of development can proceed in a manner that factors in the ability of the broader landscape to sustain production and conservation activities rather than as a series of unlinked and possibly incompatible investments.

Non-forest sector policies and investments implemented under World Bank auspices in the fields of agriculture, transport, mining and infrastructure have often had greater impacts on forested areas than have specific forestry

investments. Macroeconomic adjustment measures might also have inadvertently caused the intensification of logging or forest conversion. The relaxation of both export and import controls and taxes, the promotion of self-sufficiency in food and other 'strategic' goods, and natural resource-led growth strategies are examples of policies that can have this effect if they are not accompanied by carefully designed offsetting measures.

Safeguard policies such as environmental assessment will prevent direct adverse consequences to natural resources and biodiversity stocks from agricultural or infrastructure activities. However, it is preferable to use a more comprehensive approach. For example, structural adjustment programs are not currently subject to safeguard policies – yet potentially they can have major impacts on forests. Even if a specific agricultural or tree crop project area does not encroach on the interface between agricultural and forest land, this does not rule out the possibility of subsequent rural settlement. A protected area project located where there are large pressures to deforest must address these forces if the viability of the protected area is to be successful in the long run.

## Potential Implications for the World Bank Forest Policy and Strategy

A major concern of the international community in recent years has been the unprecedented loss and degradation of forests. This concern is based on the broader global impacts of forest loss on climatic change and biodiversity and on the well-being of large numbers of poor people and indigenous groups.

An underlying theme of this article is that there is considerable convergence between the objectives of poverty alleviation, the sustainable management of forests, and the protection of the very high conservation values such forests contain. Forests are undervalued in most conventional analyses and in decisions made about them. One important reason is that the poor have often been excluded from effective participation in their management. Such people derive many basic livelihood benefits from forests and this is rarely considered when forests are allocated, used or converted to other land uses.

The implications of this convergence for the World Bank in developing its new forest policy and strategy are profound. For example:

- the Bank must recognise the real value of forests in setting priorities for its engagement with countries and in analysing the economic, environmental and social impacts of its investments. The Bank needs to seek more effective ways of developing markets for a wider range of forest values, including bringing more financing from international markets for the global values of forests into the ambit of national governments, private sector operators and local communities;

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- The Bank needs to develop a greater understanding about the linkages between poverty and forests and then, based on this understanding, work more effectively with stakeholders to develop practical and acceptable approaches in and outside forests;
- The Bank also needs to address the serious issues of governance, illegality and vested interests in the forest sector and to diligently apply effective social and environmental safeguards in the forest sector and other areas that can have an impact on forests. ■

### Climate Change Agreement Put on Ice

The 6th Conference of the Parties (COP-6) to the Framework Convention on Climate Change has been suspended without agreement and will be reconvened in 2001.

Dubbed COP-6 Part II, the continuation of the conference is likely to take place in late May or early June.

COP-6, which was held on 13–25 November 2000, was considered important because it coincided with the expiry of a two-year deadline for strengthening the FCCC and preparing for the entry into force of the Kyoto Protocol that was set at COP-4 in 1998. The Kyoto Protocol commits developed countries to reducing their net greenhouse gas emissions to 5 per cent below

1990 levels by the period 2008–12 but the mechanisms by which it will operate are yet to be agreed.

According to the International Institute of Sustainable Development website, which reported the meeting in detail, many high-level negotiators, although disappointed, “pointed to progress made during talks, and expressed the hope that a meeting next year could result in a better outcome ... In their speeches, the US [United States] and EU [European Union] negotiators noted that the key outstanding issues include sinks, compliance and complementarity.”

*For more information see [www.iisd.ca/linkages/climate/cop6](http://www.iisd.ca/linkages/climate/cop6)*

# Brazilian Developments

## *Changes in Brazilian forest laws and policies signal big changes in the Amazon*

The Government of Brazil recently published Provisionary Measure No. 1956–50, which contains some major changes to the Forestry Code Law of 1965. With this new measure, forest owners must maintain the following percentages of their land as ‘legal forest reserves’:

- 80 per cent on rural properties in ‘forest areas’ of the Legal Amazon;
- 35 per cent on rural properties in the ‘cerrado’ areas of the Legal Amazon, being at least 20 per cent of the property itself and 15 per cent as compensation in other areas in the same local catchment;
- 20 per cent on rural properties containing forest or other forms of native vegetation in other regions of the country; and
- 20 per cent in savanna areas.

These new percentages represent significant changes from the previous situation.

The Forestry Code Law allows sustainable forest use in legal reserves once a forest management plan has been approved by the Brazilian Institute for Environment and Renewable Natural Resources (IBAMA), which is also responsible for monitoring the implementation of the plans.

The use of ‘compensating’ legal reserves is an innovative concept: subject to a Presidential decree expected within the next few months, a property owner with less than the legal requirement of forest will be able to buy forest ‘credits’ from owners with land containing more than the minimum percentage. These credits will be tradable on a stock exchange.

Forest owners can have their ‘surplus’ forest classified as legal forest, a status that can only be changed by a court of law – they are then obliged to retain the forest but can harvest it sustainably under an approved management plan and, of course, can sell credits. Alternatively, they can have the surplus classified as ‘forest servdom’; under this classification, the forest must be retained for a specified length of time, after which it may be converted to other uses. Any credits are then annulled and the credit owners must purchase new credits elsewhere.

The Provisionary Measure No. 1956–50 includes a change to the law that opens up the possibility of Amerindian people harvesting timber within Indian reserves for their own needs, again subject to the approval of a management plan by IBAMA. The exact nature of this change is still being debated.

## **New Map of the Amazon**

A new map of the Legal Amazon region in Brazil prepared by the Socio-Environmental Institute was published in July. It shows, among other features, all federal and state conservation units – including national parks, biological reserves, national forests, Indian reserves and ‘quilombo’ sites (communities descended from African slaves) – existing in the Legal Amazon. The map also shows forest affected by human intervention, based on satellite images.

## **World Bank Finances Brazilian National Environment Program**

Brazil’s Ministry of Environment and the World Bank signed a contract worth US\$300 million last July to support the implementation of Phase II of the National Environment Program (PNMA II). The objective of the program is to improve the capacity of the federal and state governments to monitor both the environment and the Brazilian population’s quality of life.

The first stage of the ten-year program will be executed over three years with a budget of US\$30 million. The main emphasis will be on supporting state governments in their efforts to improve the administration of forestry resources, hydrological reserves and protected areas. The Minister of Environment has already signed an agreement of technical cooperation with 21 states to implement the program. Non-

governmental organisations have been invited to provide support to governments and to be involved during the implementation of the program.

## **National Forest Program**

Brazil’s President, Fernando Henrique Cardoso, launched the National Forest Program last September. The process of formulating the program involved over 600 institutions and 1,200 representatives of government, local communities, the private sector, conservation organisations and other stakeholders. At the 29th Session of the International Tropical Timber Council, the Executive Secretary of the Ministry of Environment, Mr José Carlos Carvalho, invited ITTO to assist in implementing the Program.

## **New Water Agency**

In other Brazilian news, the Federal Congress has approved the creation of a national agency with responsibilities for the overall supervision, control and evaluation of activities regarding the use of water resources. All new projects that involve hydrological resources, such as the construction of hydroelectric dams, will need the approval of the new agency. The agency will also oversee all major water use concessions.

*Compiled by Mauro Reis reporting the Ministry of Environment Bulletin, July & August 2000, with supplementary information provided by delegates to the 29th session of the International Tropical Timber Council, November 2000. ■*

# Medicinal Tree Needs Sustainability Cure

***A tree species valued for the medicinal properties of its bark is being over-exploited in many parts of Africa. Improved management is needed to save it from economic extinction***

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Formerly called *Pygeum africanum*, the species *Prunus africana* of the family Rosaceae is a canopy tree found only in tropical African mountain forests at altitudes between 900 and 3,000 m (Graham 1960). It prefers a mean annual temperature of 18–26°C and a mean annual rainfall of 2,000 mm (Graham 1960; Achoundong 1995). It occurs from Nigeria east across the mainland to Kenya and Tanzania, and south from Ethiopia to Transkei in South Africa (Ndam 1998). It is also found in six of Cameroon's ten provinces at over 80 locations (Nkuinkeu and Ndam, in prep.), where it is known as 'Kanda stick'.

*'Commercial bark harvesting has severely depleted the wild population of Prunus africana to the extent that it is now listed on Appendix II of CITES.'*

The exploitation of *Prunus africana* started in the early 1900s in South Africa and Kenya, where it was valued for its timber. In 1966, a certain Dr Debat patented extracts from the bark of this species for the treatment of prostate-related diseases (Cunningham and Mbenkum 1993). In 1972, a French subsidiary company to Groupe Fournier called Plantecam commenced the first commercial exploitation of the species' bark in Cameroon.

To obtain the extract, the bark must be harvested from the tree and subjected to grinding and other procedures; these are carried out mostly in Europe and USA. Besides its use in the

treatment of prostate disorders such as benign prostatic hyperplasia, it is also used to lower blood cholesterol in combination with other plant extracts (Tonye et al. 2000).

Commercial bark harvesting has severely depleted the wild population of *Prunus africana* to the extent that it is now listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This means that commercial international trade is permitted but controlled.

One of the reasons for the detrimental impact of harvesting is that the bark is usually stripped from the entire tree, effectively ringbarking it and causing its immediate death. But it need not be so: sustainable harvesting guidelines have been developed and were adopted as policy and law in Cameroon in the 1990s. Under these rules, only about 50 per cent of the available bark in the harvestable tree should be stripped; after 4–5 years, the remaining 50 per cent may be removed. This should be sufficient time for the bark to grow back on that part of the bole originally stripped, although a joint scientific study by the Limbe Botanic Garden/Mount Cameroon Project and two French partners – le Museum National de Paris and the University of Paris VII Jussieu – on the physiology of bark regeneration has just commenced to confirm this. Figures 1 and 2 illustrate the harvesting technique for small and larger trees.

The yield of *Prunus africana* bark is partly a function of the diameter of the tree and partly a function of other tree characteristics such as height, the height up to the first big branch, and the thickness of the bark. Table 1 shows the

**Table 1: Estimated total weight of exploitable bark as determined by diameter at breast height (dbh), tree height, height to the first branch, and bark thickness**

dbh (cm)	tree height (m)	height to first branch (m)	bark thickness (cm)	weight of exploitable bark (kg)
35	20.6	8.2	1.1	34.4
45	22.8	9.4	1.2	57.5
55	24.6	10.3	1.3	84.6
65	26.1	11.1	1.3	115.3
75	27.4	11.8	1.4	149.1
85	28.6	12.4	1.5	185.8
95	29.6	12.9	1.5	225.1
105	30.5	13.4	1.5	266.7
115	31.3	13.8	1.6	310.6
125	32.0	14.2	1.6	356.5
135	32.7	14.6	1.7	404.4
145	33.4	14.9	1.7	454.1
155	34.0	15.2	1.7	505.5

Adapted from Dibobe (unpubl.)

estimated weight of exploitable bark, given such factors.

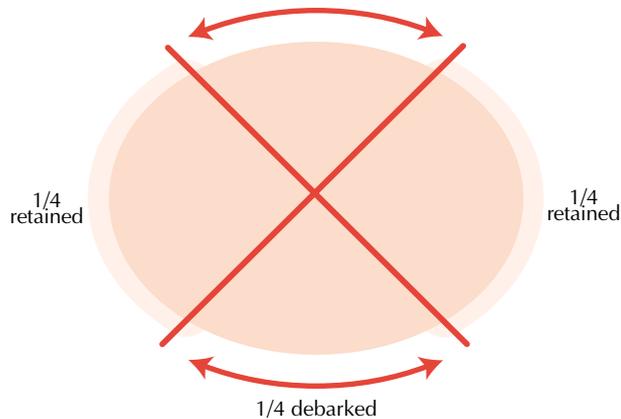
## International Market

The current volume of the international market for *Prunus africana* bark is estimated at more than 4,000 tonnes annually, of which Cameroon supplies more than two-thirds (Tonye et al. 2000). However, it should be noted that this figure does not include illegal harvesting, which may add substantially to the total trade. For example, the illegal trade is estimated at about 150 tonnes per year from the vicinity of Mount Cameroon alone (Department of Environment and Forestry pers. comm.).

*‘... the illegal trade is estimated at about 150 tonnes per year from the vicinity of Mount Cameroon alone ...’*

The legal harvesting of *Prunus africana* is an important activity in Cameroon. Not only is it a source of employment, it provides income for village traditional councils, harvester collectives and the country as a whole. It also gives local people – and policy-makers – an additional reason to maintain forest cover. However, under the current management regime, benefits are not evenly distributed, while much of the ‘value adding’ occurs offshore. Moreover, action must be taken to restrict illegal harvesting and to place this important industry on a fully sustainable basis.

**Figure 1: A sustainable bark-harvesting technique for *Prunus africana*, where diameter of bole at breast height is greater than 30cm but less than 50cm**



**Two sections representing 50 per cent of the tree's circumference will be debarked on opposite sides**

Source: Nkuinkeu and Remi (1998)

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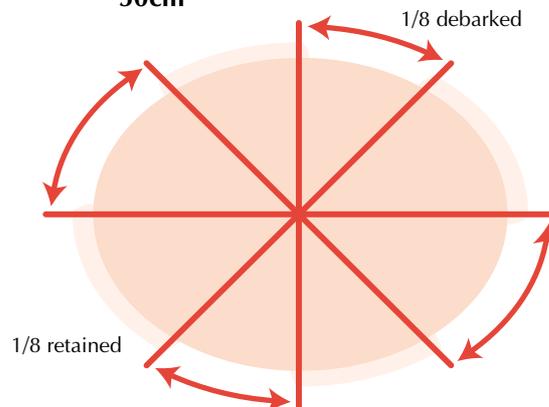
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**Figure 2: A sustainable bark-harvesting technique for *Prunus africana*, where diameter of bole at breast height is greater than 50cm**



**Four opposing sections representing 50 per cent of the tree's circumference are debarked**

Source: Nkuinkeu and Remi (1998)

## Propagating Kanda Stick

A further constraint to the sustainable use of *P. africana* is the fact that it takes 15–20 years for an individual to produce its first seeds. *The Economist* reported recently that the International Centre for Research in Agroforestry in Nairobi, Kenya has developed a simple technique for propagating *P. africana* vegetatively. Called marcotting, the technique involves smothering a de-barked branch with peat and covering it in plastic. The branch then produces roots that can be planted separately. The success of the technique depends on the age of the tree and the season in which it is carried out. (Editor)

## ***The newly formed Trade Advisory Group will strengthen the input of the tropical timber trade to the deliberations of the International Tropical Timber Council***

by Michael Adams

ITTO Secretariat

ITTO's Objective 2000 is the commitment by members to move as rapidly as possible towards achieving exports of tropical timber and timber products from sustainable managed sources. Since trade is conducted primarily by the private sector, it is imperative that the Organization involve trade and industry groups if it is to achieve this aim.

Recent moves for a greater involvement of the trade have now started to bear fruit. At its 28th session last May, the International Tropical Timber Council, ITTO's governing body, invited trade and industry representatives and environmental organisations to establish open-ended advisory groups to contribute to its work.

*'[TAG] totally condemns illegal practices and commits itself to working with the ITTO, its member countries and other stakeholders towards their complete elimination'*

The tropical timber trade was quick to take up this invitation: the Trade Advisory Group (TAG), comprising representatives of the tropical forest industries, timber exporters and importers, timber trade and industry consultants and trade and industry associations, held its first meetings at the 29th Council session.

### **Illegal Trade Condemned**

In its first statement to the Council, the TAG acknowledged the widespread concerns of many stakeholders about illegally sourced timber and illegal trading practices. It stated that it "totally condemns illegal practices and commits itself to working with the ITTO, its member countries and other stakeholders towards their complete elimination". In this respect the TAG indicated that it supported the proposal before Council to provide assistance to those member countries requesting help to address illegal practices. It also stated its intention to contribute actively to deliberations and to help focus the efforts of the Organization on a flourishing trade in tropical timber products from sustainably managed forests.

The TAG identified a number of important trade issues that it believes the Council must tackle. These include:

- the need to consider further ways of helping producer countries to begin and/or increase their production and trade of value added products through ITTO project activities;
- the need for ITTO to provide guidance to member countries about cost-effective ways of implementing sustainable forest management practices and the development of certification procedures. The TAG also suggested that ITTO take a leading role in facilitating the exchange of information regarding national and regional certification schemes and mutual recognition procedures;
- the need to coordinate and facilitate the development of an effective market promotion strategy for tropical timber products as a priority action of the Organization to enhance competitiveness with non-timber products. The importance of lifecycle analysis techniques in assisting this process should be recognised and identified as a priority issue in the project work of the Organization;
- the need for ITTO to continue and strengthen its support for reduced impact logging initiatives and to increase the publicity given to the results of this work so as to improve the image of the tropical timber industry; and
- the need to improve the quality of statistical information on the trade in tropical timber products.

The TAG expressed its appreciation for the way in which the Council has sought the TAG's input to its deliberations and proposed other measures that would ensure even greater involvement of the trade in decision-making. For example, it suggested that the inclusion of a TAG representative on the Expert Panel on Project Appraisal would confer "considerable benefit" to the work of the panel. It also requested ITTO members to include trade representatives

### **Tropical Timber Market Information Service**

The ITTO Secretariat issues a two-weekly bulletin by email on tropical timber market trends and trade news from around the world. It contains prices for over 400 tropical timber and added value products and a range of other relevant information. To subscribe, write to Mike Adams at [itto-mis@itto.or.jp](mailto:itto-mis@itto.or.jp) or see the bulletin on the web at [www.itto.or.jp](http://www.itto.or.jp)

### **Participating in the TAG**

The TAG is open to anyone with an interest in the tropical timber trade, including representatives of tropical forest industries, timber exporters and importers, timber trade and industry consultants, and trade and industry associations. It encourages the participation of all during its networking prior to sessions of the International Tropical Timber Council, which are convened in May and November every year. In particular, though, the TAG encourages more active attendance and participation of trade and industry representatives at the Council sessions themselves. Attendance may be as part of a member country delegation or as an independent observer and there is no fee.

To get in touch with the TAG, contact its coordinator, Mr. Barney Chan, Sarawak Timber Association, at 11 Floor, Wisma STA, 26, Jalan Datuk Abang Abdul Rahim, Kuching 93450, Sarawak, Malaysia; Fax 60-487 888; [sta@sta.org.my](mailto:sta@sta.org.my). Other contacts are Graham Bruford at the UK Timber Trades Federation ([gruford@idt.net](mailto:gruford@idt.net)); and Wendy Baer at the International Wood Products Association ([wbaer@iwpawood.org](mailto:wbaer@iwpawood.org)).

in their delegations at future Council meetings to facilitate increased participation by the trade. The TAG recognised that it too had a role to play in this respect and pledged to do all it could to achieve this aim. It expressed the hope that decisions related to the ITTO Objective 2000, communications and outreach, and certification, are speedily agreed and implemented.

## Joint Session Applauded

The Committee on Economic Information and Market Intelligence and the Committee on Forest Industry held a joint session to consider several reports of relevance to both, including on lifecycle analysis, the competitiveness of tropical timber, secondary processing of forest products, and the reduction of waste. According to the TAG, the joint session was “a very useful exercise” and the subjects canvassed “are important areas of work which need follow-up action at future meetings of the committees to facilitate a flourishing trade in tropical timber products”.

The TAG also stated its belief that the subject of the positive contribution of the forest industry to sustainable economic development should be considered further and to this end solicited comments from delegates on a project idea tabled by the TAG. The aim of the project would be to illustrate that primary wood-based industries contribute significantly to economic development and that the benefits multiply as the sector progresses further into added value production.

## Next Annual Market Discussion

In its meetings during the session the TAG discussed the subject of the Annual Market Discussion, which will be held in conjunction with the 30th session of the Council next May. The Council convenes such a discussion each year to provide a forum for the trade and to increase the interaction between the trade and Council delegates.

The title of the forthcoming discussion will be ‘Regulations for a sustainable timber trade – relevant issues’. This is a topic which the TAG believes will be of considerable interest to the tropical forestry and timber trade communities because it addresses the impact on the industry of the growing number of regulations for sustainable forest management. The discussion

## Why Strengthen the Partnership Between the Trade and ITTO?

It is increasingly obvious that the best course of action for the tropical timber trade is to vigorously pursue sustainable forest management. The goals of ITTO, then, are synonymous with those of a responsible trade.

The trade has an excellent opportunity to help fashion global forest policy initiatives through its involvement in ITTO. The Organization has already achieved significant change in forest policy, influencing the development of policies in many of its member countries.

Yet while many policy advances have been made, they are yet to be translated into broadscale action in the forest. ITTO and its members therefore need to engage the private sector more actively as a partner in the cause of sustainable forest management: it, after all, has a determining influence on how operations are conducted at the forest management unit level. If the actions decided upon at the Council level are to be both implementable and useful at the field level, the active input of the forestry trade and industry – along with that of other stakeholders – will be essential.

At its last two sessions, the Council has pledged to move “as rapidly as possible” towards a sustainable tropical timber trade – the ITTO Objective 2000 – and is already taking measures in this regard. For example, at this session it approved the development and implementation of action plans in member countries and the strengthening of national programs. It has also agreed to assist member countries to establish ‘Objective 2000 boards’ to build broad-based support and high-level commitment to sustainable forest management (see pages 2–3 for a complete summary of outcomes from the 29th session). The ramifications of such moves may be significant, so it behoves the trade to be involved at the outset.

will explore the effect of increasing the size of the bureaucracy for monitoring and implementing aspects of sustainable forest management and will pose the question: “is increasing the number of regulations and increasing the size of bureaucracies really the way forward to sustainable forest management?”

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*‘the forthcoming discussion ... will be of considerable interest to the tropical forestry and timber trade communities because it addresses the impact on the industry of the growing number of regulations for sustainable forest management.’*

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To add value to the Annual Market Discussion, the Council approved and funded a project that will enable it to commission two keynote presentations by specialists on the selected theme. This is funded partly by the TAG itself and spans a two-year period. ■

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*Footnote: the community of environmental non-governmental organisations with interests in tropical forests is yet to take up the invitation of the Council to establish a similar advisory group to the TAG.*



by Adam Gerrard

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Vanuatu is a small nation located in the South Pacific made up of over 80 islands with a total land area of 12,336 km<sup>2</sup>. Previously known as the New Hebrides, it was administered by a joint British and French condominium after 1906 and became the independent nation of Vanuatu in 1980.

Most of the islands are either mountainous or steeply undulating, with 55 per cent of the country having slopes greater than 20°. Generally, the steeper country is covered by forest or secondary growth, while coconut plantations and other agriculture is carried out on the narrow coastal slopes and plains. The climate varies from wet tropical in the north to sub-tropical in the south.

## People

The 1999 census estimated Vanuatu's population at 190,000 people, growing at a rapid 2.3 per cent per year. Populations on most islands were much higher in earlier centuries; as many as 1 million people are estimated to have inhabited the country before European contact. Vanuatu has three official languages: English, French and Bislama; the latter language is a type of pidgin spoken by over 70 per cent of the population. More than 100 distinct traditional languages are still in use.

Melanesian custom-ownership gives fundamental rights to landowners, with the government having virtually no direct role in land management.

## The Economy

Vanuatu's economy is essentially agricultural, with about 80 per cent of the population primarily engaged in the subsistence farming of food crops such as taro and yams. The provisional gross domestic product for 1995 was Vatu 26.6 billion (US\$235 million). Of this, agriculture accounted for around 23 per cent and services 63 per cent; however, agriculture (including forestry) earned a dominant 85 per cent of the nation's export income. Vanuatu's gross national product per capita in 1997 was estimated to be US\$1,340. This puts it in the middle of the range of nearby South Pacific nations.

## Vanuatu's Forestry Sector

The forestry sector contributes significantly to the export earnings of the country, usually ranking second or third in the commodities behind copra and kava. The value of forest products exported has more than doubled in the past five years, from Vt255 million in 1994 to Vt536 million in 1999 (see Table 1). This represented around 13 per cent of total export earnings in 1999.

In many cases, forestry is a significant source of cash income for rural dwellers. In addition, the forests provide a wide range of products used for subsistence purposes.

In 1999, landowners were paid about Vt36 million in royalties for 41,000 m<sup>3</sup> of logs. It is estimated that forestry workers were paid around Vt120 million in wages and the government collected Vt35 million in fees and taxes. Over 500 people are estimated to be employed in forest operations and in fixed sawmill and other wood-processing industries. Several hundred more are involved on a full or part-

time basis with small mobile sawmills (see box).

Forests, though, are of more than economic importance. This is recognised in the Vanuatu National Forest Policy, which notes that "forests, land and people in Vanuatu are inseparably linked. The forests are a vital part of the country's cultural heritage and contribute to the welfare and economic development of the people".

The Government of Vanuatu is therefore strongly committed to ensuring that its forests are managed on a sustainable basis.

## Forest Types and Resources

Almost one-third of Vanuatu is covered by forest greater than 10 m tall, comprising 205,000 hectares of mid-height forest (>20m tall) and 234,000 hectares of low forest. A national forest inventory completed in 1993 estimated the total timber resource at about 13 million m<sup>3</sup>. However, only about 20 per cent of the total resource is thought to be commercially available due to factors such as steep slopes, dissected landforms, low sawlog volumes and cultural restrictions.



Natural regeneration of whitewood, six months after logging conducted under the Code of Logging Practice, at the Forari demonstration forest, Efate Island, Vanuatu.

The average commercial sawlog yield is rather low by international standards at around 15 m<sup>3</sup> per hectare. The National Forest Policy has set the sustainable yield at 68,000 m<sup>3</sup>/yr; in recent years, harvest levels have therefore been below the national sustainable yield (Table 1). However, logging is currently concentrated on the largest island and there are many other areas where the forests are being under-used. A lack of infrastructure (roads and shipping) are major constraints to further forest development.

## Conservation and Biodiversity

Vanuatu's biodiversity is not well documented or understood. The formal concept of conservation, protected areas and national parks is very new to Vanuatu; the placing of the 'tabus' has been the traditional method used for conserving resources. Protection by taboo is becoming less effective due to the changing cultural environment and under the drive for economic development. Several important protected areas have been set up and are being managed by local communities with support from donors, NGOs and various government departments.

## Forest Policy

A National Forest Policy was officially released in 1997, the result of more than two years of consultative work. It contains strategies written to guide the work of the Department of Forests, not only on 'big-picture' issues but also on an operational basis. When field officers develop their work plans and budgets, they must demonstrate consistency with the policy even down to quoting the relevant policy section to ensure they have checked and are familiar with it.

The National Forest Policy recognises the broad scope of forestry activities and stakeholder interests. The document is detailed enough to provide clear guidance to the Forestry Department and information to stakeholders about government intentions and sector roles and issues. It has proved useful in attracting donor and private investment and in ensuring that projects meet both domestic needs and donor objectives.

## Forestry Legislation

Vanuatu's forestry legislation is currently being reviewed with the aim of providing a legal

**Table 1: Vanuatu's annual log production and export value, 1987–99**

Year	Annual log production			Annual timber products exports		
	Exports (m <sup>3</sup> )	Domestic (m <sup>3</sup> )	Total (m <sup>3</sup> )	Log exports FOB value (Vt million <sup>1</sup> )	Volume of processed exports (m <sup>3</sup> )	Processed exports FOB value (Vt million)
1987	23,716	15,521	39,237	0.2	908	1.8
1988	5,001	17,899	22,900	47.1	1,827	59.2
1989	15,085	19,923	35,008	101.4	1,950	101.2
1990	–	19,276	19,276	–	1,939	90.1
1991	–	27,336	27,336	–	1,674	86.0
1992	–	20,355	20,355	–	2,269	146.4
1993	4,014	21,084	25,098	43.1	2,598	224.4
1994	–	43,874	43,874	–	5,107	255.4
1995	–	32,986	32,986	–	4,160	233.9
1996	–	35,854	35,854	–	7,940	362.0
1997	–	37,513	37,513	–	14,938	514.9
1998	–	36,907	36,907	–	12,917 <sup>2</sup>	524.2 <sup>3</sup>
1999	–	40,676	40,676	–	12,219 <sup>4</sup>	536.9 <sup>4</sup>

Notes: <sup>1</sup>currently 1 US\$ = 140 vatu; <sup>2</sup>Estimated from sawmillers returns; <sup>3</sup>Includes 33,406 kg of sandalwood valued at 10,962,000 Vatu; <sup>4</sup>Data for Santo only – ie excludes exports from Port Vila

framework to implement the National Forest Policy. The new legislation will be drafted for public consultation leading to a national summit in late 2000 following the successful model used in the development of the policy.

## Code of Logging Practice

The Vanuatu Code of Logging Practice was developed in 1995 with the assistance of the AUSAID-funded Vanuatu Sustainable Forest Utilisation Project. The Forestry Act was amended in October 1997 to provide a legal basis for preparing and amending the code and established strong penalties for breaches of it. A revised version of the code was prepared in March 1998 incorporating minor improvements based on experience gained so far.

The Forestry Department is developing a competency-based assessment system to license forest operators. In particular, specialised training has been provided for logging planners and supervisors as well as for machine and chainsaw operators. Landowners also require training in and awareness of the Code of Logging Practice. Consistent with ITTO objectives, the Department is working towards full compliance with the code by the end of 2000.

## Forari Reduced Impact Logging Demonstration Forest

The Department of Forests has developed a forest area designed to demonstrate well planned and executed logging in compliance with the Code of Logging Practice and related Reduced Impact Logging Guidelines. This has proved a

very useful initiative, assisting a range of people – from landowners to politicians – to gain a better appreciation of the benefits that a well-managed forest can offer.

## ITTO Membership

Vanuatu officially became the 55th member of the ITTO in May 2000. The country took the step of joining because ITTO's goals are consistent with those of Vanuatu, particularly in relation to producing a sustainable supply of tropical timber, and because joining an international community of countries dedicated to such goals should reinforce the nation's commitment to sustainable forest management. ■

## Mobile Sawmilling

Mobile sawmills (commonly called 'walkabout' sawmills) are small, portable mills that can be taken into the forest and even up to the stump to mill the log. They have very low production capacity and produce moderate quality timber but have the significant advantage of creating employment and income opportunities for local communities. They can help minimise environmental disturbance by reducing the need for heavy extractive machinery, but uncontrolled use can also create both social and environmental problems.

There are currently about 100 walkabout sawmills in Vanuatu. In the National Forest Policy, about one-third of the sustainable yield is allocated to mobile sawmills (19,000 m<sup>3</sup>); the current harvest is estimated to be between 4,000 m<sup>3</sup> and 8,000 m<sup>3</sup> per year. New regulations controlling their use were developed and approved in 1997.

# Fellowship Report

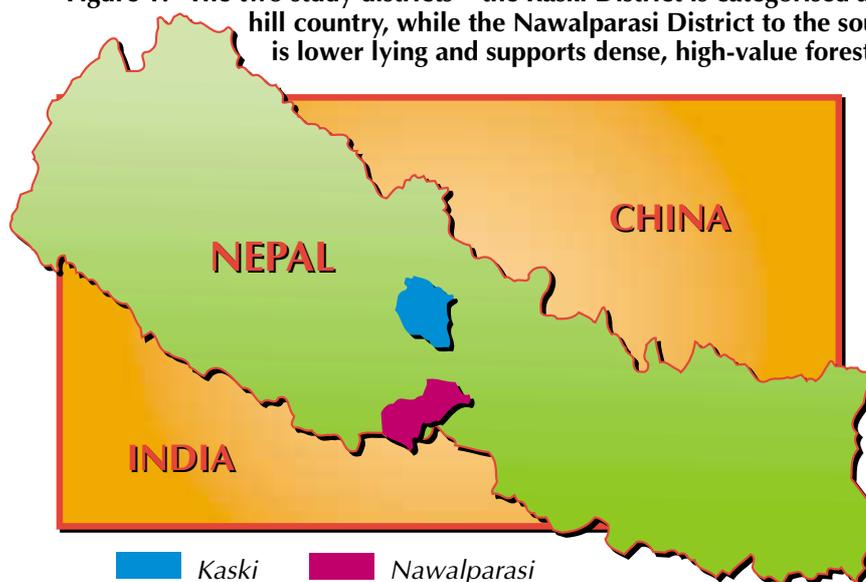
## Identifying conflicts in community-based tropical forest management in Nepal

by Binod Regmi<sup>1</sup> and Benktesh Sharma<sup>2</sup>

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Figure 1: The two study districts – the Kaski District is categorised as hill country, while the Nawalparasi District to the south is lower lying and supports dense, high-value forests



Community forestry is a form of participatory forest management enabling local people to manage and use local forest resources for the fulfillment of their basic needs. In Nepal, it has been applied to a spectrum of situations, from small, degraded forest patches in hill country to mature and well-stocked dense forests in the lowland Terai region.

Community forestry programs in the hilly regions of Nepal are now well established. In contrast, the proportion of the total potential community forest area actually handed over to community management in the Terai region is far less, despite recent interest in forestry because of the high value of the resource and its proximity to markets. This delay is attributable to many factors, including organisational limitations, financial constraints and a lack of facilitating legislation. Perhaps, too, development is hindered by intra-user, inter-user and inter-institutional conflicts.

This study was carried out to identify such conflicts, to assess their sources and variability according to accessibility and the degree of ethnic heterogeneity, and to recommend possible solutions through community forestry. The assumption was that a greater number of conflicts would produce less-efficient outcomes. We also set out to test the hypothesis that such conflicts are a significant factor in the relatively low rate of community forest management uptake in the Terai region.

## Research Methods

The study was carried out in eight community forests in the Terai's Nawalparasi District and four community forests in the hilly Kaski District (Figure 1). These forests were selected based on their degree of ethnic heterogeneity, accessibility to major highways, forest type, and the maturity class of the vegetation. Questionnaire surveys and semi-structured interviews were conducted in each community using a 'standard' respondent group that comprised informants from all the stakeholders: local leaders, teachers, government and non-government employees, women, and both poor and rich people. Direct field observations were also made to gather information on such things as management interventions and vegetation condition.

The conflicts listed by respondents and observed in the field were categorised into eleven groups according to the source of origin or the issues giving rise to them. The categories were weighted and converted into numerical values. Individual forests were weighted according to maturity class and the economic importance of the major tree species present. Correlation analyses of conflicts versus ethnic heterogeneity and accessibility were carried out. Similarly, multiple correlation analysis of conflict versus area of forest available per household and forest-generated income were also conducted.

## Fellowships Awarded

Twenty-five fellowships were awarded at the 29th session of the International Tropical Timber Council last November, to the following applicants:

**Dr Marlene de Matos Malavasi** (Brazil); **Mr Patrice Taah Ngalla** (Cameroon); **Mr Daniel Pouakouyou** (Cameroon); **Mr Georges Herbert Chekuimo Tagne** (Cameroon); **Sra Sandra Rodriguez Piñeros** (Colombia); **M Yapi Emmanuel Amonkou** (Côte d'Ivoire); **Mr Jean-Remy Mekombo Makana** (Dem. Rep. of Congo); **Ms Sobha Kumar** (Fiji); **Mr Ben Nathan Donkor** (Ghana); **Mr Emmanuel Opuni-Frimpong** (Ghana); **Dr José Cristino Melgar** (Honduras); **Ing Carlos Vindel Cruz** (Honduras); **Dr Kulvir Singh Bangarwa** (India); **Mr Dinesh Misra** (India); **Dr Om Parkash Toky** (India); **Mr Muslim Salam** (Indonesia); **Mr Paimin Sukartana** (Indonesia); **Ms Eli Nur Nirmala Sari** (Indonesia); **Mr Kang Chiang Liew** (Malaysia); **Mr Kang Wee Liong** (Malaysia); **Mr Tek Narayan Maraseni** (Nepal); **Mr Timothy Thorpe** (New Zealand); **Sr Manuel Edmundo Salazar Campos** (Peru); **Ms Gloria Arbuís Manarpaac** (Philippines); **Sr Julián Alberto Gutiérrez** (Venezuela).

## Nature and Variability of Conflicts

Interestingly, and contrary to our original hypothesis, we found no significant difference in the number of conflicts between the two districts. However, the *character* of such conflicts is quite different and acts to restrict community forestry in the Nawalparasi District.

In the case of communities surveyed in the Nawalparasi District, the number of conflicts increased as the distance from the major highway decreased. This is probably related to ease of access for wood poachers, the ease of invasion by outsiders, and a high immigration rate near the highway. The reverse was true in the Kaski District (although in this case the correlation coefficient was not significant), possibly because of the more frequent visits by government staff to the community forests, particularly near the major highways.

Almost all respondents in the Nawalparasi District implied that the level of technical post-formation support provided by the government was inadequate. We also found a significant positive correlation between the level of conflict, per household funds and per household forest

area: as per household forest area increases, so too do household funds and the level of conflict. One interpretation of this finding is that the allocation of land creates local 'timber barons' who are able to dominate forest management. However, we found little correlation between ethnic heterogeneity and the overall number of conflicts.

Our analysis revealed that the Nawalparasi community forests are not managed in a truly participatory basis: the users seemed to be largely passive receivers of benefits. Only committee members are actively involved in community forest activities; they are paid allowances to attend meetings, monitor the logging operations carried out by contractors, and so on. In the Terai region, timber is the most highly prized forest product and the forest has a high commercial value – outsiders are very interested in the resource. In the hills, fuelwood and then fodder are the most valued forest products: the harvest of these by local people is routine and acts to bring the users closer to the forest. This is the reason that hill people are more active in management activity than are the people in the Terai. Because of the lower commercial value and reduced accessibility, outsiders are less interested in the resource.

## A Mechanism for Resolving the Conflicts

The key to understanding the conflicts over community forest management in the Terai region is the commercial value of such forests. To reduce inequities, we suggest that the per household allocation of forest lands be limited to a target area of 0.25 hectares per household. There is also a need for greater extension work: the establishment of a separate community forest section in district forest offices would help to provide post-formation support and would also assist coordination with other agencies and non-governmental organisations.

The landscape in the Terai region is a mosaic of agricultural land, community settlement and remnant forests containing high-value timber. Communities are showing increasing interest in managing the forest resource in these areas: a more participatory approach would generate greater local employment, distribute the income more equitably and, inevitably, reduce conflict.

*This work was conducted with the assistance of an ITTO fellowship grant.* ■

## ITTO Fellowships Offered

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

*Eligible activities* include:

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

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

- improving the transparency of the tropical timber market;
- improving the marketing and distribution of tropical timber species from sustainably managed sources;

- improving market access for tropical timber exports from sustainably managed sources;
- securing the tropical timber resource base;
- improving the tropical timber resource base, including through the application of criteria and indicators for sustainable forest management;
- enhancing technical, financial and human capacities to manage the tropical timber resource base;
- promoting increased and further processing of tropical timber from sustainably managed sources;
- improving the marketing and standardisation of tropical timber exports; and
- improving the efficiency of tropical timber processing.

In any of the above, the following are relevant:

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

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

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

The maximum amount for a fellowship grant is US\$10,000. Only nationals of ITTO member countries are eligible to apply. The next deadline for applications is **28 March 2001** for activities that will begin no sooner than July 2001. Applications are appraised in May and November each year.

Further details and application forms (in English, French or Spanish) are available from Dr Chisato Aoki, Fellowship Program, ITTO; Fax 81-45-223 1111; Email [itto@itto.or.jp](mailto:itto@itto.or.jp) (see page 31 for ITTO's mailing address).



## Global Connections in Forestry

*XXI IUFRO World Forestry Congress*

7–12 August 2000

Kuala Lumpur, Malaysia

### Report by A. Sarre

Mega-conferences such as the IUFRO World Forestry Congress, held every five years, are rarely the place for ground-breaking science. They are, nevertheless, an essential element in fostering a global effort in forest research, conservation and management.

IUFRO has been described as ‘organised chaos’. It is a voluntary, non-profit, non-governmental scientific union open to all organisations involved in forestry research and forest science. Established in 1892, it currently comprises eight scientific divisions, 65 research groups and 203 working parties. It also has a special program for developing countries which aims to foster research in developing countries through information services, the production and distribution of training material, and the organisation of courses.

This 21st IUFRO World Congress, attended by around 2,300 people, was particularly notable because it was the first such congress to be held in a developing country; it was also the largest forestry event ever staged in Malaysia. The organisers have a right to be proud: as far as this correspondent is aware, the congress took place without a hitch. Even the fact that the Prime Minister, Dr Mahatir, withdrew at the last minute as guest of honour failed to diminish the event. The outspoken Minister of Primary Industries, Dr Lim, delivered Dr Mahatir’s speech in his place and also made some typically robust comments of his own.

The scope of the Congress was enormous. More than 100 scientific papers were delivered in 20 sub-plenary sessions, the IUFRO working groups met in 129 group sessions, 18 satellite meetings were convened and about 500 scientific posters were displayed. Moreover, five keynote speakers held forth on ‘big picture’ topics, from cultural diversity in forests to global visions of forestry and society. And more than 50

organisations, including ITTO, presented their products and services in display booths.

The theme of the Congress, ‘Forests and society: the role of research’, was broad enough to encompass almost any topic, and certainly the full range of forestry issues was canvassed. But there was plenty of material relevant to tropical forestry, reflecting both the strong involvement in the Congress of scientists from Malaysia and neighbouring countries and the increasing scientific interest in tropical forest research that has been evident in recent years.

### *ITTO satellite meeting*

On the Tuesday of the Congress, ITTO hosted a satellite meeting attended by about 150 people to introduce some ITTO projects currently under way in the region. Dr Paul Chai of the Sarawak Forestry Department spoke about the Lankjak-Entimau/Betung Kerihun Transboundary Conservation Reserve on the border of Sarawak and the Indonesian state of West Kalimantan. This reserve is being developed with funding from ITTO; at nearly 1 million hectares it is the largest transboundary forest conservation reserve in the Asian tropics. On the Sarawak side, a two-phase ITTO project:

- has conducted an international scientific expedition on both the Sarawakian and Indonesian sides of the border;
- has demarcated and protected the boundaries of the reserve;
- is establishing a management headquarters and a field studies centre; and
- is working with local people to establish new farming and forest management techniques that integrate use and conservation in the Sanctuary’s buffer zone.

A similar project is under way on the Indonesian side to facilitate management of the reserve and to develop new sources of income in collaboration with local people.

Mr Stephan Andel spoke about an ITTO-funded project under which a model forest management area in Sarawak is being developed. This project, which commenced in 1993, has developed a management plan for about 162,500 hectares of forest, introduced training in sustainable forest management for more than 100 forest workers, and put a range of reduced impact logging techniques into practice.

Dr Mohammed Shahwahid Othman of the Universiti Putra Malaysia presented the last paper of the evening, reporting the results of an ITTO-funded project to devise a methodology for assessing the costs of sustainable forest management.

The last formality of the evening was the launch of a series of publications on conservation of tropical timber trees by the Honourable Datuk Haron bin Siraj, Secretary General of the Malaysian Department of Primary Industries (see pages 7–8 for an interview with Datuk Haron).

The series, which was funded by ITTO through contributions by the governments of Japan and the USA and produced by the Malaysia-based Regional Centre for Forest Management, comprises:

- *State-of-the-art Review on Conservation of Forest Tree Species in Tropical Asia and the Pacific;*
- *Technical Guidelines for the Establishment and Management of In situ Conservation Stands of Tropical Timber Species;*
- *Technical Guidelines for the Establishment and Management of Ex situ Conservation Stands of Tropical Timber Species; and*
- *Operational Plans for the Conservation of Selected Tropical Timber Species in Southeast Asian Countries.*

According to ITTO’s Executive Director, Dr. Manoel Sobral Filho, who chaired the satellite meeting and spoke during the launch, conserving the genetic diversity of tropical timber trees is essential for a viable tropical timber trade.

“This diversity is the raw material for genetic improvement in the future, which will help increase timber yields and improve wood quality,” he said. “This in turn will increase the viability of sustainable forest management as a land use option. That’s good for forests, good for trade and good for people who are dependent on forests for their livelihood.”

Maintaining the biodiversity of tropical timber species is also important for other reasons, he said.

“Timber species play crucial ecological roles. By conserving their genetic diversity we will help ensure that the forest can cope with environmental change.”



## Networking

Several scientists attending the World Congress suggested to me that mega-meetings such as this were valuable not so much for the quality of the science – which is inevitably variable and suffers from a lack of critical mass in any one discipline – but more for building international networks that will facilitate and strengthen collaborative and inter-disciplinary research. Having forest economists (who can be dry) talking with forest hydrologists (who are more likely than most to be wet) over dinner, for example, is surely no bad thing.

Networks in forestry were actually the subject of a sub-plenary session towards the end of the Congress. Case-studies of networking efforts by the Tropical Agricultural Research and Higher Education Centre (CATIE), FAO, ITTO and IUFRO were presented, along with a paper by Timo Tahvanainen on the potential of web-based distance learning technology in forestry education. The consensus of the session seemed to be that networks are an essential element for achieving improvements in forest management, conservation and research and that international organisations are playing an important role in developing them.

The IUFRO Congress was an undoubted success, thanks largely to the host country and its forest-related institutions (particularly the main organiser, the Forest Research Institute Malaysia). The high level of attendance, though somewhat down on the previous Congress, was also a good indicator of success. ITTO made its own contribution to the numbers: nine people from developing countries were able to attend the Congress courtesy of ITTO fellowship grants. There did, however, appear to be a gender imbalance: a quick sample of the participant list suggested that only about 15 per cent of delegates were female.

The congress made a number of resolutions (see [www.iufro.boku.ac.at/iufro/congress/congress\\_resolutions.htm](http://www.iufro.boku.ac.at/iufro/congress/congress_resolutions.htm) for the full text). Notable among them were:

- research should increase within single disciplines while simultaneously moving towards an inter-disciplinary, problem-solving approach;
- IUFRO should expand its collaboration with other organisations that seek to enhance

biophysical and social research capacity in countries with developing and emerging economies; and

- IUFRO should encourage the role of women and disadvantaged researchers in forest sciences.

*The next IUFRO World Congress will be held in Brisbane, Australia, in 2005.* ■

## Conservation Versus Poverty

*IUCN World Conservation Congress*

4–11 October 2000

Amman, Jordan

### Report by A. Sarre

The IUCN World Conservation Congress also qualifies as a mega-gathering: it was attended by an estimated 2,000 people from 140 countries representing governments, non-governmental organisations, UN agencies and the private sector. The theme was ‘Ecospace’, a new word meant to convey the concept that ecosystem management more often than not transcends political boundaries.

The Congress included several interactive sessions to examine key issues. One such session focused on forests and was titled ‘Forest ecospace, biodiversity and environmental security’. Attended by about 120 people, the session canvassed many of the thorny issues with which the global forests debate has been grappling for many years. David Cassells, Director of the Iwokrama International Centre for Rain Forest Conservation and Development (funded partly by ITTO), chaired the session and opened it with some general comments on the forces behind the forests crisis. These included market, policy, governance and ethical failures and an inadequate scientific knowledge of forest ecosystems. The session, he said, had two aims: to consider the dangers and opportunities presented by the global forests crisis and to discuss frameworks for action.

## Disaster case-studies

Case-studies on various disasters were presented. For example, Nigel Dudley noted that 14 million hectares of forest were ‘impacted’ by fires worldwide in 1997/98. Pascal Girot reported that Hurricane Mitch left 1,800 people dead and caused US\$6 billion worth of damage when it swept through Central America in 1999: the damage it caused, according to Dr Girot, was exacerbated by deforestation and ecosystem degradation, as well as by changes to lowland drainage. According to Ainun Nishat, although cyclones have a major influence in Bangladesh, their impact is reduced by mangrove forests on the southwest coast. Experts have estimated that this protection function is worth US\$460 million per year.

A basic premise of the session was that the potential for disaster increases as deforestation increases. Dr Girot suggested that solutions must involve local stakeholders and, in Central America at least, should focus on ‘highland–lowland’ interactions. Scale, he said, is critical: individual farms need to be linked to the watershed/landscape level if problems at that higher level are to be addressed. This line of thought must surely be taken further: if problems such as biodiversity loss and global warming are global, we need to link individual farms more strongly with the global community. In particular, global services will need to be paid for at the local level.

### Crossing the boundary

On a somewhat different tack, Yemi Katerere presented a case-study in Zimbabwe on contested boundaries between state conservation and communal lands. In the Nyangui forest, a long-standing boundary between Forestry Commission and local community land became controversial when the Forestry Commission erected a fence to seal off access. This act provoked a reaction from people living nearby, who took the Forestry Commission to court. According to Mr Katerere, as long as the existing boundary didn’t impede access to forest resources, the community did not contest its existence. Thus, the ‘meaning’ of the boundary – brought home to locals by the erection of the fence – was more important than its existence. Boundaries can assist in defining the appropriate relationship between the parties in terms of access to resources, roles and responsibilities,



and accountability. But this particular conflict escalated because there was no basis for negotiation: the rights of local people were extinguished crudely and bluntly. This demonstrates the need for effective conflict management mechanisms that facilitate transparent negotiations and minimise transaction costs. Inevitably, conflict will only be ‘managed’ if local people are able to improve their livelihoods; thus, resource management must provide local employment and create opportunities for local entrepreneurs.

This point was also taken up by Bob Fisher, who presented experiences from Asia. He suggested that strategies for meeting livelihood needs are essential for forest conservation. The ‘substitution’ strategy, which involves creating alternative, non-forest sources of income or substitute products is still common in conservation projects in Asia but is increasingly seen as flawed.

An alternative strategy is one that involves incentives: this links income potential with successful conservation. Ecotourism is a particularly good example of this kind of approach because its success is wholly dependent on the success of the conservation effort; carbon credits – should the market develop as some say it will – will be another. According to Mr Fisher, there is no detailed evidence yet that the incentives approach works any better than the substitution strategy. Nor is there evidence that income generation schemes for forest conservation are working: the cost/benefit analyses that have been conducted to date have been weak. Moreover, the most valuable products and services from forests still tend to be controlled ‘off site’ and return little to local communities. Even many community forestry programs have taken ‘top-down’ approaches and led to inequitable outcomes.

Mr Fisher maintained that the most effective results are obtained when controlling institutions change their policies to give greater local access to forest products and services. Too often, though, conservation efforts continue to lock people out of resources; the alleviation of poverty is seen as a means to an end rather than of equal importance to conservation.

### **Actions that can be taken**

A number of other speakers also presented enlightening case-studies and overviews,

including Juergen Blaser (who writes in this edition of the *TFU* – pages 9–14). Only one day long, the session was unable to make much progress on ‘frameworks for action’, but the rapporteurs of the session did produce a list of challenges that IUCN could address:

- rigorously test the theory that supporting income generation from forests can contribute to conservation and poverty alleviation;
- emphasise and support tenurial negotiations and the full implementation of community forestry programs;
- focus on both the direct and underlying causes of deforestation, loss in forest quality, and the links with ‘natural’ disaster damage;
- explore ways to work at the watershed/landscape scale to better address highland–lowland interactions;
- emphasise and build on effective action on the ground, and mobilise the full range of stakeholders from the local level to the global level;
- work cross-sectorally;
- develop partnerships with key players who can have an influence; and
- gather and disseminate information where it is lacking and avoid studying issues that are already well known.

### **Plenary resolutions**

The IUCN World Congress performed a number of other tasks. Twelve thematic interactive sessions were interspersed with plenary sessions that debated the organisation’s numerous programs and bodies and decided on its work program for the next four years. It also adopted a total of 104 resolutions, a number of which relate directly to forests. Foremost of these are: Resolution CGR2/PRG042.Rev.2, which encourages IUCN assessment of the new World Bank Forest Policy and identification of potential areas for IUCN involvement; Resolution CGR2.PR043 Rev.1, which recommends that IUCN projects be designed to alleviate poverty and rehabilitate the environment; and Resolution CGR2.PR046 Rev.1, which requests an analysis of forest sector corruption, including a review of policy options to eliminate corrupt practices, case-studies of such policies, and an annotated directory of organisations and instruments

involved in the elimination of forest sector corruption. It also urges that codes of conduct for sustainable forest management be perfected and that states and corporations abide by them.

*More information on the congress can be found at [www.iucn.org](http://www.iucn.org)* ■

Edited by Alastair Sarre

## Fighting Fire

The World Resources Institute published a report in July that blames the forest management regime in Indonesia under former president Suharto for the current problem of uncontrolled forest fires in the country. The authors of the report say that the solution lies in the major restructuring of relationships between the state, the private sector and the millions of forest-dependent peoples. They make a number of recommendations, including a moratorium on new concessions for oil palm, timber and other plantations until a national inventory of the permanent forest estate is completed, and the establishment of effective mechanisms for independent citizen monitoring of trends and threats related to forest lands and resources.

*The report is available at [www.wri.org/media](http://www.wri.org/media) or write to WRI at 10 G Street, NE, Washington, DC 2003, USA; Fax 1-202-729 7610; Email [aamor@wri.org](mailto:aamor@wri.org)*

## Seeds on the Move

A paper published recently in *Conservation Biology* investigates the effects of human intrusion – mainly the effects of subsistence hunting – on the dispersal of tree seeds. Using two similar rainforest sites that differed in the extent of protection from human intrusion and habitat connectivity, the researchers set out to determine whether a decrease in the abundance of mammals, which usually occurs as human population density increases, would affect the fate of such seeds. They found that for all species combined, the rate of dispersal was twice as high at the less disturbed site. The authors conclude that the biological sustainability of timber species dispersed by terrestrial mammals may be more likely in sites protected from hunting than in forested patches in which hunting occurs more often. In a letter to the *TFU*, one of the authors, Dr Guariguata, notes that “the role of vertebrate fauna as being critically important to the biological sustainability of natural forest management in the tropics has long been mentioned, but our paper is perhaps one of the first that shows empirical evidence”.

## ITTO Consorts with Compendium

ITTO has joined a consortium of organisations in the development of the Forestry Compendium, a dynamic, multimedia encyclopaedia published by CAB International on CD-ROM.

The Compendium is a silvicultural reference tool providing information on a wide range of woody species. Each species is presented as a datasheet with text, illustrations and maps covering taxonomy, distribution, climate, soil, silvicultural characteristics, silvicultural practice, pests/diseases, uses and disadvantages. It also includes an interactive species selection module, a function which should prove useful during the planning of forestry plantations.

Recently, the Consortium agreed that the price of the compendium should be reduced to make it more accessible. The CD-ROM is now sold to institutions in developing and newly developed countries, and to individuals everywhere, for US\$100. The cost is US\$600 for institutions in developed countries and for corporations worldwide.

*For more information contact: CAB International, Wallingford, Oxon OX10 8DE, UK; Fax 44-01491-833508; [www.cabi.org](http://www.cabi.org)*

## Forum on Forests Established

On 18 October 2000, the Economic and Social Council of the United Nations established an intergovernmental body called the United Nations Forum on Forests (UNFF), with the aim of promoting “internationally agreed actions on forests at the national, regional and global levels”. It took the action by adopting a draft resolution submitted by the Council’s president. According to the resolution, the main functions of the new body will be: to promote international cooperation on forest-related issues; to implement proposals made by the UNFF’s predecessor bodies, the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests; to mobilise financial, technical and scientific resources to that end; and to monitor and assess progress at all levels. The Council decided that at the end of five years the UNFF will consider the prospects of a legal framework – treaty – on all types of forests.

## Wood Production from Forest Plantations

As part of its Global Forest Products Outlook Study, FAO has just produced an outlook for wood supply from forest plantations to the year 2050.

The study is in three main sections. The first examines historical trends and the current status of the global forest plantation resource in terms of its size, location, species and age composition, uses and production potential. The second examines important economic and policy factors that have driven forest plantation establishment in the past and are likely to continue to do so in the future. The last section presents three scenarios for future forest plantation expansion and potential roundwood production from forest plantations.

According to one of the authors, the modelling of potential roundwood production from forest plantations used in the study represents a significant advance on previous efforts in this field. The study includes information on over sixty countries that, combined, account for about 98 per cent of the global forest plantation resource.

*Electronic and printed copies of the report can be obtained from: Adrian Whiteman, Forestry Officer (Sector Studies), FAO, Room D423, Via Terme di Caracalla, 00100 Rome, Italy; Email [adrian.whiteman@fao.org](mailto:adrian.whiteman@fao.org)*

## Indonesia Separates Forestry Again

The amalgamation of the departments of Agriculture and Forestry, which was announced in the previous edition of the *TFU*, was short-lived. In another reshuffle, forestry will now be dealt with by a new Department of Forestry overseen by the Minister for Forestry, Dr Nur Mahmudi Ismail. ■



## Recent Editions

**Basha, S., Mohanan, C. and Sankar, S. (eds.) 1997. Teak. Kerala Forest Department & the Kerala Forest Research Institute. 274 p. US\$20 (Rs200).**

Available from: Kerala Forest Research Institute, Peechi, Thrissur – 680 653, India

Based on a conference held way back in 1991, this book contains data on the costs, prices, yields and growth rates of plantation teak. The keynote address is by the late and still-missed Y.S. Rao. Some papers in the book are weak, but overall this is a good collection of Indian and Indonesian experiences in and ideas on teak plantation management and should therefore be useful to teak growers everywhere. For more up-to-date information on teak, a recent edition of *Unaslyva* (2000/2) is also devoted to the topic.

**Bikié, H., Ndoye, O. and Sunderlin, W. 2000. L'impact de la crise économique sur les Systèmes agricoles et le changement du couvert forestier dans la zone forestière humide du Cameroun. CIFOR Occasional Paper No. 27. ISSN 0854-9818.**

Available from: Center for International Forestry Research, PO Box 6596, Jakarta 10065, Indonesia; Ph 62-251-622 622; Fax 62-251-622 100; Email [cifor@cgiar.org](mailto:cifor@cgiar.org); <http://www.cgiar.org/cifor>

**Guhardja, E., Fatawi, M., Sutisna, M., Mori, T. and Ohta, S. 2000. Rainforest ecosystems of East Kalimantan: El Niño, drought, fire, and human impacts. Springer-Verlag, Tokyo. ISBN 4-431-70272-5. xxviii+330 p.**

Available from: Springer-Verlag, <http://www.springer.de>

**Mora, A. and García, C. 2000. A cultura do eucalipto no Brasil (Eucalyptus cultivation in Brazil). Sociedade Brasileira de Silvicultura, São Paulo, Brazil.**

This book, written in Portuguese and English, contains information pertaining to the origins of eucalypts and their status, management and role in sustainable development in Brazil.

**Richardson, D. 2000. Forestry, people and places: selected writings from five decades. Business Media Services Ltd. US\$35 (NZ\$39.95) incl. postage**

Available from: Business Media Services Ltd, PO Box 6215, Whakarewarewa, Rotorua, New Zealand; Tel 64-7-349 4107; Fax 64-7-349 4157; Email [bms@wave.co.nz](mailto:bms@wave.co.nz)

This is a collection of 72 essays, papers and addresses by New Zealander Dennis Richardson, whose career in forestry spans "the early days of modern forestry practice to the jungle tribes of Irian Jaya, the coral islands of the Pacific and the highways and byways of European forestry".

**Tan, L.C. and Durst, P. 2000. Development of national-level criteria and indicators for the sustainable management of dry forests in Asia: background papers. RAP publication 2000/08. Food and Agriculture Organization of the United Nations, Bangkok.**

This report contains five technical papers prepared as background material for a workshop in Bhopal, India in November/December 1999. They include: a discussion of why criteria and indicators for dry forests in Asia are needed at the national and forest management unit level; ITTO's experiences in the development of criteria and indicators; a treatise on the sustainable forest management of dry forests in South Asia; criteria and indicators in Bhutan, Mongolia, Nepal and China; and a brief summary of country activities related to monitoring progress towards sustainable forest management. The report is complemented by a separate publication that summarises the workshop outcomes.

**Thibau, C. E. 2000. Produção sustentada em florestas: conceitos e tecnologias – biomassa energética. Fundação Acangaú. US\$15**

Available from: Acangaú Foundation, 1189 Curador St, Belo Horizonte 30430-080, MG, Brazil; Email [marc@bhnet.com.br](mailto:marc@bhnet.com.br)

**Van der Vossen and Wessel, M. (eds) 2000. Plant resources of South-east Asia: Stimulants. Backhuys Publishers, Leiden. ISBN 90-5782-053-6. 200 p.**

Available from: Backhuys Publishers, PO Box 321, 2300 AH Leiden, the Netherlands; or, for developing countries, from PROSEA Foundation South-east Asia, PO Box 332, Bogor 16122, Indonesia; Fax 62-251-370 934; Email [prosea@indo.net.id](mailto:prosea@indo.net.id)

**Chaves, M.E. and Arango, N. (Eds). 1998. Informe nacional sobre el estado de la biodiversidad en Colombia. Instituto de Investigación de Recursos Biológicos Alexander Von Humboldt/Ministerio del Medio Ambiente. (Report on the status of biodiversity in Colombia.) 3 volumes. Published in 1998 but made available to the public only during 2000.**

This is a very useful document for Colombia's forestry sector. Volume I provides comprehensive information about the condition of Colombian

biodiversity and the regulations that govern its use, conservation and management. Volume 2 discusses the direct and indirect causes of biodiversity losses and explores the possible effects on Colombian biodiversity of predicted global climate change. Volume 3 introduces the National Biodiversity Policy, which focuses on three main actions: improving knowledge; conservation; and sustainable use.

Available from: Alexander von Humboldt Biological Resources Research Institute; Email [webmaster@humboldt.org.co](mailto:webmaster@humboldt.org.co); Web [www.humboldt.org.co](http://www.humboldt.org.co)

**Forest Restoration Unit 2000. Tree seeds and seedlings for restoring forests in northern Thailand. (Edited by J. Kerby, S. Elliott, J. Maxwell, D. Blakesley and V. Anusarnsunthorn). Biology Department, Science Faculty, Chiang Mai University, Thailand. ISBN 974-85306-6-3**

This book presents information about 45 forest tree species native to Thailand and known to be useful in forest restoration. It contains detailed descriptions of fruits, seeds and seedlings, a key to aid seedling identification and tips on propagation and planting. It contains line drawings, full colour illustrations, and an extensive glossary of technical terms.

Available from: Forest Restoration Unit, Biology Department, Chiang Mai University, Thailand 50200; Email [scopplrn@chiangmai.ac.th](mailto:scopplrn@chiangmai.ac.th)

**Glover, D. and Jessup, T. (eds) 1999. Indonesia's fires and haze: the cost of catastrophe. Institute of Southeast Asian Studies (ISEAS), Singapore, and International Development Research Centre (IDRC), Canada. ISBN 0-88936-901-1,**

Available from: ISEAS, 30 Heng Mui Keng Terrace, Pasir Panjang, Singapore 119614 ([www.iseas.edu.sg](http://www.iseas.edu.sg)); or IDRC, PO Box 8500, Ottawa, ON Canada K1G 3H9; [www.idrc.ca](http://www.idrc.ca)

This book assesses, in dollar terms, the extent of the damage caused by the 1997 fires in Indonesia. It presents the methodology of a detailed study and reports that the fires cost an estimated US\$4.5 billion in Indonesia, Singapore and Malaysia combined, although this figure excludes costs due to loss of life or loss of biodiversity. It includes damage caused by fire to timber, agriculture and a wide range of direct and indirect forest benefits; the costs of firefighting; and the release of carbon (which possibly has an impact on climate change). It also includes the damage caused by the consequent smoke haze to health, tourism and production.



## Ghana's Forest Industry

Sir

The report by Dr Poore and Mr Thang on progress towards ITTO's Year 2000 Objective (TFU 10:2, pp 5–6) mentions Ghana as one country that has made significant advances in sustainable forest management. However, we believe that Ghana's forestry sector requires significant restructuring to fully capture the national benefits of the timber trade and to achieve sustainable forest management.

The sector currently contributes close to 6 per cent of the country's gross domestic product and 11 per cent of export earnings. But increasing demand for Ghanaian timber has led to dwindling stocks and quality within the Ghanaian tropical forest. Current rates of extraction are unsustainable in the short term.

The Ghanaian timber industry is generally under-capitalised, labour-intensive and equipped with obsolete processing equipment. Inefficiencies lead to resource wastage, both in the forest and at the mill.

Timber producers mostly employ off-shore agents to export their products, which tends to separate the producers from the end-users. Since the majority of the revenue from the forestry sector comes from exports, the nation is therefore at a disadvantage in realising the full potential of the industry.

Though the quality of Ghana's timber is acclaimed in the world market, the country is not known as a major supplier of processed

wood items. Overseas buyers have reservations about Ghana's ability to sustain the supply of high-quality products.

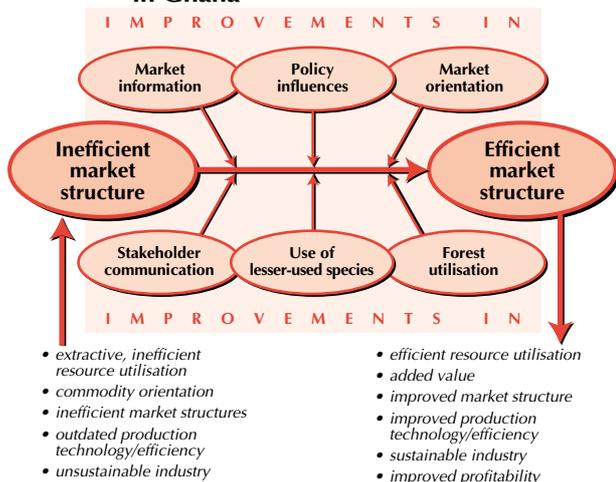
In recent years the government has taken many measures to address deforestation and illegal logging. These have included regulations to control illegal chainsaw operators and speculative felling for log exports, and a timber auction to clear the serious glut of stockpiled logs. A mobile forest protection action group has been established, log exports were temporarily suspended and felling controls have been announced for off-reserve harvesting.

In essence, the government has moved from a policy of granting generous harvesting concessions, to an interim policy of log export quotas, to an outright total ban of log exports. These policies have not reduced forest depletion, stimulated sustainable forest management or increased the production of value added wood products. The problem seems to be largely embedded in a lack of industry coordination, restricting opportunities to achieve an efficient sector in which each component operates in harmony with the others to ensure a sustainable industry.

The figure shows the elements that can contribute to the transition to a more efficient market structure in the forest industry in Ghana. We believe that this approach can be generalised to other sub-Saharan nations that face similar problems.

Achieving a sustainable industry requires an holistic approach of increased stakeholder communication, sustainable policy adoption,

**Figure 1: The required elements for a shift to an efficient, forest-based market structure in Ghana**



use of lesser-used species, improved production efficiency and increased market information for strategic marketing activities. The emphasis should be on efficiency in the market structure; the aim should be to develop an industry that adds value to existing resources through improved technology and methods of production, improved market structures and the efficient utilisation of the forest resource. This would improve profitability, create a skilled and dynamic workforce

and improve the prospects for sustainable forest management. This could convert a high volume, low value, extractive forest sector into a low volume, high value, sustainable one.

**Kofi Poku<sup>1</sup> and Richard Vlosky<sup>2</sup>**

<sup>1</sup>Graduate Research Assistant and  
<sup>2</sup>Associate Professor

Forest Products Marketing Program, Louisiana State University Agricultural Center, 227 Forestry, Wildlife, and Fisheries Building, Baton Rouge, LA 70803, USA

## ATO Seeks ITTO Assistance

The 19th Ordinary Ministerial Conference of the African Timber Organization (ATO) was held in Brazzaville, Congo, on 9–13 October 2000. Chaired by His Excellency Denis Sassou Nguesso, President of the Republic of Congo, the conference made a number of statements related to work in the forest sector.

For example, it supported a project to set up an African sub-regional school for training in reduced impact forestry techniques, as proposed originally by ITTO, and called on ITTO to support the initiative. The Conference also put in place a forest certification unit in charge of following up and evaluating the implementation of principles, criteria and indicators and the implementation of the Pan-African certification process. The conference called on the ATO to develop cooperation with the promoters of reliable systems of criteria and indicators and credible performance norms, including ITTO, CIFOR, the FAO and the Interafrican Forest Industries Association (IFIA). In other developments, the conference decided to revive the African Forest and Timber Week to demonstrate progress in the area of forest development. Cameroon will host the first such week in 2001.

The conference admitted the Republic of Togo as the 14th member of the ATO and approved the construction or acquisition of a building in Libreville, Gabon, to serve as the Organization's headquarters.

For more information contact: ATO, BP 1077, Libreville, Gabon; Fax 241-73 4030; Email oab-gabon@internetgabon.com; see also page 3 for a follow-up decision by the International Tropical Timber Council at its latest session.



## Useful sites on the internet

### Brazilian statistics

The Brazilian Silviculture Society (SBS) has a homepage in Portuguese showing timber production and trade statistics, as well as links with other relevant institutions. The Society also, incidentally, publishes a quarterly magazine, in hardcopy, containing articles of interest to Brazil's forest and environment sectors (contact Dr Nelson Barboza Leite at [sbs@sbs.org.br](mailto:sbs@sbs.org.br)).

[www.sbs.org.br](http://www.sbs.org.br)

### Rainforest satellite imagery

The Tropical Rain Forest Information Center is part of the US National Aeronautical & Space Administration's Federation of Earth Science Information Partners. It works with other institutions to provide enhanced datasets, information products and services for the earth sciences community and for schools, non-governmental organisations and the private sector. It claims to provide low-cost access to the largest archive of landsat data outside the federal (US) government, low cost access to synthetic aperture radar (SAR) data, derived products in digital formats which depict the spatial extent and rate of deforestation, and other products and services.

[www.bsrsi.msu.edu/trfic/](http://www.bsrsi.msu.edu/trfic/)

### ITTO on-line

ITTO's website contains many key ITTO documents, including the *TFU* in English, Spanish and French, ITTO's *Criteria and Indicators for Sustainable Management of Natural Tropical Forests*, the Organization's manual for the application of criteria and indicators, and news items on the recent work of the Organization.

[www.itto.or.jp](http://www.itto.or.jp)

### Bolivia Forestal

*Bolivia Forestal* is a free monthly electronic newsletter produced in Spanish by Cámara forestal de Bolivia (the Bolivian Forestry Council). Its purpose is to provide information about events relevant to Bolivia's private forest sector. For example, in the September edition it reports that a road blockade by rural people has forced the government to review its forestry

laws. According to the newsletter, the blockaders were demanding the return of 3.8 million hectares of forest land, 1.4 million hectares of which has been allocated to private concessions.

To subscribe, write to the editor at [foresbol@cotas.com.bo](mailto:foresbol@cotas.com.bo)

### Non-wood Digest

Another free email bulletin is NWFP-Digest-L, which is produced by FAO's Non-wood Forest Products program and sent to over 700 subscribers worldwide. To join the list, send an email to [mailserv@mailserv.fao.org](mailto:mailserv@mailserv.fao.org) with the message 'subscribe NWFP-Digest-L'.

### Peruvian Forestry

Tropical Forest S.R.L. is publishing a new, nicely-produced magazine called *Perú Forestal*. It aims to provide information to forest-related industries and government institutions on those sustainable development activities most likely to generate employment and wealth in the Amazon. It is published every two months in Spanish and costs US\$20 and US\$40 for Peru-based and international subscribers respectively.

For more information contact: Eduardo Rios C., Director, J.P. Vizcardo y Guzmán 572 Urb. Los Precursores, Surco, Lima 33, Peru; Tel/Fax 511-274 4358; Email [mrriost@terra.com.pe](mailto:mrriost@terra.com.pe)

### New Journal in Panama

The National Association for the Conservation of Nature (ANCON), a non-governmental organisation devoted to the protection of natural resources and biodiversity in Panama, has commenced a new journal, *Icaro*. This full-colour publication is named after both the youth of Greek legend (to symbolise eternal idealism) and a rare eagle that nests in Panama's Chagres National Park. *Icaro* replaces the organisation's previous flagship magazine, ANCON Magazine, and pays "more attention to human factors – ecotourism, outdoor sports and cultural forces that determine the relationship of mankind as a part of nature's complicated equations." Currently published in Spanish, an English-language edition is planned.

For more information contact: Ana Salceda, Editor, *Icaro*, Editora del Caribe, S.A., Ave Federico Boyd con c/ 50, Edificio UNIFOT, Ciudad de Panama, Panama; Tel/Fax 507-263 1239; Email [sauce@info.net](mailto:sauce@info.net)

### China Markets

The Chinese Tropical Forest Products Information Center has commenced publication of a new monthly bulletin in English, *China Forest Products Market Information*. The first issue, published in October, contained data on domestic timber prices and short articles on developments in the Chinese economy and its timber markets. Sponsored through an ITTO project, the bulletin can be subscribed to at no charge by writing to: Tropical Forest Products Information Center, Institute of Scientific and Technological Information, Chinese Academy of Forestry, Wan Shou Shan, Beijing 100091, China; Fax 86-10-6288 2317; Email [linfengming@isti.forestry.ac.cn](mailto:linfengming@isti.forestry.ac.cn)

### Tropical Forests On-line

The first edition of *Tropical forests on-line* was published in September. This email bulletin contains short summaries of all the major articles published in the *TFU*, which can then be accessed directly from the ITTO website. By subscribing, you will receive the latest writings on tropical forestry 2-3 weeks in advance of the hard copy (which you will continue to receive). Contact the editor at [tfu@itto.or.jp](mailto:tfu@itto.or.jp) to be placed on the mailing list.

### Critical Elements of Certification

The Australian Department of Agriculture, Fisheries and Forestry recently published a report exploring the key elements of initiatives directed at establishing comparability and equivalence amongst certification schemes. *Establishing comparability and equivalence amongst forest management certification schemes: critical elements for the assessment of schemes* was written by Peter Kanowski of the Australian National University and three others and published in September 2000.

It may be obtained from: Fisheries and Forestry Industries Division, Agriculture, Fisheries and Forestry – Australia, GPO Box 858, Canberra ACT 2601, Australia. It can also be downloaded from [www.affa.gov.au/affa/subject/publications.html](http://www.affa.gov.au/affa/subject/publications.html)

### Making Contact

I would like to make contact with professionals dedicated to the protection of forests from uncontrolled fire.

Rafael Zayas-Bazán, Havana, Cuba; Email [norka@unepnet.inf.cu](mailto:norka@unepnet.inf.cu)

# Course Calendar



## ◆ Project Planning Techniques

14–25 May 2001

Brighton, UK Cost: £2,500

This intensive course aims to develop practical development project planning skills and methods for achieving planned outcomes. It will allow participants to apply the techniques learned to actual situations in their own organisations through practical activities and a professional action plan to be implemented upon their return to their home bases.

Contact: IMA International, Robertson Rd, Brighton BN 15NL, UK; Tel 44-(0)1273-559 000; Fax 44-(0)1273-500 045; Email [training@ima.uk.com](mailto:training@ima.uk.com)

## ◆ Bachelor of Applied Science (Forestry)

The Southern Cross University, located in Lismore in northern New South Wales, Australia, offers a four-year, industry-accredited degree course in sub-tropical and tropical forestry, with particular emphasis on native forest management. The course aims to provide the necessary training for professional forest scientists and managers, but graduates are also equipped with skills to work in other areas of natural resource management.

For more information, contact: School of Resource Science & Management, Southern Cross University, PO Box 157, Lismore NSW 2480, Australia; Tel 61-2-6620 3650; Fax 61-2-6621 2669; Email [rsm@scu.edu.au](mailto:rsm@scu.edu.au); Web [www.scu.edu.au/schools/rsm](http://www.scu.edu.au/schools/rsm)

## ◆ Doctoral Studies Offered

CATIE offers PhD programs in tropical forest science and tropical agroforestry in collaboration with international universities. Students are expected to arrive at CATIE by the end of March in the year of commencement. After completion of the first term at CATIE, they are expected to go to a cooperating university for a minimum of eight months' coursework. Thereafter they will return to

CATIE to carry out their dissertation research. The program will usually be completed within three years.

For more information contact: Office of Graduate Studies, CATIE, Turrialba, Costa Rica; Tel 506-556 1016; Fax 506-556 0914; Email [posgrado@catie.ac.cr](mailto:posgrado@catie.ac.cr); Web [www.catie.catie.ac.cr](http://www.catie.catie.ac.cr)

## ◆ 2001 International Short Course in Forest Genetics & Tree Improvement

27 May–June 2001

Raleigh NC, USA Cost: US\$1,800

This course is designed for foresters, managers and administrators who want to enhance their skills in tree improvement or update their knowledge about tree improvement and silvicultural research in plantation forestry. Topics include: world forestry trends; *Eucalyptus/Gmelina/Acacia*; the genetic basis of tree improvement progeny testing; tropical hardwoods and multipurpose tree quantitative genetics; species: distribution and seed collection; breeding strategies; Mexican and Central American pines; propagation strategies; initiating tree improvement programs of indigenous and exotic species; biotechnology; and seed orchards.

Contact: Forestry Educational Outreach Program, NC State University, Campus Box 8003, Raleigh, NC, 27695-8003, USA; Tel 1-919-515 3184; Fax 1-919-515 6883; Email [susan\\_moore@ncsu.edu](mailto:susan_moore@ncsu.edu)

## ◆ Managing People, Managing Change

Chatham, United Kingdom

Cost: unspecified

This three-week course, to be held in the period June–August 2001, has been designed for those involved in managing tree and forest resources in both government and non-government agencies – forest officers and managers, project leaders, conservationists, administrators and advisers. The course draws together many new techniques and developments available to the forest manager, and

can be adapted to meet a range of needs. It can be longer or shorter, and it can be run at NRI in the United Kingdom or in-country overseas. The module topics are delivered by a variety of participatory training methods, including case studies, participants' experiences, working groups, discussions, tutorials and talks. Hands-on experience is available for computer-related inputs. Participants will become more effective in their work by: updating their managerial and administrative skills; learning of the latest professional developments; knowing how to network and source information; actively managing change.

Contact: Training Officer, Natural Resources Institute, University of Greenwich, Central Avenue, Chatham Maritime, Kent ME4 4TB, United Kingdom; Tel 44-1634-883448/883095; Fax 44-1634-880066/3386; Email [training@nri.org](mailto:training@nri.org); [www.nri.org](http://www.nri.org)

## ITTO Tropical Forest Update

Editor: Alastair Sarre

Layout: Justine Underwood

Publishing, printing and distribution coordinated by Anutech Pty Ltd, Canberra, Australia.

The *Tropical Forest Update* is published quarterly in three languages (English, French and Spanish) by the International Tropical Timber Organization. It is intended as a forum for information exchange on aspects of sustainable forestry.

The contents of this newsletter do not necessarily reflect the views or policies of ITTO. The non-copyrighted contents may be reprinted without charge provided that the *TFU* and the author or photographer concerned are credited as the source. The editor should be sent a copy of the publication.

The *TFU* is distributed **free of charge** to over 7770 individuals and organisations in 125 countries. To receive it, please send your full address to the editor. Please notify us if you change address.

Please send **all correspondence regarding the *TFU*** to: The Editor, *Tropical Forest Update*, International Tropical Timber Organization, International Organizations Center – 5th Floor, Pacifico-Yokohama, 1-1-1 Minato Mirai, Nishi-ku, Yokohama 220-0012, Japan; Tel 81-45-223 1110; Fax 81-45-223 1111; Email [tfu@itto.or.jp](mailto:tfu@itto.or.jp)

**Other enquiries to ITTO** should be sent to the same postal address above or to the general ITTO email address: [itto@itto.or.jp](mailto:itto@itto.or.jp)

The **ITTO homepage** can be found at [www.itto.or.jp](http://www.itto.or.jp)

## Bamboo Workshops

The International Network for Bamboo and Rattan (INBAR) is hosting several workshops in 2001:

◆ **March 2001. Using Bamboo and Rattan to Reduce Poverty and Secure Livelihood. Tanzania.** Contact: Dr. I. V. Ramanuja Rao; Email [rrao@inbar.org.cn](mailto:rrao@inbar.org.cn) (full address below)

◆ **May 2001. Bamboo Housing Training Workshop.** Mumbai, India. Contact: Dr. I. V. Ramanuja Rao; Email [rrao@inbar.org.cn](mailto:rrao@inbar.org.cn) (full address below)

◆ **July 2001. The Role of Bamboo in Disaster Avoidance.** Ecuador. Contact: Mr Lou Yiping; Email [yplou@inbar.org.cn](mailto:yplou@inbar.org.cn) (full address below)

◆ **November 2001. Resources, Trade and Market Structure for Bamboo and Rattan.** Delhi, India. Contact: Dr Maxim Lobovikov; Email [mlobovikov@inbar.org.cn](mailto:mlobovikov@inbar.org.cn) (full address below)

◆ **November 2001. VII International Bamboo Workshop and Congress.** India. Contact: Dr. I. V. Ramanuja Rao; Email [rrao@inbar.org.cn](mailto:rrao@inbar.org.cn) (full address below)

INBAR's full address: Branch Box 155, PO Box 9799, Beijing 100101, P. R. China; Tel 86-10-6495 6964/ 82; Fax 86-10-6495 6962/83; Email [info@inbar.org.cn](mailto:info@inbar.org.cn); Web [www.inbar.org.sg](http://www.inbar.org.sg)

## Disclaimer

By featuring these courses, ITTO does not necessarily endorse them. Potential applicants are advised to obtain as much information as possible about the course of interest and about the institution offering it.



- ◆ 29–31 January 2001. **1st Regional Meeting of Forestry Associations and Councils for the Sustainable Management of Tropical Forests.** Quito, Ecuador. Contact: AIMA/Asociación Ecuatoriana de Industriales de la Madera, Avs Amazonas y República, Edif. Las Cámaras piso 7, Quito, Ecuador; Tel 593–2–439 559; Fax 593–2–439 560; Email [aima@andinanet.net](mailto:aima@andinanet.net); Web [www.ecuadorforestal.com](http://www.ecuadorforestal.com)
- ◆ 18–21 February 2001. **International Workshop on Seabuckthorn.** New Delhi, India. Contact: Dr Vivendra Singh, Organizing Secretary, Secretariat of IWS 2001, Directorate of Research, HP Agricultural University, Palampur 176062 HP, India; Tel 91–1894–30406; Fax 91–1894–30511; Email [iws2001@hpkv.hp.nic.in](mailto:iws2001@hpkv.hp.nic.in)
- ◆ 26 February–1 March 2001. **Kuching, Malaysia. International Conference on the Application of Reduced Impact Logging to Advance Sustainable Forest Management: Constraints, Challenges and Opportunities.** Co-sponsored by ITTO. Contact: Thomas Enters or Patrick Durst, FAO Regional Office for Asia and the Pacific, Phra Atit Road, Bangkok 10200, Thailand; Tel 66–2–281 7844; Fax 66–2–280 0445; Email [thomas.enters@fao.org](mailto:thomas.enters@fao.org) or [patrick.durst@fao.org](mailto:patrick.durst@fao.org)
- ◆ 14–16 March 2001. **International Wood Products Association Annual Convention and International Forest Products Exhibition.** Contact: Wendy Baer, IWPA, 4214 King St West, Alexandria, Virginia 22302, USA; Tel 1–703–820 6696; Fax 1–703–820 8550; Email [info@iwpawood.org](mailto:info@iwpawood.org); Web [www.iwpawood.org/convention/html](http://www.iwpawood.org/convention/html)
- ◆ 25–26 March 2001. **Nepal Community Based NTFP Management: 3rd South & East Asian Countries Workshop.** Kathmandu or Pokhara, Nepal. IUFRO 5.11. Contact: Biswanath Regmi, Director, Nepal Agroforestry Foundation, GPO Box 9594, Kathmandu, Nepal; Fax: 977–1–222026; E-mail [naf@vishnu.ccsil.com.np](mailto:naf@vishnu.ccsil.com.np); Web [www.angelfire.com/ma/MinorForestProducts](http://www.angelfire.com/ma/MinorForestProducts)
- ◆ 25–27 March 2001. **Global Initiatives and Public Policies: First International Conference on Private Forestry in the 21st Century.** Atlanta, Georgia, USA. IUFRO 6.00.00. Contact: Larry Teeter, Forest Policy Center, Director, 108 M. White Smith Hall, Auburn, Alabama 36849-5418, USA; Tel 1–334–844 1045; Fax 1–334–844 1084; Email [fpolicy@auburn.edu](mailto:fpolicy@auburn.edu); Web [www.forestry.auburn.edu/forestpolicycenter](http://www.forestry.auburn.edu/forestpolicycenter)
- ◆ 28–30 March 2001. **Latin American Symposium on Forest Insects.** Ribeirã Preto, Brazil. Contact: Prof. José Cola Zanuncio; Tel 55–21–31–3891 2476; Fax 55–21–31–3891 2166; Email [lcouto@mail.ufv.br](mailto:lcouto@mail.ufv.br)
- ◆ 3–7 April 2001. **International Symposium on Silvopastoral Systems and 2nd Congress on Agroforestry and Livestock Production in Latin America.** San José, Costa Rica. IUFRO 1.15.02 & 1.15.05. Contact: Agroforestry Symposium Secretariat, Attention: Ariadne Jiménez, Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Apdo. 44, 7170 Turrialba, Costa Rica; Tel 506–556 1789; Fax 506–556 1576; Email [ajimenez@catie.ac.cr](mailto:ajimenez@catie.ac.cr); [www.catie.ac.cr/events/eventos.htm](http://www.catie.ac.cr/events/eventos.htm)
- ◆ 4 April 2001. **Workshop on the Impacts of Logging on Mahogany in Brazil.** Oxford, UK. Contact: Nick Brown at [nick.brown@plants.ox.ac.uk](mailto:nick.brown@plants.ox.ac.uk)
- ◆ 13–20 April 2001. **9th Australasian Conference on Tree and Nut.** Perth, Australia. Contact: David Noel, Tree Crops Centre, Subiaco, WA, Australia; Tel 61–8–9388 1965; Fax 61–8–9388 1852; Email [davidn@aoi.com.au](mailto:davidn@aoi.com.au); [www.aoi.com.au/acotanc](http://www.aoi.com.au/acotanc)
- ◆ 18–25 April 2001. **16th Commonwealth Forestry Conference.** Fremantle, Australia. Contact: Libby Jones, UK Forestry Commission, 231 Corstorphine Road, Edinburgh EH 12 7AT, UK; Tel 44–(0)–131–314 6137; Fax 44–(0)–131–334 0442; Email [libby.jones@forestry.gov.uk](mailto:libby.jones@forestry.gov.uk)
- ◆ 27 April–6 May 2001. **Madexpo Internacional 2001.** Quito, Ecuador. Contact: AIMA/Asociación Ecuatoriana de Industriales de la Madera, Avs Amazonas y República, Edif. Las Cámaras piso 7, Quito, Ecuador; Tel 593–2–439 559; Fax 593–2–439 560; Email [aima@andinanet.net](mailto:aima@andinanet.net); Web [www.ecuadorforestal.com](http://www.ecuadorforestal.com)
- ◆ 30 April–3 May 2001. **Joint Symposium for Tropical Silviculture and Tree Seed Technology.** Los Baños, Philippines. IUFRO 1.07.00 and 2.09.00. Contact: Ike Tolentino, Institute of Renewable Natural Resources, University of the Philippines Los Baños, College, Laguna 4031, Philippines; Tel 63–49–536 2599; 63–49–536 3206; Email [eltj@mudspring.uplb.edu.ph](mailto:eltj@mudspring.uplb.edu.ph)
- ◆ Apr/May 2001. **Master Planning in Torrent Watersheds on the Basis of Hazard Mapping.** Vargas, Venezuela. IUFRO 8.04.01. Contact: Gernot Fiebiger or Erich Scheuringer, Forest Technical Service in Torrent and Avalanche Control, Paracelsusstr. 4, A-5027 Salzburg, Austria; Fax: 43–662–870215; Email [fiebiger@eunet.at](mailto:fiebiger@eunet.at) or [scheuringer-bruni-erich@aon.at](mailto:scheuringer-bruni-erich@aon.at)
- ◆ 28 May–2 June 2001. **30th Session of the International Tropical Timber Council and Associated Sessions of the Committees.** Yaounde, Cameroon.
- ◆ 28 May–3 June 2001. **Building Bridges with Traditional Knowledge II.** Honolulu, USA. Contact: University of Hawaii at Manoa, Dept of Botany, 3190 Maile Way, Room 101, HI 96822-2279, Honolulu, Hawaii, USA; Tel 1–808–356 7203; Fax 1–808–956 3923; Email [bbt2@hawaii.edu](mailto:bbt2@hawaii.edu); [www.traditionalknowledge.com](http://www.traditionalknowledge.com)
- ◆ June 2001. **FAO/ECE/ILO Workshop on New Developments of Wood Harvesting with Cable Systems.** Austria. Contact: R. Heinrich, Forest Harvesting, Trade and Marketing Branch, Forest Products Division, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy; Fax 39–06–5705 5137; Email [Forest-Harvesting@FAO.org](mailto:Forest-Harvesting@FAO.org)
- ◆ 6–9 June 2001. **Public & Private Sector Partnerships: the Enterprise Governance.** University of the Twente, The Netherlands. Contact: Mrs Monica Moseley, Administrator, Sheffield Hallam University Press, Learning Centre, Adsetts Centre, City Campus, Sheffield S1 1WB, UK; Fax 44–114–225 4478; Email [m.moseley@shu.ac.uk](mailto:m.moseley@shu.ac.uk)
- ◆ 11–13 June 2001. **International Conference on Ex Situ and In Situ Conservation of Commercial Tropical Trees.** Yogyakarta, Indonesia. Sponsored by ITTO. Contact: Ms Soetitah S. Soedjo, ITTO Project PD 16/ 96 Rev.4 (F), Faculty of Forestry, Gadjah Mada University, Bulaksumur, Yogyakarta 55281, Indonesia; Fax 62–274–902 220; Email [itto-gmu@yogya.wasantara.net.id](mailto:itto-gmu@yogya.wasantara.net.id)
- ◆ 12–15 August 2001. **Supply Chain Management for Paper and Timber: 2nd World Symposium for Logistics in the Forest Sector.** Växjö, Sweden. Contact: Kim Sjöström, Chief Technologist, Anjas 3 A 33, 02230 Espoo, Finland; Tel 358–405–500 780; Email [sjostrom@technologist.com](mailto:sjostrom@technologist.com); Web <http://honeybee.helsinki.fi/logistics/main.htm>
- ◆ 12–16 June 2001. **Managing the Second Cycle of Tropical Forests.** Balikpapan, Indonesia. Contact: Berau Forest Management Project, Gedung Mnaggala Wanabakti, Block IV, 7th Floor, Jln. Jend. Gatot Subroto, 10270 Jakarta, Indonesia; Tel/fax 6221–572 0204/5; Email [bfmpconf@cbn.net.id](mailto:bfmpconf@cbn.net.id); [www.bfmp.or.id](http://www.bfmp.or.id)
- ◆ 11–19 July 2001. **Travelling Workshop on Linking the Complexity of Forest Canopies to Ecosystems and Landscape Function.** Portland and Corvallis, USA. IUFRO 2.01.12. Contact: Michael G. Ryan, USDA/FS Rocky Mountain Research Station, 240 West Prospect RD, Fort Collins, CO 80526-2098, USA; Tel 1–970–498 1012; Fax 1–970–498 1027; Email [mryan@lamar.colostate.edu](mailto:mryan@lamar.colostate.edu)
- ◆ 22–27 July 2001. **Tree Biotechnology: the Next Millennium.** Skamania Lodge, Stevenson, Washington, USA. Contact: Contact: Dr Steven Strauss, Forestry Sciences Lab 020, Department of Forest Science; Oregon State University; Corvallis Oregon 97331-7501; USA; Tel 1–541–737 6558; Fax 1–541–737 1393; Email [strauss@fsl.orst.edu](mailto:strauss@fsl.orst.edu); Web [www.cof.orst.edu/cof/extended/conferen/treebio/](http://www.cof.orst.edu/cof/extended/conferen/treebio/)
- ◆ 12–18 August 2001. **Forest Modelling for Ecosystem Management, Forest Certification and Sustainable Management.** Vancouver, Canada. Contact: Dr. Valerie LeMay, Dept of Forest Resources Management, 2045–2424 Main Mall, University of British Columbia, Vancouver BC V6T 1Z4 Canada; Tel 1–604–822 4770; Fax 1–604–822 9106; Email [forestmd@interchange.ubc.ca](mailto:forestmd@interchange.ubc.ca); Web [www.forestry.ubc.ca/forestmodel](http://www.forestry.ubc.ca/forestmodel)
- ◆ 12–14 September 2001. **Dynamics of Forest Insect Populations.** Aberdeen, Scotland. IUFRO 7.03.07. Contact: Dr Andrew Liebhold, USDA Forest Service, Northeastern Forest Experiment Station, Forestry Sciences Laboratory, 180 Canfield St, Morgantown, West Virginia 26505, USA; Tel 1–304–285 1609; Fax 1–304–285 1505; Email [sandy@gypsy.fsl.wvnet.edu](mailto:sandy@gypsy.fsl.wvnet.edu); Web [iufro.boku.ac.at/iufro/iufro.net/d7/wu70307/aberdeen\\_firstannounce.htm](http://iufro.boku.ac.at/iufro/iufro.net/d7/wu70307/aberdeen_firstannounce.htm)
- ◆ 3–14 September 2001. **Developing the Eucalyptus of the Future.** Valdivia, Chile. IUFRO Contact: Dr Roberto Ipinza, Universidad Austral de Chile, PO Box 1241, Valdivia, Chile; Tel 56–63–216 186; Fax 56–63–224 677; Email [ripinza@valdivia.uca.uach.cl](mailto:ripinza@valdivia.uca.uach.cl); Web [www.infor.cl/iufro2001](http://www.infor.cl/iufro2001)
- ◆ 9–14 September 2001. **5th International Flora Malesiana Symposium.** Sydney, Australia. Contact: Dr Barry Conn, Royal Botanic Gardens Sydney, Mrs Macquaries Road, Sydney NSW 2000, Australia; [fmv@rbgsyd.gov.au](mailto:fmv@rbgsyd.gov.au); Web [plantnet.rbgsyd.gov.au/fm/fm.html](http://plantnet.rbgsyd.gov.au/fm/fm.html)
- ◆ October 2001. **The Future of Perennial Crops: Investment & Sustainability in the Humid Tropics.** Côte d'Ivoire. Contact: Dominique Nicolas, CIRAD, Boulevard de la Lironde, 34398 Montpellier Cedex 5, France; Tel 33–4–6761 6569; Fax 33–4–67 56 59; Email [nathalie.mercier@cirad.fr](mailto:nathalie.mercier@cirad.fr)
- ◆ 8–11 October 2001. **Forestry Meets the Public: an International Seminar.** Rütthubelbad, Switzerland. Contact: Martin Büchel, Chief, Bases and Training, Swiss Forest Agency, Ch-3003 Berne, Switzerland; Tel 41–31–324 7783; Fax 41–31–324 7866; Email [martin.buechel@buwal.admin.ch](mailto:martin.buechel@buwal.admin.ch)
- ◆ 29 October–3 November 2001. **31st Session of the International Tropical Timber Council.** Yokohama, Japan.
- ◆ 11–16 November 2001. **XV Latin American Congress of Soil Science.** Cuba. Contact: Dr R. Villegas Delgado, Ave Van Troi No. 17203, Boyeros, Havana CP 19210, Cuba; Tel 53–7–579076; Fax 53–7–666036; Email [XV@inica.edu.cu](mailto:XV@inica.edu.cu)
- ◆ 21–28 September 2003. **XII World Forestry Congress.** Quebec City, Canada. Contact: XII World Forestry Congress, PO Box 7275, Charlesbourg, Quebec G1G 5E5, Canada; [www.wfc2003.org](http://www.wfc2003.org)