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New colonial masters: Malaysian loggers in South America

How under-valuation of forest resources exposes Guyana to unscrupulous exploitation

Is Guyana getting a fair price for these logs?

We are familiar from history books with stories of the European powers taking over the natural resources of tropical countries and paying in beads, mirrors and red cloth. For over fifteen years Malaysian and later Chinese loggers have taken over prime natural tropical moist forest in Guyana and Suriname (Colchester 1994, 1997; Sizer 1995, 1996). These new colonialists promise to install modern industries, to enhance the skills of local people and to increase employment. This article is an account of how government negligence (or worse) and a weak and inattentive civil society has allowed the Asian loggers to run down the mills and to shift decisively into log exports for major markets in Indian and China, while paying derisory sums in forest fees and evading the taxes which local enterprises have to pay.

This article complements a longer paper[1] which has been posted on the "illegal logging" website of the Royal Institute for International Affairs (RIIA - Chatham House, London; Energy, Environment and Sustainable Development Programme). The longer paper dealt mainly with lessons from apparently careless performance in due diligence procedures by two international banks, Zürich-based Credit Suisse and London-based HSBC. These banks, together with Macquarie Bank in Australia, underwrote the IPO (initial public offering; a financial exercise to raise share capital or equity for commercial

[1] "Lazy days at international banks: how Credit Suisse and HSBC support illegal logging and unsustainable timber harvesting by Samling/Barama in Guyana, and possible reforms", 08 June 2007, URL = http://www.illegal-logging.info/item_single.php?item=document&item_id=484&approach

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operations and debt management) of a Malaysian transnational logger and forest products company in March 2007. Our RIIA paper showed how Credit Suisse, HSBC, Samling Global Limited and its subsidiary Barama Company Limited in Guyana could all improve their ethical performance with respect to environmental and social factors. This improvement could be achieved even without a parallel reform of the incompetent or inefficient (or worse) government agencies in Guyana.

Government limitations in Guyana

Barama holds legally a concession covering 26 per cent of the State Production Forest and illegally more than an additional 7 per cent. Barama discovered some years ago that it could operate as an enclave economy in Guyana, extracting logs from its own and from illegally-rented forest harvesting concessions and exporting the raw logs to the booming markets in China and India. For a variety of reasons, government agencies in Guyana, which should have been supervising the implementation by Barama of the foreign direct investment (FDI) arrangements and the observance of forest laws and regulations, have largely failed to do so. Publicly stated Ministerial willingness to take action has been undermined or delayed by the inaction of executive government agencies; see the RIIA paper for extensive references.

Guyanese logs awaiting export to Asia

It is very easy to criticise government agencies which are unwilling or unable to respond to comment and question in an independent Press, and in this regard it is only fair to acknowledge that many developing countries suffer a continual or intermittent haemorrhage of trained staff to developed countries. This flight of human capital is not solely in response to perceptions of higher salaries. Indeed, after taking account of relative costs of living, the immigrant may be worse off financially in the developed country than while staying at home. However, the freedom from an oppressive and unresponsive political regime, the freedom to express opinions and to have those opinions treated as a worthy contribution to national development, and the freedom to live under a rule of equitably-applied law, may more than compensate for the drop in status and income.

Guyana and Suriname may be so characterised. There is easy access to jobs in North America for Guyanese, and in the Netherlands for Surinamese. Both Guyana and Suriname have low scores for quality of governance (Colchester 1995; DaCosta 2007) and both governments have traditionally been more tolerant of the emigration of skilled but argumentative staff than keen on retaining their skills (Daljeet 2007). Few of the senior staff who were in post at the Guyana Forestry Commission (GFC) during the DFID-supported institutional reform project 1995-2002 are still in post; most have emigrated or moved to other employment. The remaining human capacity often displays a beleaguered public face. Access to documentation is highly restricted, and official responses to Press comments and queries are few, inaccurate and obstructive. Even unofficial responses, relayed through third parties and under pseudonyms, are weak and poorly argued. It is unclear if this is a reflection of the internal attitude of the GFC or a result of political direction against which the GFC feels powerless.

Under-valuation of national forest resources in Guyana

It is not surprising that the field performance of Barama is thus different in weakly administered Guyana compared with that of its parent company's logging concession in the more strongly administered Sarawak. One illustration is the difference in forest resource access taxes paid in the two countries (data are taken from Samling's IPO). In the 56,000 ha logging concession at Sela'an-Linau (T/0412) in Sarawak, which was certified to the standard of the Malaysian Timber Certification Council, in financial year (FY) 2005-6 Samling paid volume-weighted royalties plus premia of US$ 25.4 per m^3 (log volume) for meranti timbers (*Shorea* species of dipterocarps) which comprise one quarter of the commercial standing stock. At the other end of the value scale, mixed light hardwoods (MLH, mostly non-dipterocarps adequate for concrete formwood and utility purposes) attracted royalty and premia of US$ 8.5 per m^3 log volume. MLH comprised 55 per cent of the commercial growing stock. On average, Samling paid US$ 13.6 per m^3 in royalty plus premia.

In contrast, for the previously partly-FSC-certified (now suspended) logging concession of Barama in Guyana (TSA 04/1991), the secret foreign direct investment agreement (FDI negotiated in 1991 and renewed in 2001 and 2004) with the Government of Guyana provides a special regime of royalties and exemption from all but two other forest taxes. These taxes contained provision for small increases every four years but are denominated in local currency and not subject to adjustment for inflation or currency movements. For the very best Guyanese timbers (the royalty Special Class for marine construction and flooring timbers), Barama should now pay US$ 2.34 per m^3 (log volume; G$ 16.88 per hoppus cubic foot). For Guyana royalty Class I timbers, more comparable with Malaysian medium-density merantis and including the furniture wood *Hymenaea courbaril*, Barama should pay US$ 1.64 per m^3.

Samling's logging costs are very similar: US$ 78 per m^3 in Sarawak, US$ 80 per m^3 for export logs in Guyana. Yet Samling pays fifteen times more royalty per m^3 in Sarawak than in Guyana. In total in FY 2005-6, Samling paid US$ 23.7 million in forest taxes, excluding log administration costs.

In Guyana, Samling's subsidiary Barama holds legally the concession of 1.61 million ha and controls illegally a further 0.39 million ha plus an unknown area of Amerindian titled Village Lands. Barama paid in the same FY 2005-6 a mere US$ 961,000 to both government and the illegally sub-letting concession holders. Let us see how this sum may be disaggregated:

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Association News

2010 Commonwealth Forestry Conference to be held in Scotland

The 18th Commonwealth Forestry Conference will be held in Edinburgh, Scotland, in 2010.

The conference will take place from the 28th of June to the 2nd of July 2010, and will be hosted by the British Forestry Commission on behalf of the United Kingdom. The event was last hosted in the UK in 1974.

Preparations are under way to agree a theme, develop a website and appoint an organising committee.

Welcoming the announcement, Tim Rollinson, the Forestry Commission's Director-General, said,

- "I'm particularly pleased that the 2010 Commonwealth Forestry Conference is coming to the UK, because these are important and exciting times for forestry right across the world.
- "The importance of the environment and the need for sustainable development are increasingly being positioned at the heart of government agendas and international processes across the world, and the crossover between forestry and other international policies is becoming closer.
- "Sustainable forest management can deliver many social, economic and environmental benefits on the ground, making a clear and positive difference to people's lives, and it's vital that we continue to get this message out and help nations and organisations to put it into practice.
- "The Commonwealth Forestry Conferences are a significant force for developing and promoting sustainable forest management across the world to maximise the potential benefits from forests of all kinds.
- "I therefore believe this conference will be a wonderful opportunity to help make a difference globally, and I strongly commend it to foresters, policymakers, scientists, academics, economists, NGOs and others with an interest and role in forestry."

Further information is available from the Secretariat of the Standing Committee on Commonwealth Forestry by emailing commonwealth.standing-committee@forestry.gsi.gov.uk.

Coconuts, mangroves and bumpy roads

The CFA's Young Forester Award winner reports from Sri Lanka

In July one of CFA's Young Forester Award winners, Irfan Ullah from Pakistan, began his work placement with Rainforest Rescue International on a range of projects including analogue forestry, mangrove conservation and nursery management. Visit the CFA website at www.cfa-international.org to read his report and see some photographs of his visit.

Carbon offsetting and forestry

New book by CFA member highlights methods of measuring carbon balances

The need for measurement

Opportunities for forestry to undertake carbon offsetting activities have attracted attention and are being promoted as a means of reducing the impact of global warming caused by the use of fossil fuels. However, doubts are being expressed about its effectiveness and dependability in practice. A recent article by Fred Pearce, published in the New Scientist (10th. March, 2007), is an example which raises a number of pertinent questions.

Aside from the general issue of morality, raised by the assertion that wealthier people and societies should not be able to buy their way out of responsibility for adding to global warming, there are particular concerns of a more practical nature about tree planting and afforestation projects as a means of absorbing 'greenhouse gases' from the atmosphere. If money is handed over to companies or other agencies in return for promises to 'offset' carbon emissions resulting from air travel or vehicles or other industrial processes such as power generation, how can those who pay be sure that the amount of carbon sequestered from the atmosphere is adequate for the purpose or that it will occur within a reasonable period of time? There is also a question of 'additionality', i.e. whether the offsetting being offered would occur anyway as the result of international agreements or local action to promote afforestation for reasons which may have nothing to do with global warming. These questions can only be answered satisfactorily if it is possible to measure the amount of carbon captured and released by woody vegetation in a reliable way. A means of assessing the impact of forestry activities on carbon sequestration has been lacking up to now. A practical method,

capable of being applied to forests at both local and national level, which people can understand and trust, is necessary. Such a method has now been developed and the purpose of this note is to briefly describe it.

Sequestration in practice

Carbon sequestration is dependent on the capture of atmospheric carbon and its storage in the biomass of woody vegetation. Carbon is accumulated by tree growth and subsequently released when trees die and decompose or are felled and removed. Some of the stored carbon may continue to be locked into those parts of the biomass which are converted into forest products such as timber. Thus construction timber, typically, has a life of about 20 to 30 years and some antique furniture is still in use after 2 or 3 centuries.

Therefore it is necessary to measure both the amount of carbon captured (in metric tonnes), year by year, as trees crops grow and its subsequent release, year by year, as the trees are felled and removed, either as thinnings or mature timber. An appropriate adjustment to the amount released is also required to allow for the longevity of the use to which the processed wood is put. Different species and alternative methods of forest management affect both capture and release.

When the tree crops are young, growth (increment) exceeds the amount removed (as thinnings) and the growing stock builds up; in later years felling and removal reduce the quantity of growing stock. At the level of a plantation scheme or whole forest the balance between growth and removals over time indicates whether the forest is being managed sustainably. Similarly, the relationship between the amount of carbon captured and released annually, i.e. the *carbon balance* is a measure of the tonnes of carbon sequestered from the atmosphere. For offsetting purposes, year by year estimates of the carbon balance are necessary to judge the effectiveness of afforestation programmes and the propriety of the claims being made.

Simulation modelling

A method for measuring carbon balances has been devised and is now available for use. It is based on the systems of simulation modelling with a computer developed by the author and applied for forestry planning purposes in various countries over the last 25 years. Known as TIMPLAN, VOLPLAN and GROPLAN, these systems enable models of forest-based activities to be set up quickly and easily to represent the situation at local, district or national level in any country. Using the 'Systems Dynamics' modelling technique, first devised by J.W. Forester, they allow the behaviour of the forest sector to be studied by simulating the effects of changes in forest management, logging and processing. The consequences over time of plantation projects or any other interventions designed to influence the carbon balance can be shown. Practical experience with the systems worldwide has demonstrated their usefulness under a wide range of conditions and accounts of them have been published from time to time; the most recent description is included in a book on *Forest Strategy* **newly published by Springer (ISBN 978-1-4020-5964-3).**

These modelling systems have now been modified deliberately to measure carbon capture and release. Extra equations in the computer programs enable the annual additions to the volume of the growing stock and the quantity removed to be converted to their carbon equivalents. New items in the data files, which control model operation, provide the conversion factors and expected life of the product; users supply this data which is specific to the species being grown and the nature of the product. Tables showing the carbon balance as well as the timber balance are included in the output generated when models are run.

These systems offer a powerful and practical solution to the measurement difficulties posed by carbon offsetting. Models are easily assembled and operated on a personal computer, using the special software provided. Data files are set up by users to suit their particular conditions and requirements. The systems can deal with both even-aged crops and natural forest, and take account of the different uses to which forest products may be put. They now provide projections of carbon capture and release, year by year, for as many years ahead as may be required. Any number of crops and products can be included, so that the carbon uptake can be assessed of either a particular project, or the forests of a district or region or for the entire forest resources of a country. Management options of any sort which may affect the carbon balance can be tested to discover their likely effects and analysis of their costs and benefits carried out. Alternative scenarios can be set up to investigate their consequences and facilitate decision-making. In particular, the systems can be used to measure the additional carbon captured each year as the result of forestry activities financed by offset payments.

Further information about the systems can be obtained from the undersigned.

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AGROFORESTRY IN INDIA - POTENTIAL AND CONSTRAINTS

'Summary of lecture delivered by Mr Piarelal to the CFA India Chapter and an invited audience at the Forest Research Institute, Dehra Dun on April 26, 2007'

The objective of National Forest Policy of having one-third of the country's area under forest/tree cover cannot be achieved unless agroforestry is promoted on a massive scale based on economically attractive and environmentally sound models. Out of the domestic demand of about 82 million m^3 of timber, only a small fraction is met from government-owned forests and the remainder is met from trees outside forests and through imports. Agroforestry meets most of the requirement of wood-based industries like pulp and paper and plywood. Agroforestry has a great potential in meeting national demands of timber and fuelwood because of very high productivity of agroforestry systems as compared to natural forests. The timber yield from Eucalyptus plantations raised under agroforestry using improved clonal planting stock

is about 20-25 m^3/ha/year which is about 10 times that obtained in plantations of Eucalyptus raised in forest areas. Agroforestry plantations of poplar in north-west India are giving even higher yield as compared to Eucalyptus. Some progressive farmers have achieved timber yield of even 40-50 m^3/ha/year from their agroforestry plantations. Such high yields under agroforestry have been possible only with the use of high quality clonal planting stock and the farmers not having access to such planting stock have to be content with very low yields. Availability of high quality planting stock is presently very much limited and meets only a fraction of the total demand. Besides the advantage of high yield, agroforestry results in optimisation of productivity of agricultural land, diversification of agriculture, generation of gainful employment at door steps for the rural poor contributing towards their poverty alleviation and carbon sequestration.

There are a number of constraints in realising the potential agroforestry in India such as, i) restrictions on harvesting of trees and transport of timber, ii) absence of regulated markets for timber grown under agroforestry, iii) non-availability of high quality planting stock, iv) difficulties in getting long term bank loans, v) unrestricted import of timber and ban on export of timber, vi) absence of certification of seed or of planting stock, and vii) absence of price support by government for timber grown under agroforestry as is available in the case of agricultural crops.

The strategy for development of agroforestry in the country should include: i) necessary policy support to encourage agroforestry; ii) research support to develop suitable agroforestry models for different agro-climatic conditions; iii) establishment of regulated market mechanism for timber harvested from agroforestry plantations as is available in the case of agricultural commodities; iv) involvement of private sector to produce high quality planting stock; v) discontinuation of subsidy on supply of planting material by forest departments; vi) provision of an efficient extension service for agroforestry; vii) provision of certification of forest nurseries to ensure quality of planting stock; viii) arrangement for soft loans and insurance cover for agroforestry.

Letter

Comment on the Stern Review of Global Warming

Dear Editor,

Thank you for the interesting, useful and topical summary by Alec Dauncey (March 2007) of the Stern Review of global warming. If Stern says that global warming can "be arrested for a cost to global GDP of 1% if strong, well designed action is taken promptly", I beg to disagree with him. The world has been getting steadily warmer for at least 11,000 years, and the sea level has been correspondingly rising. For most of the earth's geological history the poles were ice-free, so the fact that they aren't so today indicates that we still live in the tail-end of the last ice age. Of course the world is getting warmer and of course the sea level is rising; we humans can perhaps slow down this inexorable process a little, but we certainly cannot *arrest* it.

The sea level has risen enormously since the days when the Channel was dry land; how can we stop that? We must *adapt*, like our ancestors did. Today there is hysteria about CO_2 emissions, and yet we continue building in flood plains (e.g. the Thames Gateway Project, and perhaps also the Olympic Village). We must stop that, and we must increase the dimensions of our storm drains because the melting of the ice has always in the past been accompanied by increased rainfall. During each inter-glacial period the tropical rainforests expanded, and during the ice ages they shrank, because of the waxing and the waning of the rainfall. Sooner or later, whatever we do, global warming will reach the level of earlier inter-glacial periods, when tropical animals roamed where London is today.

The Stern Review also talks about the desirability of reducing deforestation. Yes, but I wonder if that will be possible in the developing countries, which is where deforestation is taking place. We can pay the "compensation proposed by various rainforest countries", but how can they stop the millions of poor landless would-be farmers in their countries from invading the forests to do the slash-and-burn that they have been doing since time immemorial, and which we used to do too. If the forest is a carbon bank to us, it is a land bank to the Third World farmers. Only one thing can stop slash-and-burn: job generation. Any real job is preferable to the dirty and back-breaking work of slash-and-burn.

Mikael Grut
London, England

Forest Scenes

A new forest policy for the Maldives

During 2006 and 2007, the Government of Finland-funded FAO 'Forestry programme for early rehabilitation in Asian tsunami-affected countries' provided support for the development of a foundational forest policy for the Maldives. The policy not only provides a first step along the road to creation of a forest sector but provides important environmental and social provision in relation to the forests and trees of the Maldives.

The geography of the Maldives creates some interesting challenges for developing forest policy and several factors had to be taken into consideration from the very beginning of policy development. The Maldives consists of 1192 islands grouped into 26 atolls. The total land area of 30 000 ha is scattered over 900 km north-south stretch of the Indian Ocean and the total population of 300 000 is located in just 200 inhabited islands. Another 100 islands are designated as tourist resorts and 56 are reserved for industrial use. Of the inhabited islands, only 28 have a land area of more than 100 ha and the average elevation of the islands is just 1.5 meters above the sea level. Although outer reefs protect the islands from ocean waves, 88 of the inhabited islands suffer major problems due to beach erosion and sea level rise resulting from global warming is a major risk for the Maldives.

Trees in a typical island street

The forest area of Maldives is not known precisely although the FAO Forest Resources Assessment of 2005 quoted a total 1 000 ha and the Agricultural Development Master Plan of Maldives (2006-2020) includes an estimate of 3 716 ha. Littoral forests and bushes have an important role in coastal protection and reduce strong winds and salt spray while preventing influx of salt water into the islands' aquifers during spring tides or floods. Trees and other woody vegetation cannot, however, protect the islands from rising sea levels, and their capacity to prevent serious coastal erosion is limited.

The Maldives depends on its natural resources for its survival under the vagaries of nature and the threat of rising sea level caused by climate change. Similarly, the wellbeing of the people of the Maldives depends on these same natural resources: fish and other marine life, beautiful islands and attractive landscapes for tourism, and tree and other vegetation cover to protect coastal areas. Forests and trees are traditionally highly valued in the Maldives but there has so far been no official policy to maintain, protect, conserve and sustainably utilise the forest and tree resources. The 2004 tsunami demonstrated the vulnerability of Maldives, and also the vulnerability of forest and trees; it also confirmed the importance of the protective function of forests and trees. There is a broad-based understanding in Maldives that it is now time to establish an official forest policy to secure the continuing existence of forests and trees, and the maintenance of their contribution to the wellbeing of Maldivian people.

Maldivian society and the lives of Maldivian people have been closely linked with the forest and trees available on the islands. Lack of metals and stones, other than coral stone meant that wood and other forest products had to be used for practically all items that were constructed or made. Forests and trees have several important functions in the economy of Maldives today. The direct benefits for the economy are becoming relatively less important in comparison with the increasingly important indirect benefits.

As regards direct benefits, the most obvious and measurable ones are the wood used (i) in boat building, (ii) as poles for house building, fencing, etc., (iii) by local carpenters for furniture, window frames and doors, (iv) in woodcarving and woodturning handicrafts mainly for the tourist market and (v) as firewood for cooking and smoking fish (though in decreasing volumes as kerosene, gas and electricity are increasingly used). Secondly, and probably of greater economic importance, are the non-timber forest and tree products such as (vi) coconuts and various products including tourist souvenir items, (vii) other fruits and nuts, (viii) mats for roofing, walls and other covering applications produced from coconut palm and screw pine leaves, (ix) gums and resins used in boat building etc., and (x) the various traditional medicinal products still widely used.

The increasingly important indirect benefits with significant economic importance include (i) coastal protection (against

wave erosion, salt spray, wind), (ii) amenity and aesthetic values that are vital for the success of tourism, and (iii) the provision of shade in islands making everyday toils bearable without excessive consumption of energy for fans or air conditioners. It is also noted that forests and other growing vegetation act as a sink for carbon.

Apart from the limited land area available for growing forest and tree products, the high cost of transport is one of the main bottlenecks hindering increased forest and tree-based production. Consequently, high value-added and high unit value products must be targeted instead of bulk products.

The new draft forest policy covers the management of forests, trees and bushes - both within and outside forests, and both publicly and privately owned - in Maldives for the benefit of the Maldivian people. The goal of the proposed new forest policy is:

Green Maldives with protected coastline, plant diversity, amenity and income to local people, through participatory management of forests and trees by local communities.

The policy goal will be reached through the following policy objectives:

Protection of coastline: The inherently unstable shores of the low-lying coralline islands of Maldives, threatened by raising sea level due to the global climate change, are protected by well stocked and sustainably managed buffer zones of 30 meters wide, wherever possible, composed of multi-purpose salt tolerant trees and bushes.

Biodiversity conservation: The fragile terrestrial ecosystems of Maldives, threatened by population pressure, economic development, invasion of exotic plant and animal species, and the mere small size of the islands, are protected through sustainable multi-purpose management of remaining forest areas, re-introduction of rare and threatened tree and other plant species, and conservation of adequate sample of terrestrial ecosystems by establishing a network of conservation islands.

Landscape beauty: In order to maintain and enhance the charm of the landscape of Maldives, and to provide a pleasant and cool environment for everyday life in urban areas, appropriate and well-growing shade and other amenity trees, including suitable fruit trees, will be maintained and planted in increasing numbers throughout the country.

Forest and tree-based income: High value local timber and non-timber forest produce production (high unit value), further processing (high value-added) and marketing is encouraged. Bulk products are mainly to be imported. The supply of the high value timber and non-timber forest products in a sustainable manner is to be secured through efficient and planned management of multi-purpose forests. This will provide income to local people both in procuring the necessary forest-based raw materials, and processing of the products, such as wooden boats, souvenir items, etc.

The key management approaches suggested include pursuit of decentralised management by devolution of rights and responsibilities to local communities. Management principles will be described in guidelines for forest management planning. Simple participatory forest management planning will be obligatory. The strategies and key actions for each of the forest policy objectives are organised according to the main types of islands: inhabited islands, uninhabited islands (used for agricultural production), and the tourist resort islands. It is proposed and broadly supported that a major awareness-raising campaign on the threats and opportunities related to forests and trees in Maldives is required to support the new policy. As such, the present forest policy will be launched and communicated through a major awareness-raising and information campaign that will utilise available mass media, including radio and TV.

Jyrki Salmi and Jeremy Broadhead
FAO, Forest Department

Woodfuel conference in England

On April 17th this year an important conference was organised jointly by the Royal Agricultural Society of England, the Royal Forestry Society of England, Wales and Northern Ireland and the British Forestry Commission. It was held at Stoneleigh Park in England and the subject was Fuelwood. The meeting, which was attended by over 250 delegates, was oversubscribed, an indication of the growing importance of wood as a fuel in England - one of the world's most highly industrialised, urbanised and deforested countries.

After a brief introduction by the president of the Royal Forestry Society the official "line" of the Forestry Commission was presented by Rod Leslie, head of programmes of the Forestry Commission, England. He referred first to the government's commitment to combating climate change by reducing carbon emissions by 20% below 1990 levels by 2010 and by 60% by 2050 and set the scene for the conference by saying that biomass or plant matter that can be converted to fuel (which includes woodfuel) was a renewable source of energy that could make a contribution to meeting these targets. Britain has the capacity to produce an extra 2 million tonnes of wood per year if the sixty percent of woodlands which are reported to be unmanaged were made productive, Mr Leslie said and although some people might be concerned at the appearance of woodlands just after harvesting it has to be appreciated that woodlands quickly regenerate and that sustainable management can increase biodiversity.

Most forestry activity in Britain depends upon government subsidies and a key paper was presented by the newly established Biomass Energy Centre which explained the technical and financial support available to woodland owners and managers through no less than 18 different grant schemes.

Much of the rest of the day was taken up by the presentation of 15 papers on further aspects of the subject including the latest technologies on processing and conversion from reliance on fossil fuels. For large-scale or industrial use chipping or pelletising is necessary to achieve a free-flowing uniform product for automated feed. A paper from the Wood Energy Business Scheme on socio-economics looked carefully at not only the cost of the raw materials but also the costs of processing. Clearly the cheaper the wood at source the more profitable the enterprise and more than one successful case study was based on zero cost, or almost zero cost wood waste. However, at least one example of short-rotation coppice was described using cost-efficient growing methods. There was little coverage of energy budgets such as the fossil fuel component in collection processing and delivery. A rise in oil price would have complex effects both on costs and selling price of biofuels generally.

One observes that "cleaning up" woodlands by removing

dead biomass is certainly not mainstream conservation practice in Britain at the present time, so increasing the production of woodfuel by this means might not be universally accepted. And the implicit assumption that burning wood is *de facto* CO_2. friendly is only true if it is part of a cycle which also involves the fixing of carbon through growing trees. Burning wood that would otherwise have gone into a landfill site may not necessarily be so carbon positive after all.

The findings of this conference have relevance for many industrial and larger-scale uses of woodfuel in other countries, although the subsidy-dependence of British forestry is not usual. In countries where dependence on woodfuel is high and where poor people gather it as a "free" good higher priority may be given to mechanisms for obtaining carbon credits to supplement rural incomes.

The programme of papers and speakers is on line on the website of the Royal Agricultural Society of England: http://www.rase.org.uk, and the final report and papers presented are due to be posted there by July this year.

Peter Wood
CFA Vice-President

Recycled fibre and wood products

In the United Kingdom in 2005/06, recycled paper and card made up 22% of recycled household waste, the second largest component of recycled household material (the largest was compost). Details of UK waste and recycling are on the DEFRA website at http://www.defra.gov.uk/environment/statistics/waste/kf/wrkf02.htm Global information on production and trade in recovered paper is available on the FAOSTAT database http://faostat.fao.org/site/381/default.aspx then clicking on "PRODUCTION" and "foreSTAT".

Like most of us who work in and with the environment I recycle as much of the material that comes into the household as I can. I received, however, a salutary check to my indiscriminate paper-recycling zeal to be told by the local Waste Management Services in Wiltshire that regarding those official envelopes we receive with "windows": *The plastic windows in envelopes are regarded as contamination by the paper re-processor. Therefore please remove before including envelopes in your paper recycling*. News to me I must confess, and I have to re-think my daily routine following the postman's visit!

Fibre and wood products are recycled in Wiltshire, UK, as follows:

- Paper is de-inked and cleaned for high quality newsprint, being recycled as newspapers back to the consumer within three or four weeks.
- Yellow pages are shredded and used in many ways, for loft insulation for example, packaging material, egg boxes and animal bedding.
- Cardboard is cleaned and reprocessed as cardboard again, in boxes and other packaging, animal bedding and even coffins.
- Timber is chipped and processed as medium density fibreboard, laminates and flooring.
- Chipboard is shredded and used in place of aggregate for landfill site infrastructure.

It would be interesting to learn from readers the experience of re-cycling wood and wood-fibre products in other countries.

(I gratefully acknowledge assistance from Jo Riley, Waste Service, Wiltshire County Council and Felice Padovani, of FAO Forestry Department).

Jim Ball
CFA Chair

CPF Sourcebook on Funding for Sustainable Forest Management

"It serves as a focal point for communication between the funds providers and fund seekers"

Lack of information, coordination and mobilization of funding, together with a weak institutional framework in most developing countries, has hampered progress in sustainable forest management. Mobilization of domestic and international financial resources for sustainable forest management remains one of the most critical issues addressed in international forest policy dialogue, including in many of the Regional Forestry Commissions of the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Forum on Forests.

It is often recognized that there are many different sources and opportunities for funding sustainable forest management, but useful information on how to obtain it was difficult to find, as well as on how to apply for funding.

In response, the Collaborative Partnership on Forests (CPF) launched in 2001 a web-based sourcebook on funding for sustainable forest management (www.fao.org/forestry/cpf-sourcebook). It compiles information on funding sources, policies and delivery mechanisms, with particular focus on developing countries. FAO maintains the CPF Sourcebook, in collaboration with the National Forest Programme Facility (www.fao.org/forestry/nfp-facility).

The CPF Sourcebook covers a broad range of funding resources, public and private, domestic and external. Information is derived from various sources, including donor agencies and countries, CPF members, international forest-related organizations and instruments, development banks, private sources, regional processes and other groups, such as foundations and international non-governmental organizations (NGOs). The main activities with the Sourcebook are to gather, produce, process and disseminate information. The content is based on existing information, which is accessible through the internet or printed public sources. The majority of the funding sources in the database consists of grants in their various forms. The target groups are well balanced among them, with a preference for NGOs. The other major part of

the sources in the database is directed to educational projects and scholarships.

In addition to the actual database that covers some 700 potential funding sources, the CPF Sourcebook also provides information on ways to package a project proposal when seeking funding as well as ways to use funding assistance efficiently once obtained. This information is accessed through CPF Sourcebook web site. Furthermore, the CPF Sourcebook provides a moderated forum for helps and advice for grant seekers. This discussion forum help users to post queries related to forestry funding, share tips for approaching fund providers and write grant proposals, discussing various innovative financial mechanisms, and exchange project successes, etc.

Summaries of funding information of particular interest are compiled into an electronic newsletter or bulletin for distribution through an e-mail list server. This bulletin is sent every month to over 700 subscribers and posted on the CPF Sourcebook web site.

While there is no direct mechanism to estimate to what extent the Sourcebook has helped fund-seekers in mobilizing funding for their projects, one indication of its utility is that the Sourcebook web site is one of the most popular sites among the CPF sub-sites. FAO also receives feedback from users commending the web tool as useful provider of information. Based on the feedback, FAO maintains the database and incorporates new funding sources in the system as they become available.

The initiative of the CPF Sourcebook is an on-going exercise, and is open to new ideas that can improve its future scope and developments. This service has been widely publicized to various groups and clients including the departments of FAO, CPF members, country's national forest programme focal points, several e-mail lists servers and web sites and some very positive feedback has been received. CPF Sourcebook has also forged several partnerships, to groups such as Mountain Partnership (http://www.mountainpartnership.org/default.asp), International Foundation of Science (IFS), and many others. For instance, several forest-related networks have requested to add direct links to the CPF Sourcebook web site.

While CPF Sourcebook has attracted widespread attention at many levels and with different clients, publication on CD-ROM and hard copy are considered for those with limited access to internet or computer.

Tiina Vahanen and Edward Kilawe
FAO, Forest Department

100 Years of forestry at Aberdeen and Toronto

This year sees the centenary of two faculties of forestry either side of the Atlantic – at the University of Aberdeen in the UK, Scotland and at the University of Toronto, in Canada, Ontario. Here are some highlights over the years from both, highlighting different aspects.

Aberdeen's Milestones

These milestones, and a look at the future, are extracted from *Celebrating one hundred years of forestry at the University of Aberdeen. – a brief history*, by Andrew D. Cameron. This is an excellent summary and is available in full as a PDF file from the home page of the Faculty of Forestry's website found at: www.abdn.ac.uk/~for257/index.htm

- **1895** Business Committee of the General Council of the University of Aberdeen reports that among the more pressing wants of the University is a lectureship in Forestry. At this time, Aberdeen was seen as an ideal centre for forestry, particularly since the hinterland was the most heavily forested in Scotland and the proximity of extensive areas of forest offered excellent scope for field studies and demonstrations.
- **1907** Forestry becomes fully established as a distinct discipline and the first lecturer in forestry, Mr William Dawson, is appointed. He lectured students in botany, zoology, geology, chemistry and land surveying.
- **1914** The ordinance for the degree of BSc (Forestry) is approved by His Majesty George V. The University receives the sum of £750 to pay for a new lecturer in forestry.
- **1919** The first BSc Forestry degree is awarded to Mr George Knowles Fraser, who went on to become a member of teaching staff.
- **1925** The Chair of Forestry is founded.
- **1926** Professor Arthur W. Borthwick is appointed as the first Professor of Forestry at Aberdeen. Professor Borthwick studied botany at St Andrews, and then forestry at Munich under Professor Robert Hartig before coming to Aberdeen.
- **1938** Professor Henry M Steven is appointed to the Chair of Forestry. Professor Steven studied forestry at the University of Edinburgh before moving into forest research and became a research officer for the Forestry Commission.
- **1939** Mr William M. McNeill is appointed Lecturer in Forestry. Forestry teaching continues during the war. Courses were also run for Canadians working in British forests.
- **1963** Professor Steven retires and Professor John D Matthews is appointed to the Chair of Forestry. Professor Matthews studied forestry at Aberdeen before moving on to the Research Division of the Forestry Commission, eventually to become head of the Genetics Section.
- **1974** A visitation of the University Grants Committee recommended to the University the closure of the Department. This was later withdrawn after strong lobbying by Professor Matthews. His input was seen as a notable milestone in the history of forestry at Aberdeen.
- **1984** Professor Hugh G Miller is appointed to the Chair of Forestry. Hugh Miller, a graduate of forestry from Aberdeen, worked as a scientist at the Macaulay Institute before his appointment.
- **2000** Forestry is merged with Agriculture. The next four years were nearly disastrous for Forestry, which comes close to the brink of extinction. Permanent staff numbers reduced from nine to three.

- **2003** Hugh Miller retires. The Chair of Forestry is not replaced. Schools and Colleges are formed within the University. Forestry is placed within the School of Biological Sciences, which along with the Schools of Psychology, Medicine and Medical Sciences, form the College of Life Sciences & Medicine. BSc in Arboriculture and Amenity Forestry is closed due to low student numbers. Strong lobbying by staff succeeds and Forestry is de-merged from Agriculture, and affiliated with Plant & Soil Science. Forestry regains its identity as a distinct discipline. This is seen as a major milestone in the history of forestry at Aberdeen University.
- **2005** Forestry returns to its original home adjacent to the Cruickshank Building after a period of 15 years. A new degree in BSc Forest Conservation is established.

The future

There is room for cautious optimism as student numbers have increased every year since 2003, perhaps highlighting the significance of regaining a clear identity for the discipline of forestry at Aberdeen University. However, the future remains one of uncertainty since forestry, like many other small specialised disciplines, will always attract relatively modest numbers of students and will continue to be vulnerable to closure as universities strive to maximise income through high student numbers.

It is important that those working in the forestry industry take every opportunity to emphasise that educated and motivated graduates continue to be needed to deal with the complexities of forest management in an ever-changing world of economics and the environment, and that positions in forest management cannot be readily replaced with graduates from associated environmental disciplines. As long as the qualities of our graduates continue to be recognised, we can enter our second century with confidence.

Toronto's interesting facts

The Faculty of Forestry at the University of Toronto has contracted Dr. Mark Kuhlberg to create a Faculty Memoir for the Centennial celebrations. The working title is **100 Rings and Counting,** and the book will be not just a historical record, but also a story about the contributions of UofT's forestry graduates around the world. The bullet points are taken from the Interesting Faculty Facts page of the Toronto Faculty of Forestry Centennial website, found at: http://www.forestry.utoronto.ca/centennial/index.html, which gives details about ordering the book.

Did you know?

- Three universities vied for the first forestry faculty in 1906/07 including the University of Toronto, Queen's University and the Ontario Agricultural College at Guelph and UoT won out when the provincial government of the time 'paid Queens off' with a lump sum.
- The Ontario government refused to hire all but one of our first Dean's (Bernhard E. Fernow, 1907-1919) 58 graduates because of his blunt and stinging criticism of Ontario's lacklustre forestry policy.
- One of the Faculty's professors was fired on the eve of the Great Depression when he defended the forest rather than the government.
- Even prior to World War II, the Faculty was one of the most international forestry schools with students from Germany, Gibraltar, India, Norway, Finland and Holland.
- After World War II, the Faculty's graduates were on the vanguard of the conservation movement in Ontario, leading the call for a holistic approach to managing the environment in the province's more heavily populated areas, carrying out "environmental management" long before the "greens" or "environmentalists" appeared on the scene.

The Faculty has also had a litany of notable graduates including, but not limited to....

- L. M. Ellis who served as New Zealand's Director of Forestry during the early to mid-1920s, establishing Pinus radiata as one of the pulpwood species in New Zealand, and transforming the country into a major pulp and paper exporter.
- Gordon Cosens who served as a professor and its third Dean (1941-1947), finishing his career as Vice President and General Manager of Kimberly-Clark's Canadian operations where he ensured KC implemented Ontario's first sustained, commercial-scale reforestation project.
- Frank MacDougall who served as deputy minister in the Ontario Department of Lands and Forests, the first time a forester held this most senior post, and helped modernize the government's administration of Crown forests for 25 years from 1941 to 1966.
- G. M. Linton who as Superintendent at the Orono Forestry Station during the 1920s, lobbied for reforestation and rehabilitation of wastelands in southern Ontario at a time when public support for such initiatives was lukewarm at best.
- Chong-Li Huang, a graduate during the late 1940's who went on to serve as head of the Chinese Academy of Forestry's Department of Forest Management after his return to China in the early 1950s.
- K. M. Mayall who was instrumental in preparing a landmark report in the late 1930s that called for restoring and protecting a large section of the Oak Ridges moraine.
- Robert D. "Bob" Carman who also climbed the rungs of the provincial bureaucracy after collecting a handful of medals for his scholastic accomplishments at the Faculty; serving as Secretary to the Cabinet, Ontario's highest ranking civil servant, during the mid-1980s in Frank Miller's Conservative government.

In conclusion, Toronto's notable alumni, along with many others from the many forestry faculties around the world, demonstrate that forestry is an excellent discipline for challenging abilities and broadening horizons, as well as providing the expertise necessary for managing the world's forests wisely. Many congratulations to both Faculties, and also many thanks to Messrs. Andrew Cameron and Mark Kuhlberg for their splendid efforts to document our collective history as a profession, at a time when it is ever more important to demonstrate the worldwide importance of forestry and forest resources.

Marcus Robbins
(Aberdeen 1967-70)

continued from Page 2

Log production; 28 % from own concession; 61,000 m^3 @ royalty US$ 1.64 per m^3; but probably less because the own-concession logs are more likely to be the lower density timbers for the plywood mill and thus in royalty class II G$ 176.57 per m^3 (US$ 0.88 per m^3), hence total of US$ 53 854 is probable

US$ 100 040

Area fee on own concession; 1.61 million ha @ US$ 0.0013 per ha[2], but possibly only half this area fee is invoiced

US$ 2 093

Log production; 54 % from rented concessions; 117,000 m^3 @ US$ 1.41 per m^3

US$ 164 970

Log production; 18 % from 2 Amerindian areas; 40,000 m^3[3]@ US$ 4.50 per m^3

US$ 180 000

Area fees on rented concessions[4]; 0.39 million ha @ variable US$ 0.20-0.30 per ha but only 50 per cent of the area fee is invoiced for long- and medium-term concessions

US$ 60 943

By subtraction, probable rental for the illegal sub-let concessions

US$ 452 954

Total = US$ 961 000

Thus 47 per cent of even these tiny taxes is probably being subverted into rent payments for illegally sub-let concessions. And while Samling is paying an average of US$ 13.6 per m^3 in forest taxes excluding log administration fees, its subsidiary Barama in Guyana is paying the government and Amerindian communities an average of US$ 2.33 per m^3, about one sixth the Sarawak rate.

The ludicrous underpricing of forest resources in Guyana has been brought repeatedly to the attention of the Guyana Forestry Commission (among others - Thomson 1994, Palmer 1996, Landell-Mills 1997, Salmi & Craig 2001, Hunter 2001, Eriksson 2003, ITTO 2003, Bholanath 2005 – this list includes GFC's own staff). Even the attempt to restore levels of royalty value which had been eroded by exchange rate movements and inflation was only partially successful in 1997, with no change since then. Moreover, holders of large-scale forest concessions are often substantially in debt even for these tiny royalties and area fees and yet are allowed by the GFC to continue operations. No interest payment is charged on overdue taxes.

Local processing of Barama's log outturn

Barama's FDI arrangement in 1991 was for local processing in Guyana, providing improvements to local forest product skills and enhanced employment in exchange for extra-ordinarily generous tax breaks, which were renewed in 2001 and 2004. In FY 2005-6 Barama converted 63,000 m^3 of logs into 29,000 m^3 of utility plywood (46 per cent conversion in a plymill rated at 108,000 m^3 annual production; 27 per cent use of capacity) 14,000 m^3 of logs into 5,000 m^3 of sawn lumber (36 per cent conversion in mills rated at 64 or 69,000 m^3 annual production[5]; 7 or 8 per cent use of capacity; although the larger sawmill is only just starting up and both the conversion rate and mill usage should improve).

Contrary to its FDI arrangement, and in spite of the under-use of its mills, Barama exported more than 119,000 m^3 of logs in FY 2005-6, possibly as much as 141,000 m^3, but perhaps 22,000 m^3 of that amount was in-kind rental for the illegally sub-let concessions operated by Barama. Taking its own FOB average prices, Barama earned US$ 14.28 million for log exports (@ US$ 120 per m^3 against a production cost of US$ 80 per m^3), a net profit of US$ 4.76 million. Although it is exempt from the 2 per cent export commission on all but the greenheart (*Chlorocardium rodiei*) logs from its own concession, Barama is not exempt from export tax on logs extracted or purchased from other concessions. That tax should probably be levied on all the logs exported as they are likely to have been obtained from outside Barama's own concession. That would earn a further US$ 285,600 for Guyana revenue, adding a third to the tax income. Given that these exported logs are likely to be the fine furniture and flooring timbers, they are more likely to be worth three times the declared FOB value. It is not surprising that Barama is said to be in negotiation with the Office of the President for such an exemption from the 2 per cent export commission.

How could Guyana obtain greater net social benefit from the natural forest ?

This is what the National Development Strategy 1996 for 2000-2010 requires. Obviously one way would be to increase forest resource access charges to Malaysian levels, as costs of logging seem to be very similar. Regular indexing against inflation and currency movements would also help. It is absurd that locally-owned concessions pay in Guyana dollars pegged to US dollars while Barama pays in unadjusted "old" Guyana dollars (Bholanath 2004); the unsynchronised step changes in Barama's special rates result in Barama paying slightly more than local enterprises per m^3 at present, but this is fortuitous.

Four national policies and the manifesto of the Party-in-Power favour local processing. Hunter (2001) noted 2001 that "Unfortunately, Guyana has acquired a reputation for several shortcomings, especially with respect to delivery date, degrade and moisture content". Hunter noted also unexplained lower FOB prices from Guyana compared with regional prices. The

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[2] Note that Barama's area fee rate is less than 0.4 per cent of the area fee rate charged to locally owned enterprises; US$ 0.0013 per ha compared with US$ 0.08-0.15 per acre (0.19-0.36 per ha). There is some doubt about this fee, because the Barama FDI document does not mention it, but Sizer (1996, page 41) and Eriksson (2003, appendix 4) are explicit that this is the area tax. It is unclear if this already minuscule fee is further halved, like those of the other large concession holders. Barama's FDI royalty rate for Class I timbers in the present 4-year period is G$ 16.88 per hoppus cubic foot = US$ 1.64 per m^3. Local concessionaires pay G$ 282.52 (US$ 1.41) per m^3

[3] Based on an estimate of 562 logs extracted by Barama from Akawini Village Lands during July 2006, and 3 m^3 per log. The monthly log volume could be a 50 per cent underestimate, and there is reputed to be a 10 per cent under-measurement . Barama should pay to the Village Council through its shell company IWPI a Village "premium" or tax of US$ 4.50 per m^3 on average (rates vary by major timbers), but has not done so for many months. No royalty is payable to the government on logs from Amerindian titled Village Lands. The two Amerindian areas together comprise 72,009 ha.

[4] 3 long-term concessions, 286,220 ha @ area fee US$ 0.30 per ha; 1 medium-term concession, 26,304 ha @ area fee US$ 0.25 per ha; 2 short-term concessions, 77,184 ha @ area fee US$ 0.20 per ha; area fees on long- and medium-term concessions are charged at 50 per cent of these rates, short-term concessions are charged at full rate.

[5] Different pages in the Samling IPO have different figures for the rated capacity of the Land of Canaan sawmill, of 14,000 m^3 or 19,000 m^3 annual output.

differences could be explained by values declared to Customs not being real values, especially for exporters which have close business links with their buyers.

An example of what is achievable may be estimated for a timber suitable for garden furniture, *Hymenaea courbaril*, known as locust in Guyana and jatobá or courbaril in Brazil. This occasional tree in central Guyana has a tall straight trunk without buttresses and the timber is usually free of defect. Using a 0.65 log-to-lumber conversion rate (Mendes and Macqueen 2006, annex 3, for mobile thin-kerf bandmills), the lumber is about 65 per cent grade A and 35 per cent grade B, where A and B correspond to the two highest of the four grades for sawn timber in the Guyana timber grading rules for hardwoods (GFC 2003). Here are the value multipliers from the log at mill gate to finished furniture:

Hymenaea courbaril log, FOB export value, US$ 120 per m^3;
multiplier = 1.5

0.42 m^3 grade A sawn timber, FOB export value, US$ 770 per m^3 plus 0.23 m^3 grade B sawn timber, FOB export value, US$ 320 per m^3;
multiplier = 5.0

garden furniture from this 0.65 m^3 of sawn timber, FOB export value, US$ 1170;
multiplier = 14.6

Now repeating the estimation with the 0.40 log-to-lumber conversion rate (FPA 2007) which is the best that Guyana's old and technically inappropriate mills can produce, but retaining the same 65/35 grade recovery as from mobile thin-kerf bandmills:

0.26 m^3 grade A sawn timber, FOB export value, US$ 770 per m^3 plus 0.14 m^3 grade B sawn timber, FOB export value, US$ 320 per m^3;
multiplier = 3.1

garden furniture from this 0.40 m^3 of sawn timber, FOB export value, US$ 720;
multiplier = 9.0

Returning to the 119,000 m^3 of logs of fine furniture and flooring grade timbers exported by Barama in financial year 2005-6, using the lower log-lumber 0.4 conversion ratio could result in furniture worth US$ 86 million. Using the higher ratio of 0.65 could result in furniture worth US$ 139 million. Instead, the raw logs were valued for Customs declaration at US$ 14 million FOB. It would be astonishing that the old family-owned sawmillers are generally in favour of continued log exports rather than conversion locally into fine furniture (FPA 2007), if one did not know that some of these millers are the chief beneficiaries of the rent from their illegally sub-let concessions, more than US$ 450,000 per year (data derived from Samling/Barama's IPO, March 2007).

Of course, these calculations are highly simplified and no account has been taken of the capital investment needed for conversions from log to lumber or from lumber to furniture. The estimates show what a great difference is made by efficient primary conversion from logs to lumber, and how worthwhile should be support for local manufacture rather than export of raw logs. In addition, there are many additional benefits in employment, skills, taxes generated and services provided.

Approvals of applications by local entrepreneurs for the fiscal incentives for local manufacture are long delayed by the government investment agency Go-INVEST, in spite of the national policy statements, while applications by foreign log-exporting companies for extended FDI concessions appear to be approved "on the nod". This discrimination is a strong discouragement against local added-value processing and a strong encouragement for taking the easy path of unprocessed log exports.

Field monitoring and collection of forest revenues

When the Guyana Forestry Commission was created from the traditional civil service Forest Department in 1979, the parliamentary Act provided the GFC with substantial financial autonomy. In spite of the low forest resources taxes, and low rates of debt collection, the GFC has built up a considerable fund. Income from forest taxes, net of forest management costs, should be paid to the Consolidated Fund, but the Ministry of Finance seems to be unaware that it has to claim the due amounts from the GFC. Contracting out to the private sector the tasks of invoicing and debt collection could greatly improve revenue collection but might not suit some elements in the government. There should be abundant money to pay for field monitoring of Barama. The SGS Qualifor[6], ASI[7] and WWF Guianas[8] reports imply that this monitoring is lax or inefficient.

Guyana is the second poorest country in the Caribbean and one of the poorest countries in the Americas yet fails to price appropriately the access to its forest resources, fails to collect debts on that access, and fails to use appropriately the taxes that are collected.

Can action by civil society overcome deep and widespread corruption ?

The case is not hopeless. Simply by asking for implementation of the forest and other laws and regulations, and by calling on government to implement the national policies and strategies, civil society can with persistence so trouble or annoy the Party-in-Power that some appeasing action is promised. Civil society then calls for implementation of that action, and draws attention to the costs of inaction. Civil society can also point out to an often unknowing populace that government inaction leads to rent-seeking by both national and transnational enterprises. And one-sided and secret FDI arrangements privilege the transnationals at the expense of local enterprises.

In spite of a tradition of secretive government and unreliable public relations communications by the logger, persistence by civil society can ally effectively with an independent Press to disclose abuses. A Party-in-Power which is sustained by its ethnic majority and accustomed to protests which fizzle out quickly may have difficulty in countering sustained questioning.

Arguments against Samling in Sarawak centre on indigenous claims to land within forest harvesting concessions. In court, this is an argument about the validity of statute law versus customary law, and the government has a strong position. Arguments against Samling/Barama in Guyana deal with illegalities and the abuse of FDI incentives, as well as

[6]URL = http://www.forestry.sgs.com/9205-gy_-_barama_ma2005-10_-_ad36a-03_gm.pdf , February 2006
[7] URL = http://www.accreditation-services.com/PublicSummaries.htm, January 2007
[8] URL = http://www.stabroeknews.com/index.pl/article?id=56519586, May 2007

unsustainable logging. In this case, government's long-term lack of action on the illegalities suggests strongly that weaknesses in governance include deep and widespread corruption.

The President of Guyana has said that he will deal personally with matters of corruption if the evidence is placed before him[9]. Barama prefers to deal directly with the Office of the President rather than with the Guyana Forestry Commission. What does this dealing behind closed doors suggest to the average citizen, when Article 36 of the National Constitution 1980 commits the government to transparency ?

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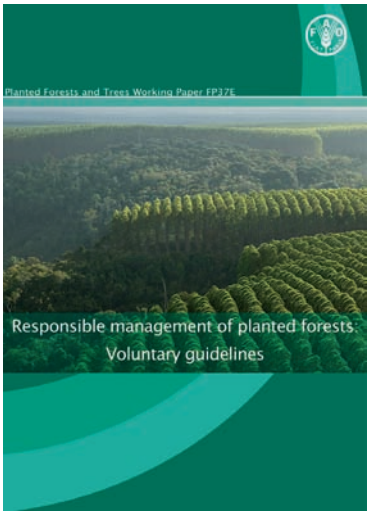
[9] URLs = http://www.gina.gov.gy/fact/f060401.html, http://www.gina.gov.gy/stories%20&%20photos.html

[10] Field work in Suriname (2005) and Guyana (2006-7) was supported by grants from the Tropical Resources Institute (Yale University), Compton Fellowship, Yale Center for International and Area Studies (YCIAS, now the MacMillan Center), Coca Cola World Fund, and Yale University Agrarian Studies. Writing is supported by a Visiting Fellowship for Tropical Forest Conservation from the Gordon & Betty Moore Foundation for the Amazon Conservation Leadership Initiative at the School of Botany and Center for Latin American Studies at the University of Florida, Gainesville. E-mail for correspondence: janette.bulkan@yale.edu

New publication

New voluntary guidelines published by FAO

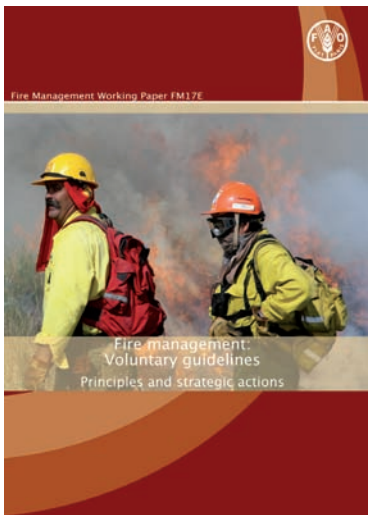
FAO recently published **Voluntary guidelines** for **Responsible Management of Planted Forests** and for **Fire Management**. The two voluntary guidelines address the social, cultural, environmental as well as economic dimensions of planted forests and fire management. Furthermore they encourage policy dialogue, strategic planning and integrated actions across sectors.



FAO collaborated with a wide range of partners and stakeholders in preparing these guidelines, through technical and expert consultations and six Regional Forestry Commissions during 2006. The 18th Session of the Committee on Forestry (COFO), March 2007, commended FAO for facilitating these multi-stakeholder processes. Additionally, COFO recommended that FAO work together with Member Countries and partners to strengthen capacity towards their implementation.

These guidelines provide a comprehensive review of responsibilities under international commitments to decision makers in policy, planning and management. They also provide a framework of principles and strategic actions necessary for responsible management of planted forests and fire management at the national, sub-national and field levels. The two voluntary guidelines are tools that can contribute to sustainable forest management, as well as in achieving broader livelihoods and development goals.

To facilitate implementation of the voluntary guidelines for fire management, the Fire Management Actions Alliance was established, with 40 founding members, at the 4th International Wildland Fire Conference in May 2007. Members are encouraged to implement the voluntary guidelines, share information, knowledge and activities and to enhance international cooperation in fire management. FAO welcomes new members to the Alliance.



FAO looks forward to collaboration with countries and organizations to strengthen their capacity in the implementation of these voluntary guidelines, particularly developing countries.

Please direct any requests for hard copies, through Jim Carle, Senior Forestry Officer (E-mail: jim.carle@fao.org).

Relevant web references:

www.fao.org/forestry/site/firemanagementguide/en
www.fao.org/forestry/site/firealliance
www.fao.org/forestry/site/plantedforestsguide/en

Around the world

Five companies to undertake forest plantation programme - Malaysia

Five companies to undertake forest plantation programme - Malaysia

Five companies have been selected for the forest plantation programme under a special government aid scheme. Those chosen are Modal Jati Sdn Bhd, Hamid Sawmill Sdn Bhd, Amanah Saham Pahang Bhd, Ta Ann Holdings Bhd and SPPT Development Sdn Bhd, said Forest Plantation Development Sdn Bhd's chief executive officer Dr Darus Ahmad.

Forest Plantation Development is a special purpose vehicle set up by the Malaysian Timber Industry Board to disburse soft loans for the programme. "Under the programme, the government will provide financing of RM60.56 million to these companies," he told reporters after the signing of letters of acceptance.

The companies will plant 9,735 hectares of latex timber clone (LTC) rubber trees and 2,500 hectares of acacia trees, he said. Darus said RM1,065 million had been set aside for the programme from 2006 to 2011. Last year, RM80,340 million was

allocated for the planting of about 16,100 hectares, he said.

The company, he added, was targeting 375,000 hectares to be planted by 2010 under the Ninth Malaysia Plan. Plantation Industries and Commodities Minister Datuk Peter Chin Fah Kui, who was present at the ceremony, said the signing of letters of acceptance should be seen as a viable and smart partnership between the government, private sector and general public. "This event shows our commitment to see that companies are serious in undertaking the forest plantation project for long-term sustainability of the wood-based sector," he said.

www.bernama.com.my

Apes under threat from green fuels

The threat to great apes, such as the orang-utan, is "growing visibly" as a result of the demand for greener fuels, Richard Leakey, the paleo-anthropologist and conservationist warned in June. On a visit to London, the former head of the Kenya Wildlife Service said that the shift away from fossil fuels to biofuels was "a great concern" as huge areas of forest in south-east Asia had already been cleared for palm oil plantations, and the pressure could only increase.

The Great Apes Survival Project, a United Nations initiative of which Dr Leakey is patron, says 80 per cent of orang-utan habitat has been cleared in the past 20 years and the global population of 50,000 is struggling to survive in what is left. Dr Leakey said that the growing of palm oil was now a threat in Africa too, where vast areas of the Congo basin contain gorillas, chimpanzees and bonobos.

He said it might be "politically correct" not to criticise developing nations for destroying their forests but they did not deserve to be exempt from blame because the destruction of tropical forests was the largest single contributor to climate change. "People tend to shrug their shoulders and say what are poor countries to do if they can't exploit their natural resources. That's all very well but it's not sustainable."

Acknowledging a European Union report last month, which said that its green fuel targets would accelerate the destruction of rainforest, Dr Leakey said he would like to see the EU step "beyond" biofuels. "I would like to see climate change stimulate the creation of wholly new sources of energy, hydrogen being one and fusion another. A crisis of this kind should create a revolution in opportunities. Let's move on."

Dr Leakey said that climate change agreements, such as the successor to Kyoto which may be negotiated this year, gave opportunities for new financial mechanisms to enable the private sector to protect forests - for carbon as well as biodiversity.

www.telegraph.co.uk

Australia joins forces with the World Bank to reduce deforestation

Australia will contribute AU$11.7 million ($US10 million) to the World Bank's new Global Forest Alliance to help protect the world's remaining great forests from deforestation and to reduce greenhouse gas emissions. Australia is the first country to contribute to the new alliance.

Minister for Foreign Affairs, Alexander Downer, and Minister for the Environment and Water Resources, Malcolm Turnbull, announced this contribution at a High Level Meeting on Forests and Climate in Sydney, attended by representatives from more than 60 governments and international organisations. That Australia is hosting such an important event demonstrates our deep concern about the environmental problems created by deforestation.

This $11.7 million is funded under the $200 million Global Initiative on Forests and Climate – a practical response to climate change that will substantially reduce greenhouse gas emissions by tackling deforestation.

Our contribution will assist the World Bank to help developing countries to establish credible estimates of national forest carbon stocks, identify sources of forest emissions and develop incentives for conserving forests and investing in sustainable forest management.

The World Bank has extensive experience in managing carbon funds and developing innovative approaches to carbon financing. We share similar objectives in working with developing countries to conserve forests and promote reforestation. Sound management of our forests is critical for the more than 1.6 billion people worldwide who depend on forests for their livelihoods, including for fuels, medicines and food. About 60 million indigenous people are almost wholly dependent on forests and about 13 million people worldwide are employed in the forestry sector. These generate forest products with a value of more than US$350 billion.

Tackling deforestation is one of the most cost-effective ways to reduce greenhouse emissions in the short term. Together with the World Bank we aim to set the stage for a long term, sustainable approach to addressing deforestation.

www.malcolmturnbull.com.au

China's forest coverage soars

China's forest coverage has risen constantly for almost two decades, increasing the nation's contribution to the world's carbon dioxide absorption, Zhu Lieke, deputy director of the State Forestry Administration (SFA), said recently. The world's forested area decreased by about 0.2 percent annually or 9.39 million hectares between 1990 and 2000, said Zhu, citing statistics from the Food and Agricultural Organization of the United Nations.

However, forests in China had been growing by 1.2 percent or 1.81 million hectares every year in the same period, the

highest growth rate in the world, Zhu said at a press conference in Beijing. The expanding forests had enabled the country to absorb more carbon dioxide every year.

Experts estimated carbon dioxide absorbed by China's forests had risen from 470 million tons in 1990 to more than 500 million tons currently. China led the world in forestation with 54 million hectares of cultivated forest, according to SFA chief Jia Zhibang. Since the drive for voluntary tree-planting and forestation 26 years ago, Chinese people had planted 49.2 billion trees, he added.

The country's forest coverage was 18.21 percent or 175 million hectares, and its commodity timber coverage stood at 13.6 billion cubic meters, which would grow by 500 million cubic meters annually, Jia said. Research showed every new cubic meter of forest absorbed 1.83 tons of carbon dioxide and emitted 1.62 tons of oxygen on average.

www.chinadaily.com.cn

China is saint and sinner of paper industry

"Could do better" seems a harsh verdict on a country that has single-handedly revitalised the paper recycling industry, but when that country is as large as China even a small improvement in efficiency will create a global benefit.

A report by Forest Trends, a forest conservation group based in Washington DC, has singled out China as an unexpected force for environmental good. Since 2002, the country has recycled 65 million tonnes - about 7 per cent - of the world's waste paper. In 2006 alone this saved 54.3 million tonnes of trees from pulping. "Before China became interested in using waste paper as a fibre source, the market was really flat. It hadn't changed for years," says Luke Bailey from Forest Trends.

However, the report also highlights a worrying new aspect of China's paper industry. Not content with being the world's waste-paper basket, China also imports about 8 million tonnes of wood pulp every year to produce high-quality paper. Although two-thirds is sourced from sustainable forests in the Americas and Europe, the rest comes from unsustainable sources in Indonesia and eastern Russia. Forest Trends is calling for an end to that practice, and believes that pressure on China itself is the key. China can influence the countries it imports from while satisfying the markets it supplies of the legality of their paper-based goods, Bailey says. Pressuring Indonesia, he adds, would simply raise its wood pulp price and so open the way for other countries to export illegally to China.

The report says Chinese paper companies should verify the sustainable origins of their pulp by adopting systems such as that used by the Forest Stewardship Council.

environment.newscientist.com

Climate change affecting Sundarbans region of Bangladesh

A low-lying and densely populated country, Bangladesh may become one of the worst affected by continued climate change. The charity Concern, present in most parts of the country, has become incresingly aware of the effects of climate change on the local communities in which it works, paticularly in the southwestern parts of the country.

The Sundarbans, in southwestern Bangladesh, is the world's largest delta and mangrove forest. It is a UNESCO World Heritage site, home to the legendary Bengal tiger and a uniquely diverse marine biology. The 20,000 square kilometre forest delta stretches across the lower reaches of the Bengal basin and is shared between Bangladesh (which claims 62% of the forest) and its neighbour India. Apart from its extraordinarily diverse flora and fauna, the Sunderbans (literally "the beautiful forest" in Bengali) also provides vital natural protection to life and properties of the coastal population in cyclone prone Bangladesh.

Over the last decade however, the sea has steadily eaten into the Sundarbans, and the entire Bengal basin region is now threatened by an ecological disaster. The Intergovernmental Panel on Climate Change (IPCC) is forecasting that the already extreme weather, with its frequent severe storm surges, droughts and floods will get worse and as the waters rise, eventually submerging the entire Sundarbans.

In Shyamnagar upazila (or sub-district, the lowest level of administrative government), the inhabitants, the majority of them farmers, have noticed changes in the weather over the last decade, which have begun to severely affect them. The consequences of rising sea levels and extreme temperatures are becoming increasingly real and immediate in their everyday lives.

www.alertnet.org

Commission failure on agrofuel sustainability

The EU Spring Council adopted the Commission's proposal for a 'binding 10% target for the share of biofuels in petrol and diesel in each Member State by 2020, to be accompanied by the introduction of a sustainability scheme for biofuels'. The Commission's public consultation on its proposals for ensuring sustainability closed on 18 June 2007, and submissions can be viewed on the Commission website.[1]

Unfortunately, the three criteria proposed by the Commission fall far short of any meaningful notion of sustainability. Above all, there is no proposal for assessing either the social impacts of agrofuel production or the indirect impacts of agrofuel

production on food and displacement. This is in sharp contrast to the findings of the Dutch government's Cramer Report[2] which concluded that some of the most serious negative impacts of agrofuel production are linked to the indirect impacts on land use, and that these must be controlled if sustainability is to be ensured.

As regards environmental impacts, the Commission proposes that agrofuels be considered sustainably produced so long as they do not replace biodiversity hotspots or forests high in carbon stocks. The significant impacts of large-scale monoculture production of agrofuel crops on water, soil fertility and ecosystem integrity will not have to be taken into consideration.

The European Commission has confirmed, in response to a parliamentary question from MEP Caroline Lucas, that it will not be able to guarantee the sustainability of agrofuel imports. FERN's submission to the Commission[3] therefore calls for a suspension of the 2020 target in the obvious absence of meaningful sustainability criteria.

1 To view submissions and download the Consultation Document, go to http://ec.europa.eu/energy/res/consultation/biofuels_en.htm
2 Available at: http://www.mvo.nl/biobrandstoffen/download/070427-Cramer-FinalReport_EN.pdf
3 Available at www.fern.org

www.fern.org

Deforestation accelerating in Central Africa

Central Africa is steadily giving way to industrial logging, a new research report shows. The report, published in June in the journal Science, highlights the rapid expansion of the logging frontier in the Congo Basin, including Cameroon, Central African Republic, Equatorial Guinea, Gabon, Republic of Congo and Democratic Republic of Congo. It shows the need to conserve forested landscapes while also sustaining timber production crucial for Central African nations.

Central Africa, especially the Democratic Republic of Congo, contains the last frontiers for logging expansion in Africa, Nadine Laporte, a scientist at the Woods Hole Research Center in the United States and one of the authors of the report, told SciDev.Net. In Central Africa as a whole, 600,000 square kilometers of forest (30 per cent) has been conceded for logging, whereas only 12 per cent is protected.

Laporte and colleagues use satellite remote sensing to track the expansion of logging roads for the three decades preceding 2003. Road development provides a measure of the amount of logging that is taking place in forested areas. They analysed four million square kilometres of the region, using over 300 Landsat satellite images.

The highest densities of logging roads are in Cameroon and Equatorial Guinea, where 15 per cent of the forest has been disturbed. The most rapidly changing area is in northern Republic of Congo, where the rate of road construction roughly quadrupled between 1976–90 and 2000–02.

In the Democratic Republic of Congo, which contains 63 per cent of the remaining forest of the region, only one per cent of forest has been disturbed by logging trails and tree-felling. But the analysis also reveals evidence of a new, expanding logging frontier, with an increasing rate of logging-road construction since 1986.

Laporte says that the impact of logging on the forest of Central Africa has not been recorded on such a scale before. "It has never being timelier to monitor forest degradation in Central Africa because there's still an opportunity to make a significant difference in reducing the amount of deforestation," Laporte told SciDev.Net. She says the 'average citizen' will be the one to determine the future of the forests in Central Africa. "If the average citizen decides he only wants to buy certified wood, the industrial company will have to comply. If they do not care, the forests of the world, not just Africa, could be damaged beyond recovery."

Demola Omojola, from the geography department at the University of Lagos in Nigeria, said people must become more aware of their environment. "[People] believe in the concept of having inexhaustible natural resources, and the implication is that we are reckless to our environment and it is showing in the way we are losing biodiversity."

www.scidev.net

Dutch Elm Disease

A new generation of Wych elms (*Ulmus glabra*) that appear to be resistant to Dutch elm disease (*Ophiostoma ulmi*) is being grown at the Royal Botanic Garden, Edinburgh. After the disease arrived in England in the 1970s it killed an estimated 20 million English elms (*U. procera*), but the Scottish Wych elm was more genetically diverse and thus there were some individuals which were resistant. It is 16 of these apparently resistant trees that have been selected for the breeding programme.

www.wychelmproject.org

Farming fragmenting Amazonian research

The world's longest-running study of forest fragments is threatened by farming, logging and hunting, say William Laurance and Regina Luizão in an article published recently in Nature. Laurance and Luizão say the 1,000 square kilometre study area of the Biological Dynamics of Forest Fragments Project (BDFFP), two hours north of the rapidly-growing Brazilian city of Manaus, is under threat from agricultural expansion.

And government bureaucracies, they say, are either disinterested or determined to push ahead with forest

colonisation at any cost. Since the project's launch in the 1970s, say the authors, researchers have gained unparalleled insights into the ecological decay of forest fragments.

In unfragmented parts of the BDFFP study area, researchers are still able to study large predators and other animals — jaguars, pumas, eagles and tapirs — that have vanished from other important tropical research centres. The project has also played a leading educational role, providing free environmental training courses for up to 100 Latin American students, park managers and political leaders a year.

Staff and researchers are lobbying against local forest colonisation projects and trying to establish new protected areas, but according to Laurance and Luizão, saving the project is a race against the clock.

www.scidev.net

FLEGT negotiations a mixed bag

Formal FLEGT Voluntary Partnership Agreement (VPA) negotiations are now underway in Indonesia, Malaysia and Ghana, supported by the European Commission, the Netherlands and the UK respectively.

There is still no publicly agreed set of baseline principles for the negotiations and things are progressing very differently in different countries, but the Commission recently published a set of Briefing Notes setting out technical criteria for the different elements of the agreement including the legality definition, the legality assurance system (LAS) and the independent monitoring function (IM-FLEGT). In addition the Commission held a technical meeting on IM-FLEGT in May and detailed notes are available from the illegal logging website.[1]

Both Indonesia and Ghana have established multi-stakeholder negotiating teams and have progressed well in different areas – the Indonesian definition of legality has been undertaken with commitment and integrity and Ghana has made efforts to design a genuinely credible legality assurance system. However a number of key areas of concern are outstanding in both countries and also especially in Malaysia. These include the legal treatment of forest-dependent communities and the terms of reference for monitors. More fundamentally, despite an earlier commitment, Malaysia has failed to agree terms for stakeholder engagement during the VPA process and the first stakeholder consultation was a great disappointment to the civil society representatives that took part.

1 Details of national processes and civil society concerns are available at www.loggingoff.com and a range of other relevant news and information is available at www.illegal-logging.info.

www.fern.org

Forest owners begin billboard campaign

The Kyoto Forestry Association (KFA) today launched a billboard campaign to highlight its opposition to the Government's forestry policy on the ownership of carbon credits from forests planted after 1990.

The KFA believes the Government had confiscated the credits which go with the trees' ability to absorb carbon. The credits are tradable under the Kyoto Protocol and the forest owners argue that allowing them to retain ownership of the credits will slow deforestation rates as forests are converted to dairy farms.

The billboards, near Wellington and Auckland airports carry the message: Give New Zealand Forest Owners Back Our Carbon Credits and We'll Get Planting Again. They have been funded out of a voluntary $6/hectare levy on post-1990 forest owners.

KFA spokesman Roger Dickie said it was planned for the billboards to be used regularly between now and the 2008 general election, depending on whether or not the Government's proposed Electoral Finance Bill is passed in its current form. Under the proposed law, third party advertising on policy issues will be severely restricted in election year.

"This is a very important matter of public policy," Mr Dickie said. "Since the 2002 confiscation of $1.25 billion of our carbon credits, new forest planting in New Zealand has plunged to below replacement levels, and we are now experiencing deforestation for the first time in New Zealand's history. "Planting will not begin again until the confiscation is reversed. All New Zealanders need to understand this if, as a nation, we are to successfully tackle climate change and reduce our massive Kyoto deficit."

Mr Dickie said the billboards were being placed near Auckland and Wellington airports so that they would be seen by as many politicians, bureaucrats and senior journalists as possible. Mr Dickie said that while Wellington International Airport had no problem with the design of the billboard, Auckland International Airport had declined to carry politically orientated advertisements on the grounds it is partly publicly and partly privately owned. Options near to the airport are being considered by KFA, as are Christchurch options. Mr Dickie said that while KFA was not aligned to any political party, it had received strong support from the Maori, ACT, National and Green parties.

Kyoto carbon credits are earned by those individuals and businesses that sequestered carbon by planting new forestry since the Kyoto Protocol's baseline of January 1, 1990, and by those industries which have cut their carbon emissions since then.

www.stuff.co.nz

Indonesia's forests could go up in smoke

Even if they escape the chainsaw, Indonesia's embattled tropical forests face a serious threat from drought-induced fires. That's the conclusion of researchers who have been monitoring fire-damaged plots in the south of Sumatra.

Margaret Kinnaird of the Wildlife Conservation Society in New York and her colleagues began studying the tropical rainforest of the Bukit Barisan Selatan national park in 1997. That year, a severe El Niño - a warming of the eastern Pacific Ocean - brought intense drought and fires to the region.

By studying the year-by-year recovery of these plots - some of which had also been burned in an earlier El Niño in 1982 - Kinnaird and her colleagues developed a model describing how the forest regenerates. This shows that if El Niños matching the 1997 event occur twice a decade, the prospects are dim: a 46 per cent loss of forest cover over the next century, Kinnaird told the Society for Conservation Biology's meeting in Port Elizabeth, South Africa, last week.

Unfortunately, El Niños seem to be getting more frequent and severe, so this is plausible. Protecting the forests is possible, says Kinnaird. "But you've got to have good fire management. Indonesia doesn't have that."

environment.newscientist.com

Indonesia's first 'Restoration Forest' gives hope to last rainforests in Sumatra

Following a major change in Indonesia's forestry law, a ground-breaking initiative to protect and restore an area of Sumatra's remaining dry lowland rainforest has now been made possible. The Harapan Rainforest Initiative, planned and pursued for over five years by the coalition of Burung Indonesia, the RSPB (Royal Society for the Protection of Birds, UK) and BirdLife International, with support from BirdLife Partners, will establish Indonesia's first "forest ecosystem restoration concession" for the conservation and regeneration of a 101,000 hectares forest block in the lowlands of Sumatra. The change in law effectively allows for the first time, 'production forest' to be allocated for conservation and restoration.

The announcement comes just in time - the area was likely to be felled and replaced by plantations for timber or oil palm production. "Indonesia suffers from some notoriety for its rapid deforestation. However the Harapan Rainforest initiative, and the Indonesian government's support for it, could mark a turning point for the country's forests, a new hope for their conservation." said Marco Lambertini, Director of Network and Programmes for BirdLife International.

Sukianto Lusli, Executive Director of Burung Indonesia, said: "We expect big dividends for wildlife as well as for local communities. Sumatra's lowland forest is already a hotspot for rare wildlife. The restoration of the forest will help prevent forest fires which have been badly affecting local communities as well as the entire region."

The area will become a refuge for many of Sumatra's threatened birds: at least 267 bird species have been surveyed in the forest, with more surveys planned. Of these, 71 are threatened with extinction.

The Harapan Rainforest Initiative has particular significance to the conservation of Storm's Stork *Ciconia stormi*, an endangered bird species that has faced considerable declines owing to destruction of lowland forest through logging, dam construction and conversion to oil-palm plantations.

Harapan's five Vulnerable bird species will also benefit: Short-toed Coucal *Centropus bengalensis, Large-billed Blue Flycatcher Cyornis caerulatus*, Crestless Fireback *Lophura erythrophthalma*, Wallace's Hawk Eagle *Spizaetus nanus* and Large Green Pigeon *Treron capelli*. Other species for which the Harapan Rainforest will become crucial habitat include: Asian Elephant *Elephas maximus*, Malayan Tapir *Tapirus indicus*, Sun Bear *Helarctos malayanus* and Clouded Leopard *Neofelis nebulosa* - recently recognised as a distinct new cat species from the one in mainland Asia.

The Harapan Rainforest will also prove important for conservation of Critically Endangered Sumatran Tiger. 20 tigers are known to reside in the dry lowland rainforest. Graham Wynne, Chief Executive of the RSPB, said: "It is difficult to express just how significant this breakthrough is. There have been many times in the last five years when our hopes of saving Harapan Rainforest had all but ebbed away."

"Every part of Harapan Rainforest has been logged to some extent in the last 60 years and some of its species have been staring extinction in the face. But all of the forest can still recover and every single species it hosts now has a toehold on survival." he said.

Conservationists have highlighted the global significance of protecting areas of 'restoration forests' like Harapan. "Their biodiversity, their role in the mitigation of global warming as well as regulating local climate and preventing floods, make their protection relevant for both the local as well as the global community." said Lambertini. "We will work towards every success in this initiative, and hope that others follow."

www.birdlife.org

Iwokrama preparing for carbon market - Guyana

Director General of Iwokrama Dr David Singh says Iwokrama is preparing for carbon trading even though the Kyoto Protocol doesn't now assign credits for the preservation of standing forests. He said that for countries like Guyana, benefiting from carbon credits under the Kyoto Protocol was fraught with many hurdles and it was mostly the intermediary who gained.

The Clean Development Mechanism (CDM) of the Kyoto

Protocol does not speak to countries with standing forests for conservation, but for countries which engage in reforestation. But an important meeting on the Kyoto Protocol this December in Bali, Indonesia, could decide if in future there could be recognition in the protocol that standing forests should attract some form of funding for avoided deforestation.

A recent BBC report said that Papua New Guinea - heavily forested like Guyana - had proposed that rainforest protection be added to measures to prevent global warming. PNG Ambassador Robert Aisi told a recent climate meeting in Bonn, Germany, that even though a tonne of carbon saved from the atmosphere came with a price tag, there was no way developing countries could trade avoided rainforest destruction on the international market.

The Iwokrama Director General said that its carbon trading would be done under an arrangement whereby private individuals and companies would be willing to pay for the maintenance of carbon sequestration. This would be done outside the framework of the CDM and Iwokrama would be paid for such activities.

Iwokrama said on its website that while the Kyoto Protocol had created a carbon trading market, sustainable forest management and conservation of standing forests remained excluded from carbon trading under the current protocol. "Despite having a large amount of carbon stock, the argument used is that intact forests have low rates of absorption of carbon. There is therefore little economic incentive under the climate change framework that promotes better land use and land use change initiatives of intact tropical rain forests," Iwokrama said, adding that this directly contradicted Article 6 of the Convention on Biological Diversity.

Iwokrama said that as a flagship programme of the Government of Guyana and the Commonwealth, it would play a crucial role in the re-valuing of standing forests and sustainable forest management as effective climate change adaptation and mitigation measures.

According to Dr Singh, such an arrangement would not only give Iwokrama good standing with the international community, but it would also open up a fantastic opportunity to promote Guyana as a model for such arrangements.

He said that by virtue of Iwokrama going the way of carbon trading, the organisation would be seen as achieving the triple bottom line: social, economic and environmental targets.

At the moment negotiations are ongoing between Iwokrama and International Forest Products Corporation, a UK company for the commencement of the venture. The Iwokrama Board of Trustees at its meeting in London about three weeks ago had approved the opening of negotiations with IFP, a major US-owned trader of forest products. IFP is keen on purchasing and marketing under the Iwokrama brand the forest's annual sustainable timber harvest.

At the meeting, the trustees also agreed that there should be discussions with an important UK company, Carbon Capital Limited, which creates and manages investments in the carbon economy, about a possible carbon facility for Iwokrama in accordance with Guyana's national guidelines.

On its website, Iwokrama said that even if there were to be significant reduction in greenhouse gas emissions, countries would still need to cope with a changing climate for the next 40 plus years, because of emissions already put into the atmosphere.

"The future climate is already set over this time period and the consequences cannot be ignored. Businesses and the financial markets need to grasp the reality we face - that we have to both reduce our emissions and acclimatise to inevitable climate change. There is no choice between mitigation and acclimatisation - we have to pursue complementary actions on both - now," Iwokrama declared on its website.

The BBC report said that in the past the complexity of assessing the amount of rainforest destruction and any change in the rate of destruction had led to it being sidelined in the original Kyoto Protocol which would not be reviewed until 2012.

Aisi said in the BBC report, "Kyoto does not allow developing nations that reduce deforestation emissions to get credit. Kyoto unfairly discriminates against rainforested developing nations who seek to participate within the world carbon market."

It is thought that around a quarter of all greenhouse gases are attributable to rainforest destruction.

www.stabroeknews.com

US$16M Forest Conservation Fund launched in Jamaica

Jamaica's forest conservation efforts received a major boost with the recent launch of a US$16 million Forest Conservation Fund (FCF). The Fund will provide both long and short-term grants to protect and manage some of the island's forest reserves and national park as well as other designated priority sites.

The FCF will also support reforestation initiatives, management of forest reserves and other protected areas and conservation of Jamaica's biodiversity through several initiatives. These include the conducting of scientific research and biological surveys, the review and implementation of the National Forest Management and Conservation Plan, the development and implementation of a Master Plan for Protected Areas, the restoration of damaged forest ecosystems and the conduct of public education and community outreach activities.

The FCF is the result of a Debt-For-Nature Swap Agreement signed in 2004 by the Governments of Jamaica and the United States of America The Agreement followed on the enactment by the U.S. Government in 1998 of the Tropical Forest Conservation Act (TFCA) to offer eligible developing countries, options to relieve certain debt owed to the U.S., which would then be used to support local tropical forest conservation activities.

Under the Swap Agreement, the United States Government forgave US$6.5 M of Jamaica's debt. This, which when applied to the US$1.3 M paid in by The Nature Conservancy (TNC), a US-based non-governmental environmental organisation operating in Jamaica for 14 years, will result in approximately US $16 M being made available over a period of 19 years for tropical forest conservation activities in Jamaica.

Speaking at the launch of the FCF on September 19, 2006 Minister of Agriculture and Lands the Hon. Roger Clarke, said the establishment of the Fund was particularly urgent in light of the intense pressure that Jamaica's forests were under, despite the consistent effort of the local Forestry Department.

He pointed out that the indiscriminate clearing of land, slash and burn activities and increased human activity were 'all impacting negatively on Jamaica's forests'. The effect of this activity, he said, was being seen in 'the increasing incidence of landslides, flooding and contamination of our potable water resources', he said.

Minister Clarke noted that through the establishment of the Tropical Forest Conservation Fund, the United States Government had demonstrated its interest in protecting tropical forests in developing countries and in like manner, 'the launch of the FCF signalled the commitment of the Jamaican Government to preserving the island's forest resources'.

Deputy Chief of Missions at the US Embassy in Kingston James Heg, in his remarks, pointed to the fact that nearly a third of the island is covered in, 'spectacular tropical forests containing hundreds of unique species of birds and plants'. He said that Jamaica enjoyed a rich biological and cultural heritage that needed to be protected for future generations to enjoy adding that 'together we can enable Jamaica to reach its potential without losing any part of what makes it unique and special in the world'.

In his presentation, TNC's Country Director Mr. Terry Adams Williams declared that in the first five years of the Fund's operations, among the targeted achievements will be the planting of a minimum of 1 million trees across the island of Jamaica. He reiterated TNC's interest in and commitment to the maintenance and conservation of Jamaica's rich biological diversity.

Seven priority sites, spanning the island, have so far been identified under the FCA as areas where grant funding can be used to undertake tropical forest conservation activities. Of the seven, three areas are to receive urgent intervention in 2007. These areas are:

- The southern portion of the Blue and John Crow Mountains Forest Reserve and National Park. namely the Yallahs watershed;
- The Cockpit Country Forest Reserve, which spans the parishes of St.James, Trelawny, St. Elizabeth and Manchester; and
- The Upper portions of the Rio Minho Watershed.

It is envisioned that other areas will be added to the list of priority sites over time.

The Fund will be administered by a seven-member Oversight Committee, which is comprised of representatives of both private and public sector entities. Conservator of Forests, Ms. Marilyn Headley, will chair the Committee. Mr. Terry Adams Williams and Ms. Karen McDonald-Gayle will represent The Nature Conservancy and the US Government respectively on the Committee. Other members are: Mrs. Eleanor Jones of the Jamaica Institution of Environmental Professionals/Private Sector Organisation of Jamaica; Mrs. Carole Excell representing the Jamaica Protected Areas Network, Mr. Wayne Cummings of the Jamaica Hotel and Tourist Association and Mr. Devon Rowe from the Ministry of Local Government and Environment.

In an effort to ensure that funds are available for forest conservation activities beyond 2024, the Oversight Committee has allocated a portion of the debt being paid into the Fund annually by the Government of Jamaica, for the formation of an Endowment Fund. The FCF is therefore not to be a sinking Fund, but it is anticipated will continue to thrive and disburse grant monies.

Press release from Governments of Jamaica

Mapping can save forests say African scientists

Mapping and remote sensing technology can be used by developing countries to conserve forests and biodiversity, say experts. Such 'geospatial' technology is helping African countries to conserve forests and identify areas in need of intervention, said scientists at a meeting organised by the Society for Conservation GIS-Kenya in Nairobi, Kenya, in July.

Geospatial technologies include global positioning systems (GPS) for capturing basic location data, remote sensing, which uses aerial photography, and geographic information systems (GIS), which analyse data to create maps.

GIS expert Peter Ndunda, is currently running a mapping program with the nongovernmental Green Belt Movement in the Mount Kenya and Aberdares forests. He told SciDev.Net that his project has mapped these regions to determine loss in forest cover over time. "Having identified forested and non-forested areas, we have mapped out areas that need urgent intervention. With support from local communities, we have planted trees which we are monitoring using high-resolution images to determine their survival," he said.

According to Ndunda, the project has resulted in increased forest cover, improved soil quality and better management of water resources. Planting trees in higher ground, from which water flows down to rivers, helps stabilise the local climate and regulate water flows.

He added that by rehabilitating the forests, ecosystems have been preserved. And involving local communities in forest management has provided them with an income, along with education in the sustainable use of watersheds. Ndunda says the project will soon be extended to the Cherengany, Mau and Mount Elgon forests in Kenya, as well as to the Congo Basin forest.

Forest communities themselves are also using technology to monitor their forest. In anticipation of payments under the Clean Development Mechanisms of the Kyoto Protocol, communities near the Aberdares and Mount Kenya forests are assessing the number, species and width of trees, along with the amount of canopy cover, to determine the amount of carbon sequestered.

The Kenya-based Regional Centre for Mapping of Resources for Development is involved in a project with the United Nations Environment Programme using GPS to map forested and non-forested areas in the Mount Kenya forest area. They are mapping vegetation, forest cover, infrastructure and tourist attractions to enhance sustainable use of forest resources and for use in community education.

The National Museums of Kenya are also using geospatial technology to monitor bird biodiversity and elsewhere in Africa, national park services in Mauritania and Tanzania are using satellite imaging to examine crop-damaging locust population levels.

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Poverty and corruption fuel tropical forest fires

Tropical countries with widespread poverty and corruption are less effective at protecting their forests from fire, conclude the authors of new research. The study was led by the Smithsonian Tropical Research Institute in Panama and was published in the July issue of the journal Ecological Applications.

S. Joseph Wright and colleagues analysed satellite data from NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) between 2002 and 2004. They looked at the occurrence of fires in 823 tropical and subtropical forest reserves in 37 countries.

The background level of fires in moist forests is normally low, so fires are a good indicator of human activity — such as timber extraction, land clearing and conversion of land for agricultural use — and therefore of the effectiveness of park management in protecting reserves. The researchers compared the rates of fire occurrence in protected areas with those in unprotected 'buffer zones' surrounding the reserves.

The rate of fire occurrence was also compared with poverty levels and political stability in the same countries, obtained using information from United Nations records, the civil society organisation Transparency International and the CIA World Fact Book. Most tropical countries have reserves to protect their forests, but whether they can enforce boundaries and protect forest resources depends on their political and economic wherewithal, conclude the authors.

Reserves in Costa Rica, Jamaica, Malaysia and Taiwan are most effective at preventing forest fires and — as the authors point out — they are among the better-off and least corrupt of the countries in the study. Poorer countries beset by corruption, such as Cambodia, Guatemala, Paraguay and Sierra Leone, were the least effective at preventing forest fires.

"This research is a first step towards a long-term monitoring of the effectiveness of national parks and other protected areas in controlling deforestation," Arturo Sanchez-Azofeifa of the University of Alberta in Canada, one of the researchers, told SciDev.Net. He hopes that forest managers will use the research to evaluate the effectiveness of buffer zones around parks and as a tool for monitoring the environment. "Developing countries have significant conservation needs. Not only from the point of creating parks but also from the point of view of monitoring their effectiveness," Sanchez-Azofeifa added.

The researchers have also created freely available online fire-detection records for 3,964 tropical reserves and buffer zones. They hope that researchers familiar with particular reserves will use the data to understand the causes of fires and so help to prevent them.

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Pre-Historic forest discovered in Hungary

Archeologists have found an eight-million-year old forest of cypresses, well preserved and not fossilized, in Bukkabrany in northeastern Hungary. Tamas Pusztai, the deputy director and head of the Archaeological Department at the local Otto Herman Museum who oversaw the excavation, said the discovery is exceptional as the trees kept their wooden structure, they neither turned into coal nor were petrified.

Archeologists announced the find last week after uncovering the mysterious forest of Taxodiums, a kind of swamp cypress, after a few days of digging. They said that their finding could provide clues about the climate of pre-historic times.

Miners working in a brown coal mine had first uncovered several tree trunks that had been turned into coal, a common occurrence in this kind of environment. "But further down, we found 16 trees that had remained where they had grown some eight million years ago and that are very well preserved," Pusztai said. He added, "All that is left of the trees is their trunks, two to three meters in diameter and six meters in height, although the original Taxodiums must have reached to between 30 to 40 meters."

The trees date back to the late Miocene geological period. During the period, which began over 10 million years ago, the region was covered by a giant lake with muddy and marshy shores, Lake Pannon.

The exceptional state of preservation of the trees is due to a sudden sandstorm which covered the forest (with sand) up to a height of six meters. For the Bukkabrany site, between 40 and 50 million forint ($220,000-270,000) would be needed to preserve the Taxodiums, scientists said.

Hungarian Environment Minister Gabor Fodor has said that the Budapest government will contribute millions of dollars to preserve the trees. A similar forest was already found in Japan, where archeologists preserved it in a cement sarcophagus.

www.alalam.ir

Salvage logging from burned forests worsens later fires

The logging industry has had its fingers burned. Turning dead trees into logs after forest fires seems to exacerbate forest damage in any subsequent fires.

"For a long time there was a perception that by salvage-logging fire-killed trees, you would be removing a lot of potential fuel for future fires," says Jonathan Thompson of Oregon State University in Corvallis. The logging industry is keen on salvage logging because commercially valuable trees such as conifers can be planted.

Thompson and colleagues studied before and after satellite images of two large fires in south-west Oregon. The 2002 Biscuit fire engulfed more than 200,000 hectares, over 18,000 of which had already been burned in the 1987 Silver fire. In the three years after the Silver fire, more than 800 hectares were logged to salvage any wood that could be sold, and the land was replanted with conifers. The team discovered that

areas logged for salvage burned between 16 and 61 per cent more severely during a second fire than areas left to regrow naturally. "Areas logged for salvage burned 16 to 60 per cent more severely in a second fire"

Thompson now says this type of forest management should not be used in an attempt to limit the risk of future fires, although he says it may still have economic value. The satellite data wasn't detailed enough to allow the team to determine whether it was the logging or the replanting that made the second fire worse in certain areas. Salvage-logging operations can leave a lot of the higher branches on the ground, where they can fuel future fires, says Thompson, but it is difficult to say how much of an effect this would have had 15 years later.

He says it is more likely that the conifers which replaced the original forest provided a homogenous fuel for the 2002 fire, causing replanted areas to burn more fiercely.

environment.newscientist.com

'Sex Tree' and other medicinal plants near extinction in Uganda

A short, scrawny bush found deep i n Uganda's rain forest is rapidly approaching extinction as poachers rush to harvest it for its purported aphrodisiac properties, scientists say.

The so-called sex tree, *Citropsis articulata,* is quickly disappearing from Uganda's Mabira Forest Reserve, one of the country's last remaining rain forests, because its roots are believed to cure impotence, experts said at a recent symposium in Kampala.

In addition to the sex tree, other medicinal plant species such as *Prunus africana,* a tree commonly used to treat malaria and some forms of cancer, are also being depleted, said Mauda Kamatenesi, a botanist at Uganda's Makarere University. "In a few years many medicinal plants will be very scarce in Ugandan forests," Kamatenesi said.

Loss of the plants would not only do irreversible damage to the rain forest, she said, but it would also deprive scientists of the opportunity to the study the plants' possible medicinal properties. "The [sex] tree may have other medicinal values apart from treating sexual impotence, and we are losing out if we let these plants go extinct without doing more research," Kamatenesi said. "The people say that the medicines work."

The plants' extinction would also take a toll on local Ugandans who have been using the trees as herbal cures for generations. Ibrahim Senfuma, a bird-hunting guide who lives near the forest reserve, said he and his neighbors often take the *Pronus africana* plant to boost immunity and *Citropsis articulata* to enhance sex drive. The leaves and roots of the plants are chewed or boiled for tea, he explained. "If these plants are lost, it would be a burden," Senfuma said. "The forest caters to many people."

The depletion of medicinal plants is not the only threat the Mabira forest is facing. More than a quarter of the rain forest is in danger of being cleared in order to make way for a sugarcane plantation, if a new government plan is approved.

Last year President Yoweri Museveni ordered a study into the feasibility of clearing 17,000 acres (7,000 hectares) of the forest after a sugarcane grower applied to the government to expand its operations.

Museveni's action angered officials at the National Forestry Authority (NFA)—the agency that oversees the forest reserve—as well as Mabira residents and other figures in Museveni's government. Since last autumn there have been a number of protests against the proposed expansion, including a violent rally this March that resulted in three deaths.

Residents told National Geographic News that the forest provides livelihoods, food, and shelter for the surrounding communities. "If they chop down all the trees, where will we get our medicine?" asked Faziira Nakalama, a domestic worker who lives near the forest. "If the forest is cut down, we would lose access to many things we need," added Henry Lubega, a construction worker.

Museveni's administration has countered that jobs created by the sugar plantation would outweigh losses caused by the clearing of forest land. "Is Uganda going to depend on firewood forever?" Museveni's press secretary, Tamale Mirundi, said to National Geographic News, in reference to the standard of living. Many investors are interested in developing Uganda, he said, and it would be a mistake not to take advantage of an opportunity to modernize the country.

"It is a question of utilizing resources," Mirundi said.

news.nationalgeographic.com

Siberian forest fires 'driven by climate change'

Forest fires are occurring more frequently in Siberia as a result of climate change, a new study claims. Last century a typical forest in Siberia had about 100 years to recover before it burned again, but research has found that fires are now blighting the forests every 65 years.

Coinciding with this increase is a rise in Siberian temperatures of two degrees C; about twice as fast as the global average. In 2003, 38,000 km^2 of forest was destroyed by extreme fires, with smoke plumes so huge that the air pollution reached the US. Spring is also coming earlier on in the year as a result of global warming; from 1982 to 1999 almost all Siberian ecosystems showed an earlier onset of spring.

To monitor the effects of climate change scientists observed 18 years of satellite images from the region. They found that the strongest advance of spring was in urban areas (0.74 days advance per year) and broadleaf forests (0.46 d/a).

"Central Siberia has a more continental climate. The changes in the timing of spring and also in fire occurrence are linked to temperature changes and a climate pattern that scientists call the Arctic oscillation," said Professor Heiko Balzter from the University of Leicester. "Towards the east Siberian coast the Pacific plays a more important role, and the El Niño phenomenon together with low rainfall determines what happens to the forest."

www.inthenews.co.uk

The CFA

The Commonwealth Forestry Association

The Commonwealth Forestry Association (CFA) is the world's longest established international forestry organization, tracing its history back to 1921. Today it unites foresters, scientists, students, NGOs and policy makers throughout the world in a unique international network that provides professional support to its members and forms a key element of civil society.

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