

CFA Newsletter



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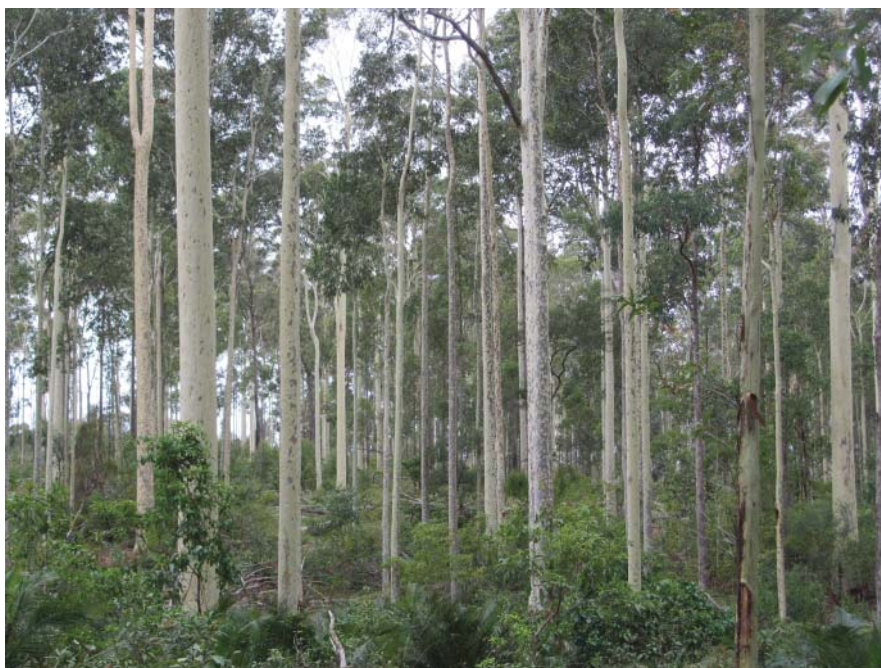
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Around the World

Government support for forestry in Australia



Challenging times ahead for the Australian forestry sector

In September 2013, the Australian people elected a new Liberal-National Party Coalition government led by Tony Abbott to govern Australia for the next 3 years. Under the Australian Constitution much of the responsibility for forest land management rests with the State and Territory governments. However, the national government coordinates national forest policy and has responsibility for international forest policy and matters of national environmental significance. The new Coalition Government has a policy that aims to achieve a strong and sustainable forest industry for Australia.

It is a sad reality that the Australian forestry sector has languished in the past 5 years. At present there is virtually no

new investment in plantations, in fact in 2011–12 Australia's plantation estate decreased by 4000 hectares. Many of the wood processors and manufacturers in both the native hardwood and exotic softwood sectors are finding it extremely challenging to remain commercially viable, with two major wood processors announcing significant reductions in their workforces in June 2013. Also the Regional Forest Agreements, which were designed to scientifically determine the balance of native forests set aside for conservation and those available for timber production in order to provide long term resource security for the forest industries, are due to expire from 2017.

In November of 2011, the House of Representatives Standing Committee on

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The views expressed are not necessarily those of the CFA.

Agriculture, Resources, Fisheries and Forestry published the report¹ of its inquiry into the Australian forest industry entitled "Seeing the Forest through the Trees". The report addressed most of the issues facing the Australian forest industries and made 19 recommendations, covering the assessment of wood demand and supply, the role of wood products in climate change mitigation, the need for renewal of the 20 year Regional Forest Agreements (a major undertaking from the 1991 National Forest Policy Statement), the incentives for encouraging plantations, and research and development.



In June of 2013, the then Gillard Labor Government published its response² to the Standing Committee Inquiry, which provided an indication of what actions the Government intended to take to address each of the recommendations. The response indicated that the Government agreed in principle, agreed in part or disagreed with the various recommendations. For the most part, the responses indicated ongoing support for the existing policy mechanisms, such as the 1991 National Forest Policy Statement, the 2020 Vision for Plantations (revised in 2002) and the 2005 Farm Forestry National Action Statement, without really committing to any new policies or programs to support the Australian forest industries. For instance, in relation to the recommendation 11 on the need for measures to support the expansion of long-rotation plantations, the response acknowledges the lack of investor confidence in the current Managed Investment Scheme mechanism for planted forests, but proposed to continue to rely on the existing policy mechanisms rather than to further consider the suggested policy reforms. In addition, the then Labor government did not agree to the

Committee's recommendation that, in a revision of the Renewable Energy Target Scheme, bioenergy sourced from native forest biomass should qualify as renewable energy where it is a true waste product of timber harvesting operations. This policy direction means that Australia is somewhat out of step with the policies of many other countries (such as in Europe) where native timbers can be used to produce bioenergy.

Funding for forest research and development has been in decline in Australia in recent years, exacerbated by conclusion of the funding for the Cooperative Research Centre for Forestry, and more recently the linkages between forest science and forest policy have been weakened. The Forestry and Forest Products Committee, which is the peak government forest policy body under the Ministerial Council structure, recently decided to cease its formal linkage with the International Union of Forest Research Organisations (IUFRO), due to its declining involvement in forest research in recent years. IUFRO is an important international network of forest scientists, which promotes global cooperation in forest-related research and Australia has much to contribute in this area. In the past, the Forestry and Forest Products Committee coordinated the sharing of information on forestry research by Australian scientists through the Research Priorities and Co-ordination Committee (RPCC) and a series of Forestry Research Working Groups. These arrangements not only enabled scientists across Australia to interact with each other on a regular basis and create synergies, but they also enabled scientists to contribute to the national forest policy deliberations. The Forestry and Forest Products Committee has also disbanded the RPCC and the Research Working Groups. While forest policy decisions are not always based on or even informed by science, it will be a bad outcome if Australian forest policy makers no longer have an effective mechanism that facilitates the active inputs of scientists into their future policy deliberations.

So what then does the future hold under the new Australian Government's forestry policy?

The Coalition forestry policy seeks to capitalise on the multiple benefits of a competitive, sustainable and vibrant forestry industry, indicating that the sector should be supported and appropriately regulated by the Commonwealth government rather than being vilified and undermined through government policies. There are a number of key components to the policy including:

- the commitment to establish a 20-year rolling life to each of the Regional Forest Agreements and to provide resource security and a stable investment environment to the forest industry;
- implementing a National Bushfire Mitigation Programme including long term bushfire mitigation strategies and better fuel reduction programmes;
- reversing the exclusion of native forest sourced wood waste as an eligible source of energy for Renewable Energy Certificates; and
- establishing a forest industry advisory council, co-chaired by an industry leader and the Minister for Agriculture, Fisheries and Forestry.

Tony Bartlett

CFA Governing Council
Canberra, Australia

¹ http://www.aph.gov.au/parliamentary_business/committees/house_of_representatives_committees?url=arff/forestry/report.htm

² http://www.aph.gov.au/parliamentary_business/committees/house_of_representatives_committees?url=arff/reports.htm

Association news

CFA Young Forester Award winner enjoying his work placement

The winner of the CFA Young Forester Award, Tololupe Daramola from Nigeria, started his work placement with the University of British Columbia, Canada, in September. He has carried out a wide range of activities during his training focusing on learning new techniques for forest management. You can read more about his experiences through his weekly diary published on our website.

Applications for the 2014 Young Forester Award will close on January 1st.



Schlich Medal presented in Canada

The Canadian Institute of Forestry/Institut forestier du Canada (CIF-IFC) presented the internationally respected Schlich Medal to Mr. Jeff Sansome of Saint George's, Newfoundland, Canada in September.

The Schlich Medal was established by the CFA in memory of Sir William Schlich, who was Inspector General of Forests in India and the first Professor of Forestry at Oxford University, founding the Forestry School there in 1905. The Institute is entrusted to present the award to an outstanding student at a Canadian university or college each year.

This year's recipient, Mr. Jeff Sansome is highly deserving of this honour. Jeff is currently in the process of completing the forest resource technician program at the College of the North Atlantic. He is also supporting a new family, and despite the many demands on his time, he is near the top of his class in academics. He chose to do the forest resource technician program primarily as a result of his love of the outdoors and everything to do with nature. Jeff hopes to use the knowledge gained from the programme to continue his education in natural resource management and conservation.

The Canadian Institute of Forestry was established in 1908 and currently has over 2300 members. The Institute is the

national voice of forest practitioners, promoting science based sustainable forest management, public awareness of interdisciplinary forestry, and a better understanding of good forest stewardship.



Schlich Forestry Medal winner Jeff Sansome (right)

Send us a photo of your forest and win a Nikon camera!

The CFA in partnership with the Commonwealth Woods, a legacy project of the 2014 Commonwealth Games to be held in Glasgow, is running the **Commonwealth Woods Photographic Competition** to show the diversity of forests throughout the Commonwealth. The competition is open to everyone, and the 25 best photographs will be exhibited in Glasgow during the Games and will feature on the official Commonwealth Woods website. In addition, the photographer who takes the best photo as judged by our independent panel will win a **Nikon D3100 digital SLR camera**.

Photographs can depict any aspect of trees, woodlands or forests but we are particularly keen to see images of how people use forests – for production of wood, collection of NTFPs, as an educational resource, for recreation, or any other use you can think of! For an idea of the standard we are seeking take a look at our 'Photo Gallery' on our website.

Please send your photos to cfa@cfa-international.org. The competition will close on 1st January 2014.

Good luck!

Forest Scenes

Forest Types of India – Revisited



Pinus gerardiana Kinnaur



Coniferous forest

Sir H.G. Champion made the first attempt to classify India's forests through preliminary classification and compiled his monumental work 'Preliminary Survey of Forest Type of India and Burma' in 1936. He revised his work with S.K. Seth and published 'A Revised Survey of the Forest Types of India' in 1968 at which point India's forests were divided into 16 major forest types and about 221 sub type groups. Due to the complexity and lack of practical application of this system a Task Force was constituted in 2011 under the leadership of the Director General, Indian Council of Forestry Research and Education (ICFRE), Dehradun, to undertake a comprehensive study on 'Forest Types of India'. The Task Force consisted of scientists/researchers from regional institutes/centres of ICFRE and foresters from State Forest Departments. More than 150 scientists and 1800 researchers from the ICFRE regional institutes and state forest departments were involved in conducting the field surveys of different forest types across the country.

The field survey covered more than 200 forest types and subtypes distributed across the country representing very diverse climatic and edaphic conditions. Data on stand condition,

physiographical features such as altitude, aspect, slope gradient, regeneration status of main tree species, tree diameter at breast height of 1.37m, stand density (trees/ha), basal area and stand composition were collected from each sample plot. The vegetational data collected from the fields were quantitatively analyzed for abundance, density, relative frequency, relative density and relative dominance, importance value index, species diversity index and similarity index. Meteorological data of more than 90 years of the entire country was collected from the India Meteorological Department (IMD) and analyzed to capture the trends of climate change and relate the impacts of climate change variables to the changes in the vegetation and corresponding forest types.

There have been considerable climate change impacts on the vegetation composition, particularly on the alpine flora. The Himalayan flora assessment from the current study has indicated very significant changes in the vegetation composition and their distribution pattern. The lower Himalayan forests which were occupied by the *Pinus roxburghii* due to disturbances is now found either in low proportion or completely absent from the sites. *Pinus wallichiana* found in the higher elevations up to

2750m is now found in still higher elevations up to 3400m indicating the shift in the tree lines towards higher elevations. The change may be climate induced due to the sites becoming warmer. The change in the rainfall pattern in the north eastern India has also shown some significant changes in the species composition wherein more evergreen species are becoming dominant in the semi-evergreen and deciduous forest types. The increased wetness and reduction in the dry period has contributed for such a change. Similar to Himalayas the Western Ghats also have shown some evidences of vegetation changes at the species level. Though it is difficult to establish direct correlations with the climate change and the vegetation, the broader indications are available to relate the species composition in the most fragile ecosystems which have very narrow range of ecological amplitude. The shoals and the grass lands have also shown the evidence of changing species composition.



Rhizophora apiculata

The study has reported many changes occurring at species and forest sub-types levels influenced by number of factors including management interventions, anthropogenic and climatic changes. The species level changes were observed largely in Sal (*Shorea robusta*), Teak (*Tectona grandis*) and Bamboo forests with regard to their distribution and species density. The study has also reported the absence of *Tectona grandis* from very moist and moist teak sub-type and occurrence of many moist deciduous and semi-evergreen species. In central India, the low rainfall regime has shown the decline of *Shorea robusta* and occurrence of dry deciduous species. Similar to these major species, many species in different forest types also have responded differently and have changed their mode of adaptations, regeneration and distribution under varying macro environmental conditions as seen in the changed status of these species. The changes in the species composition were observed at the forest

sub-types levels, specifically in highly sensitive ecosystems like sholas and tropical evergreen forest types. The study has also reported the dominance of moist deciduous species over the evergreen species in northern parts of the Western Ghats due to increasing dry periods.



Western alluvium plains sal forests

A modified forest type's classification was proposed by the Task Force reflecting the ecological, climatic, bio-geographic and edaphic influence on the vegetation composition and stand formation. The new proposed classification consists of 10 major forest type groups and 48 sub-group types to reduce redundancy, overlapping and ease of functioning for practicing foresters in the field. The study also highlights the need for forest managers to concentrate on working for appropriate climatic adaptation strategies for the forests, as many of the forests (especially in the temperate region) are moving towards xeric conditions. The outline of proposed classification of forest types of India is as follows:

Major forest type Group
I. Tropical Wet Evergreen Forests
II. Tropical Semi-evergreen Forests
Group III. Tropical Moist Deciduous Forests
Group IV Littoral and swamp forests
Group V. Dry Deciduous Forests
Group VI. Dry Tropical Thorn and Scrub Forests
Group VII. Southern Montane Broadleaved Forests
Group VIII. Northern Sub-tropical Broadleaved and Coniferous Forests
Group IX. Himalayan Temperate Forests
Group X. Alpine Forests

Dr. V. K. Bahuguna

Former Director General
Indian Council of Forestry Research and Education,
Dehradun, INDIA

UBC and MasterCard to fund African students



The MasterCard Foundation, which is based in Canada, is funding full scholarships for students from Africa to attend the University of British Columbia, either as undergraduates or to enroll in UBC's professional Master's programs, including Forestry.

For September 2014 entry, students can apply to any of UBC's undergraduate programs. These cover Forest Resources Management, Forest Sciences, Natural Resources Conservation

and Wood Products Processing. Details of these programs, and the various specializations within them, are available at <http://www.forestry.ubc.ca/undergraduate/prospective/degree-programs/>. These are four-year programs, and the Foundation will cover all travel, living and tuition costs. It will also cover return travel costs during the summer breaks – students are expected to return to Africa to undertake volunteer or paid work opportunities during the summers. Students can also apply for UBC's one-year Master's program in Sustainable Forest Management, details of which are provided at: <http://cbm.forestry.ubc.ca/master-of-sustainable-forest-management-msfm-degree/>.

Details of the Mastercard Program at the University of British Columbia, together with application forms, are available at: <http://internationalscholars.ubc.ca/mastercardfoundation/>. Please note that the program is aimed at helping economically disadvantaged students who have the potential to return to their home regions to help reduce poverty through providing leadership.

45 years of research in the Usutu Forest, Swaziland



Planting a ceremonial Natal mahogany tree outside the Usutu office at Bunya in Swaziland'- Julian Evans (right) and Milton Nkhambule.

In April this year, Professor Julian Evans OBE FICFor, a past chair of CFA, concluded 45 years of research into the long-term productivity of pine plantations in Swaziland. The plantations, owned by SAPPI Usutu, have supplied pulpwood and only pulpwood continuously from 1962 to 2009 to the Kraft pulp mill at the heart of the forest. Sadly, owing to

a huge forest fire destroying a significant proportion of the growing stock, the mill has been closed.

Growing pine, mainly *Pinus patula*, for wood pulp required short rotations (14–16 years) and a clearfelling and replanting silviculture. The soils of the highveld in Swaziland are nutritionally poor, though deeply rootable, and thus a good place where to investigate whether crop after crop of pine could be grown sustainably without loss of yield. Research into what was dubbed the 'second-rotation decline problem' began in 1968 with support from the British government, the then Ministry of Overseas Development. Since then assessments have been made at intervals, with further support from the British Government (DFID) and, latterly from SAPPI, such that the productivity, based on a network of sample plots, has been recorded for the second, third and fourth rotations from exactly the same sites.

This long-term study has been reported several times in the pages of CFA's *International Forestry Review*, most recently in 2005¹. The final assessments made in April 2013 in mature fourth rotation stands confirmed the earlier data and permit an unequivocal conclusion:

Over most of the Usutu Forest the productivity of each successive rotation is equal or superior to its predecessor. This has been achieved without recourse to fertilisers.

Genetic improvement of planting stock has only occurred to a significant extent in the fourth rotation and appears to have led to a 6–8 per cent uplift. The one proviso to these data is that on the 12 per cent of the forest, where the underlying gabbro geology led to soils of very low phosphate status, significant

¹ Evans, J (2005) Growth rates over four rotations of pine in Swaziland. *International Forestry Review* 7: 305–310.

second rotation yield decline did occur. This was readily corrected by a single fertiliser application and has not been present in third and fourth rotations.

The data from Usutu confirm that plantation forestry is a sustainable silviculture. This shouldn't surprise us since unlike farmers harvesting the nutrient rich part of their crops – ear of corn, the potato tuber, the fruit – to feed us, foresters leave behind on site the leaves, needles, cones, fruits, twigs and branches. Only where this is not done, such as the old practice of litter raking, are yield problems usually found to occur. (There will, of course, be exceptions such as extremely infertile sands, heavy clays that compact badly during harvesting, and a few

other marginal sites, but the general assertion of sustainability is valid.)

Since we are increasingly reliant on planted forests for wood products² this sustainability research is a timely reminder that, provided good husbandry is practised, the question of maintaining productivity in successive rotations should not arise.

Julian Evans
CFA Vice-President

² Evans, J ed. (2009) *Planted Forests – Uses, Impact and Sustainability*. UN FAO, Rome and CABI, Wallingford.

Illegal invaders threaten sixteen years of responsible forest management in Copén, Honduras



Community members and an army officer survey the destruction

The community of Copén, Iruya municipality in the department of Colón, Honduras, has been recognized at a local, national, and international level for its responsible forest management. Located near the UNESCO World Heritage site Río Plátano Biosphere Reserve and within the Sierra Río Tinto National Park, the community received Forest Stewardship Council certification in 1998 with the support of the Italian nonprofit COSPE for its management of Bigleaf Mahogany (*Swietenia macrophylla*). Working in close collaboration with the US-based nonprofit GreenWood and Honduran counterpart Fundación Madera Verde (FMV), it has been exporting high-value *Swietenia macrophylla* guitar parts to Taylor guitars and other companies since 2001. A state-of-the-art chain-of-custody system was launched in 2008 with the support of GreenWood, FMV and the United States Forest Service, International Programs (USFS), using Nomad® handheld computers and Helveta® software that allow harvested wood to be tracked from source to market. The community is currently assisted by GreenWood and FMV, with financial support from USFS, USAID-ProParque and the Danish nonprofit Forests of the World. Between 2007 and 2012 Copén was able to invest more than \$47,000 in community development, including the procurement of production equipment (bandsaw mill and chainsaws),

accident insurance, forest protection, and a variety of beneficial social and infrastructure projects. The community was recognized for its sustainable management in 2010 by the United Nations Food and Agriculture Organization (FAO) as one of 18 “Model Forests” in Latin America.



The Copén Forest Management Area at the central-west corner of the Sierra Río Tinto National Park nuclear zone, department of Colón (Coca/Terra-i, 2013).

Such continuing investments, however, are directly threatened by recent incursions into Copén's legal harvest areas, which are granted to the community through a 40-year usufruct agreement with the Government of Honduras. The community undertakes periodic surveillance surveys to ensure the viability of the forest and harvesting operation, and recent analysis of ground and satellite data indicate significant and unchecked advance of illegal settlers in Copén's largest forest management area, Sanguijuelosa Forest (2,566 ha). Using MODIS satellite data, the first observed incursion was recorded by Terra-i in 2008 in the southwest corner of Sanguijuelosa, with encroachment of the Sierra Río Tinto National Park occurring on all sides since 2004 and intensifying in 2006 and 2011. A Quickbird satellite image (fig. 2) showed 109 ha of newly-deforested clearings in 30 separate “descombros.” Ground-observed activities include subsistence farming, cattle ranching, and some commercial farming (e.g. coffee). In addition, activities were observed that exerted significant ecological effects while maintaining a mostly-intact forest canopy, such as low-intensity timber harvesting and wildcat gold mining.

Significant perforation of illegal clearings and settlements is evident in Sanguijuelosa harvest area; cleared areas have since expanded and joined.



Largest cleared area in Sanguijuelosa forest (February 2013).

A variety of challenges thwart the reversal of illegal settlement. The most pernicious is a widespread culture of violent crime and corruption. Honduras has the world's highest murder rate, which has increased steadily since 2007. This pervasive lawlessness and lack of local governance, in combination with cumbersome bureaucratic processes and the remote location, has led to a growing skepticism among Copén community members that legal efforts to expel invaders will be effective. Yet, they are ill-equipped, untrained and wholly unprepared to undertake such a dangerous responsibility without adequate institutional support. Copén community members are committed to re-establishing the boundaries of their remaining forest, but possess neither the capacity nor the authority to enforce them.

These obstacles are compounded by the growing regional prevalence of drug trafficking, which has historically been associated with illegal logging and is suspected to be financing settlement activities¹. Directly, money laundering is believed to underwrite agricultural conversion, while indirect financing occurs as settlers "improve" forest land with the hope of selling later at a profit to entities that are widely presumed to be linked to drug interests. The United States became prominently involved in drug enforcement in the region in 2012 but has since reduced its profile after being criticized for heavy-handed tactics². Until the influence of these powerful financial interests can be evaluated and mitigated, it will be difficult to address the ecological effects of their underlying influence in the region.

A more recent factor is the growth of unregulated gold mining. Artisanal mining commenced in the region in 2011, as dramatic increases in gold prices³ enticed entrepreneurs seeking

profits. Mining has intensified in the past year, with the introduction of excavators and heavy equipment, and more prospectors are arriving daily. Small-scale gold panning was observed within Sanguijuelosa Forest, causing damage to stream beds, with unknown effects on ecosystems and water supply. With a growing regional population and high levels of poverty, it will be difficult to deter such activities if enforcement remains nonexistent and few viable economic alternatives are available.

CONCLUSIONS

The community of Copén is a prime example of successful collaboration between local communities, governments and international NGOs and private businesses to foster empowerment, independence and sustainable development. However, all of these gains are now threatened, and community members are becoming increasingly frustrated and pessimistic about their long-range prospects for successful forest management.

Urgent and effective action is needed by the Honduran government to ensure that laws are enforced and Copén's legal area is adequately protected. Such an effort is crucial not only for the immediate protection of Sanguijuelosa but as a regional precedent. Nine other communities in the Río Plátano Biosphere Reserve hold legal management plans, and there are many more throughout the country. If these communities are unable to derive benefits of protection and sustainable forestry commensurate with the time and expense of developing and renewing their management plans, they will be far less likely to adhere to regulatory requirements. By contrast, institutionally-supported surveillance tours could greatly bolster effective control by local communities and would help to solidify an emerging culture of legal forest management and sustainable development.

Replanting will be important once the land base has been secured and illegal incursions are either stabilized or reversed. In fact, several community members in Copén have already participated in planting efforts and a wide variety of agroforestry strategies have been developed for Mahogany⁴, which could be attempted here. REDD+ has been increasingly emphasized as an economic mechanism that could be applied in Honduras⁵. However, any proactive recovery measures are contingent upon effective law enforcement, which must take place immediately for the Sanguijuelosa forest to maintain its viability as a secure management area. It is the authors' considered judgment that, at the current rate of advancing clearing and settlement, effective action must take place within two years to avoid the de facto loss of this managed forest.

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¹ Richards, M.; Wells, A.; Del Gatto, F.; Contreras-Hermosilla, A.; Pommier, D. (2003). Impacts of illegality and barriers to legality: a diagnostic analysis of illegal in Honduras and Nicaragua. *International Forestry Review* 5 (September 2003): 282–292.

² Cave, D.; Thompson, G. *The New York Times*, October 13, 2012. U.S. Rethinks a Drug War After Deaths in Honduras. Available: <http://www.nytimes.com/2012/10/13/world/americas/in-honduras-deaths-make-us-rethink-drug-war.html?pagewanted=all> [last visited March 11 2013].

³ [no author given]. Gold Price: Where the World Checks the Gold Price. Available: www.goldprice.org. [last visited March 11, 2013]

⁴ Mayhew, J.E.; Newton, A.C. *The Silviculture of Mahogany*. London: CABI (eds.) 226 pp.

⁵ Reyes, S.R.R. *Programa REDD CCAD-GIZ: RESUMEN DE LA CONSULTORIA*. Metodología para la Identificación y Priorización Preliminar de Áreas Potenciales para Desarrollar Proyectos Piloto bajo la Iniciativa REDD en los países miembros de la CCAD. País: HONDURAS. 2000.

Muguga Ecosystem Research Community Forest Association

Muguga Ecosystem Research Community Forest Association (MERCFA) is a group formed and registered by community members living adjacent Muguga forest in Central Highlands Forest Conservancy, Kenya. MERCFA formed after the community realized that the goods and services they enjoyed from the forest over the last forty years have been reduced. The goods/services they collected from the forest were firewood, building materials herbal medicine, fodder and services for a clean environment, education, picnic and other cultural festivities held within the forest. This was also favoured by the Kenya Government who passed a Forest Act in 2005 allowing community participation in forest management which recognised the community Forest Association.

MERCFA operates within Muguga forest station in Kiambu County, 25 km North of Nairobi in Kenya. Muguga forest covers 600 hectares of both indigenous and exotic tree species and supports over 40,000 persons in adjacent areas. Management of Muguga forest is shared by the Kenya Forest Service (KFS) on industrial plantations while the Kenya Forestry Research Institute (KEFRI) manages research demonstration plots including two remnant indigenous forest plots (Gachuthi-30 and Gatuikira-17 hectares).



Community farmlands neighboring Gachuthi natural forest

MERCFA currently has 180 members from the adjacent villages of Kerwa, Nderi, Kikuyu, Thigio and Karai-Nachu. MERCFA's objective is to empower communities on sustainable forest management, improved income and food security through adoption of best forestry and farm management practices.

MERCFA's vision is to be a leading institution in community empowerment on improved environment for sustainable development and poverty reduction. Our mission is to promote sustainable environmental management through advocacy, networking, partnership development and information dissemination for improved environment and community livelihood.

MERCFA activities include empowering communities using public meetings, open days and field days. MERCFA also operates a tree nursery which has over 20,000 seedlings of indigenous and exotic species for promoting community forestry by reducing pressure on our forests and also contributing to Vision 2030 of realizing 10% tree cover.



Community managed tree nursery



Energy saving jiko (Kuni mbili)

MERCFA promotes forest conservation by the use of Energy saving jikos in reducing firewood usage, woodlot establishment and forest protection through community policing. It appreciates that over 80% of domestic energy needs come from firewood. The group also promotes conservation agriculture and tree growing as income generating activities. The group collaborates with other stakeholders- KEFRI, KFS, farmers and six local schools with over 3000 students.



Involving schools in tree planting



Establishing Woodlots by community



Involving Faith based organizations

MERCFA keeps records of activities (work plans, reports and photos) in print and electronic formats

MERCFA faces several challenges. The group is young, operates in a small sized forest with insufficient resources to meet demands for the increasing human population. Also inadequate knowledge and information on forest governing policies (Environment Act 1999, Forests Act 2005 among others) results in conflicts among stakeholders. In addition, lack of a Participatory Forest Management plan to guide us on cost and benefit sharing of the available resources adds more conflicts.

Forest degradation through soil erosion, diminishing wildlife, pollution from illegal dumping/waste disposal contribute highly to adverse effects of climate change. Inadequate income generating activities, unemployment especially amongst the youth (living below a dollar per day) results to poverty threatening community livelihoods.

Our way forward is to empower communities on forest and farm management, create awareness on governing policies and legislations, develop Participatory Forest Management Plan

and Agreement to guide on sharing roles, authority, control, cost and benefit sharing of resources. MERCFA also aims to build capacities for communities in Participatory Forest Management, promote environmentally friendly income generating activities for sustainable development, introduce drought tolerant trees (e.g. *Melia volkensii*) in dry areas of Ndeiya- Nachu, promote health management programmes, promote energy saving jikos, charcoal briquetting, biogas and solar power in supporting forest conservation, conduct exchange visits to other institutions for partnership and information sharing, establish a community resource center for easy access to information on sustainable development and climate change mitigation and lobby for funds and looks forward to working with CFA in these ventures.

Let's conserve environment to benefit current and future generations.

Simon Kamonde
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News from Guyana

Government licences to prospect and mine for gold in alluvial deposits (old river beds) are cheap to acquire and hold in Guyana. There are some 12,000 small-scale mining claims licences, mostly held by a small number of people who acquired them several or many years ago through good political connections. A majority of these holders are rentiers, not mining themselves but renting out the licences to small crews of Guyanese or Brazilians or, increasingly, Chinese immigrants, who use powerful hydraulic hoses to blast away the topsoil and alluvial clay overburden to reveal the possibly gold-bearing black sands below. The environmental devastation comes in several forms, including the loss of natural tropical rainforest – which is rarely logged for commercial timbers before the land is cleared by the miners. The National Development Strategy (1996) and several major technical assistance projects (GTZ, World Bank) for years past have recommended better coordination between the Guyana Geology and Mines Commission (GGMC) and the Guyana Forestry Commission (GFC) for coordination of mining and logging licences, without government action. Recent recommendations (March 2013) for a re-start on integrated land use planning made to the new Ministry of Natural Resources and the Environment repeat the call for coordinated licences but without resonance from the Minister himself.

Besides the social and environmental problems of a 'Wild West' approach to mining in areas under the customary land claims of the indigenous Amerindians, the lack of any post-mining land reclamation (as required by the not-implemented environmental Mining Regulations 2005) leaves heavily contaminated land with the topsoil all flushed into the rivers and killing aquatic life, pools of water which breed malaria-carrying mosquitoes, and undrinkable water wells. This year there have been four protests to the High Court by affected Amerindian communities. Unfortunately, such is the poor knowledge of the laws and regulations of Guyana by Amerindians, lawyers and judges alike, the cases have been a legal shambles. None of the

participants appears to recognize that the cases involve up to four laws or regulations but the judges appear to be able to understand only cases involving single laws. Sadly, but unsurprisingly, all cases have gone against the Amerindians. Unlike Brazil, there is no system in Guyana for educating the judiciary about environmental issues.

The second formal negotiation session for a Voluntary Partnership Agreement (VPA) between Guyana and the European Union took place in July 2013, under the EU Action Plan 2003 on Forest Law Enforcement, Governance and Trade (FLEGT). This session was held just after Guyana Government presentations at the 22nd Stakeholder Consultation and Update on Illegal Logging at Chatham House in London. Comments from the floor indicated concern about the application of 'democratic centralism', the practice of the Government of Guyana to restrict information to what the Executive Committee of the ruling political Party considers is necessary for the citizens to know. Some of the concerns expressed can be read in the summary report on the FLEGT Update, page 8 in http://www.illegal-logging.info/sites/default/files/22nd%20IL%20meeting%20report_EN.pdf.

The notion of transparency and free exchange of information and comment, which is a requirement in the EU FLEGT Action Plan of 2003, is still foreign in Guyana. Likewise, the Government is restricting consultation on the VPA development to those who are in political favour or who do not question the Government's approach.

Large promises of multi-million dollar inward investment in the forest sector have been made by the India-based Café Coffee Day (operating as VHPI in Guyana) and China-based Bai Shan Lin, and announced with satisfaction by the Minister of Natural Resources. However, what is actually seen and reported in the Press is a continuation of the export of unprocessed and under-declared logs from Guyana for transformation in mills in India and China, entirely contrary to the value-added industry policies approved by the National Assembly in Guyana. The promised

investment in processing mills in Guyana has yet to be seen. What is now clear in both forest and mining sectors is a set of transnational companies operating as economic enclaves effectively free of government supervision or respect for the laws of Guyana, while much smaller local enterprises in mining and logging are harassed for bribes by the staff in the government agencies. After all, if the apex of government and the senior management of government agencies are perceived and accused frequently in the daily newspapers of ignoring laws, and building mansions impossible to afford on their official salaries, why shouldn't the staff also demand a cut in exchange for ignoring infractions? And what about the penalties formally levied by the GFC? – who knows? – the GFC is years adrift with the legally required annual reports and audited accounts which are supposed to be laid before the National Assembly. Even the

innocuous Forest Sector Information Report, which omits all the most relevant data, is a year out of date.

Meanwhile, consultants for the GFC under the Norwegian grant for a Monitoring, Reporting and Verification Scheme (MRVS) are pressing on with devising wall-to-wall mapping of forest and non-forest at 5m resolution or better from RapidEye radar satellite imagery, while ignoring the maps of current and past logging and mining areas held by the GFC and the GGMC.

And in case as a visitor you meet a road block, a 'towel' is a bribe of G\$ 1000 (US\$ 5) while a 'juice' is only US\$ 1. Not a problem for an Asian log trader making perhaps 70 per cent profit even before the ship has left port in Guyana.

Janette Bulkan
CFA Governing Council

First 'Prince of Wales Award for Sustainable Forestry' presented in Canada



Jocelin Teron, winner of the Prince of Wales Award for Sustainable Forestry

The Canadian Institute of Forestry (CIF/IFC) has awarded the first 'Prince of Wales Award for Sustainable Forestry' to Jocelin Teron of British Columbia, Canada. Following her achievement, Jocelin will travel to the United Kingdom to exchange learning practices with

British foresters working on His Royal Highness's Duchy of Cornwall estate as part of an ongoing partnership with The CIF/IFC. It is hoped the visit will take place next year to coincide with a Woodland to Workshop course run by Woodland Heritage, a charity of which HRH The Prince of Wales is Patron.

The Prince of Wales has been visiting Canada since 1970 and shares the CIF/IFC's enduring belief in sound forest stewardship and sustainability across Canada and throughout the world.

The idea for this new award dates back to 2010 after Geraint Richards, the Duchy of Cornwall's Head Forester, delivered the keynote address at the CIF/IFC annual conference in Jasper. His Royal Highness was very interested to learn of the positive relationship that was developing between the CIF/IFC and the Duchy of Cornwall, and particularly wanted to encourage younger members of the CIF/IFC.

His Royal Highness said: "I am delighted that the Canadian Institute of Forestry is presenting the first ever 'Prince of Wales Award for Sustainable Forestry'. I am especially keen that this new award should recognize the dedication of a younger forestry professional to sustainable methods of forest management."

The award recognizes the achievements of an outstanding young forest professional in Canada, and encourages involvement in and dedication to the principles of sustainable forest management, science-based land stewardship, and public outreach focusing on the wise use and conservation of forests and the ecosystems that they encompass.

Youth

Ten days in Turkey: the experience of a young forester attending the 2nd IUFRO Task Force 'Education In Forest Science Learning Initiative 2013'



The 2nd IUFRO Learning Initiative organized by the Education in Forest Science Task Force of the International Union of Forest Research Organization (IUFRO) was held in Artvin, Turkey from September 2–11, 2013 with the theme “Forests in Climate Change”.

The aim of the task force is to contribute to the development of the standard of education in forest sciences, which meet the requirement of today, using experiences and examples of good practice in the IUFRO community and cooperation with higher education experts. Consequently, the 26 participants of the 2nd Learning Initiative (LI), which took place in the Faculty of Forestry, Artvin Coruh University learnt from teachers with international reputation and global relevance.

What did the participants have in common: we were young! We wanted to know more about 'Forests and climate change', and we wanted to see the province on the black sea coast, which is surrounded by high mountains (up to 3900m) – Artvin!



Participants at the Faculty of Forestry, Artvin Coruh University

The LI was opened officially by Prof. Piotr Paschalis-Jakubowicz, the coordinator of the task force. While giving the opening speech, he talked about the importance of the LI in relation to the mandate of the Education in Forest Science (EFS)

task force. The first lecture was given by Prof. Zbigniew Kundzewicz who is part of the inner circle of the IPCC (2007 Nobel Peace Prize Laureate). He gave a lecture on the initial perspectives on climate change, impact and mitigation. During his lecture, he noted that “despite mitigation efforts, climate change will continue for many centuries; thus, adaptation remains necessary!” Breaks were had during the lectures to facilitate group discussions and interactions between the participants. For the group discussion task, groups were formed based on nationalities and each group was asked to discuss the evidence of climate change in their countries, level of consideration given to the consequent impacts in their countries and what are the possible options the participants could come up with. Each group made a presentation after which discussions were facilitated.

Prof. Zbigniew Kundzewicz provided teaching on climate science-policy interface in which he enlightened the participants on the acceptance, review and publication of the IPCC assessment reports. He gave hints on the politics involved as well as how the plenary have been able to survive the cases. He concluded his teaching with climate change impact on water resources, during which he elaborated on extreme weather events in the changing climate. The following lecture was centred on the application of economic theories to adaptation and mitigation and was delivered by Prof Jean-Luc Peyron of ECOFOR and ECHOES. He engaged the participants on using economic equations to climate change status via computer exercises.

During the Learning Initiative, sporadic visits to the city centre were organized. This afforded the participants the opportunities to have a feel of the environment. Throughout the duration of the program, breakfasts, tea/coffee breaks, lunch and dinners were had stylishly in the Turkish context!

Prof. Chandrashekhar Joshi, a professor of Forest biotechnology, Michigan Tech, USA led the 5th day of teaching. He gave interesting sessions of interactive lectures on climate change and bio-energy. During the lecture, a debate session about the use of bio-energy to substitute petroleum production was done. After the end of the sessions, participants gained new insight on bio-energy and its potential in climate change mitigation.

At 1900hr of the same day it was time for barbecue! The participants, organizers as well as tutors were brought together and the event was graced by the presence of a Turkish accordionist, who spurred the attendees into dancing mood. Among the wonderful experience of the night was the musical sound from Poland, folk music from Estonia as well as dance moves from Nigeria and Turkey.

A lecture on “Reasons for, dynamics and measurement of climate change” was given by Prof Zoran Galić of the University of Novi Sad Institute of Lowland Forestry and Environment, Serbia, in which he gave illustrations using his previous and

recent research studies. He also highlighted the influences of land use change and its impact on climate change.

Following the last day of lectures the International Forestry Students' Association (IFSA) support to the event, Yemi Adeyeye, gave a presentation on IFSA activities and the possibility for participants (youths) to be engaged in the IUFRO World Congress.

The LI was closed by Dr. Szymon Bijak, a member of the EFS task force. He gave the vote of thanks in respect of the Task Force and appreciated the organizers, host, as well as the participants for a successful event.

We said good-byes to the host team and participants from Turkey. Though we left, the teachings and memories garnered via interactions, site seeing and friendship will linger in our heart for a long while... and we earnestly hope to see each other again in Utah, USA, for the 3rd Learning Initiative and the IUFRO World Congress in 2014!



Yemi Adeyeye

MSc Student: University of Copenhagen.
IUFRO LI Organization Support: IFSA

Publications

God's Trees – Trees, forests and wood in the Bible. An illustrated commentary and compendium.

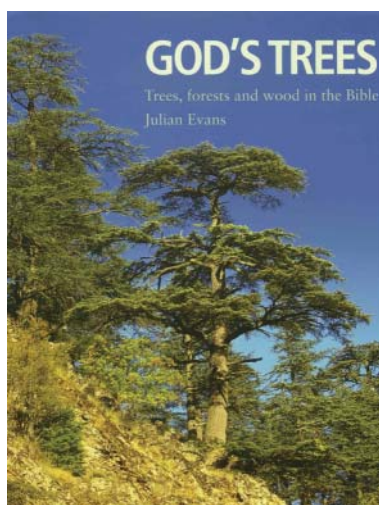
Julian Evans. Day One publications

This is an unusual and interesting book that brings together faith and forestry, and is about trees, forests and wood in the Bible. The author is an eminent forester and also a committed Christian, attributes which come over clearly in the quality of the text and the careful research given to both aspects. In contrast to other books on similar topics, Dr. Evans has chosen to structure his content following the order of the books in the Bible, starting from Genesis and ending with Revelation, leaving a short (but comprehensive) compendium of trees and larger shrubs for the end.

As he guides us through the Biblical books, highlighting key events and ideas, Dr. Evans discusses trees and their products in the sequence that they occur in the narrative. This leads inevitably to some repetition (oaks, olives and cedars pop up quite frequently), but the author skilfully weaves important principles and techniques of forestry into the text, making interesting and varied connections between ancient and modern practice.

Emphasising that the Bible is a collection of books written as stories, history, poetry, regulations, parables etc., Dr. Evans explains the way plant references give historical and theological support to the Biblical narrative. This type of presentation does assume that the reader has some knowledge of the biblical books and stories, and it would be worth doing some homework, if you are not well versed.

Dr. Evans' approach might give less evangelical readers cause for concern, given that the tree of life in the Garden of Eden and Noah's ark are among the first examples to be



considered. Nevertheless, the book proceeds to those which will be of value to readers of other faiths or none, if they want to grasp the historical importance of trees and their products in biblical times, as well as their role in helping to explain Jewish and Christian belief.

There are eleven chapters – eight covering the Old Testament, and three for the New Testament. Each ends with notes and references which are very thorough. There are three indices: one covers species and common names, and another general topics. The longest consists of the Biblical passages cited – which serves, if nothing else, to emphasise the extent of plant references. This might have been more useful integrated into the other two indices.

I enjoyed reviewing this book, particularly because I had attempted to do something similar (far less rigorous) about seeds and plants in the Bible. Wisely, Dr. Evans avoided getting embroiled in the more controversial interpretations of the Biblical text. However, I was a little disappointed not to have read more about an intriguing interpretation of Moses' burning bush – that it was the shrub known as the gas-plant (*Dictamnus alba*) which excretes a volatile liquid that can combust without damaging the plant.

As other reviewers have said, this is a fascinating and informative book. It comes in a small coffee-table format, and is very well illustrated throughout. It has clearly been a labour of love, and I heartily recommend it if you want to make a link between forests and faith from a Christian perspective.

Marcus Robbins
CFA Treasurer

An overview of current knowledge about the impacts of forest management certification: a proposed framework for its evaluation

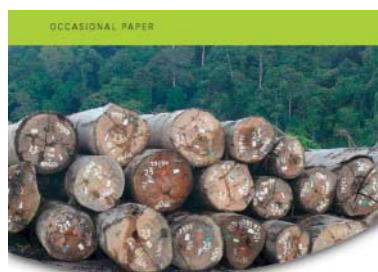
C. Romero, F.E. Putz, M.R. Guariguata, E.O. Sills, P.O. Cerutti, and G. Lescuyer.
CIFOR Occasional Paper 91

Forest management certification is a non-governmental, voluntary, market-based mechanism to promote sustainable use of forest resources. It recognizes responsible management through independently verified compliance with established principles, criteria, and indicators that describe the acceptable ecological, social, economic and policy impacts of forest management. As such, a credible label of certification renders visible the positive externalities of responsible forest management.

As with many other conservation interventions (e.g., payments for environmental services or establishment of protected areas), there is as yet little empirical evidence for the impacts of certification. Indeed, many forest people and institutions now agree on the need to critically assess when, where, how, to what extent, why, at what cost to whom, and for how long certification changed the ways forests are managed.

To support such assessments, this paper provides a critical description of known impacts of certification on the fates of natural forests in developing countries and reviews the basic components of a credible evaluation of this and related conservation interventions. The paper also stresses that for a proper evaluation it is critical to understand the national and local contexts (biophysical, social, political, economic) that affect the implementation and permanence of certification's impacts. With this background, the paper then proposes a road map towards a formal and empirical evaluation of the biophysical, social, economic, and policy impacts of the Forest Stewardship Council (FSC) certification of timber extraction from natural tropical forests. The authors focus on the FSC because it is the primary certification scheme for natural forests in the tropics, with more than 100 forest management units (FMUs; forests managed for timber production by private forest owners, concessionaires, industrial groups and states legally recognized by corresponding authorities) certified since it started in 1994.

The authors refer to 'certification impacts' as those changes in the forest and surrounding areas that are attributable to certification at several levels: neighboring local communities and workers; participating FMUs; and, local and national governments and legal frameworks. They use the Organization



An overview of current knowledge about the impacts of forest management certification
A proposed framework for its evaluation

Claudio Romero
Francis E. Putz
Manuel R. Guariguata
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Guillaume Lescuyer



for Economic Co-operation and Development (OECD) definition of impacts as: 'the positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended' (OECD2002). For clarity, the authors use the term 'sustainability' to refer to one of the goals of certification and the more restricted term 'responsible' to refer to what is actually certified.

The authors argue that to be credible, salient, and effective, an evaluation of certification needs to be participatory from the onset. Input from the full gamut of relevant people and institutions involved coupled with compilation of the salient biophysical and socio economic characteristics of certified and other FMUs needs to form the basis for designing various formal evaluations of this complex intervention. Also, emphasis should be given to formulating a theory-of-change for the intervention that captures contrasting views on certification.

The evaluation framework proposed aims to track variation in the quality of implementation of certification (i.e., process evaluation). Likewise, it integrates results of empirical research that tests hypotheses motivated by how specific contextual factors shape certification outcomes. This basic information needs to be organized into a typology of FMUs (e.g., concessions, private landowners, communities) that will serve to produce a better understanding of dynamics in the certification sector and the self-selection process of FMUs into and out of certification (or switches among certification schemes/bodies). In-depth, historical political economy appraisals of the forest and timber sectors are also needed to analyse contextual factors and other elements exogenous to the FMUs the influence forest management decisions. Finally, the authors argue that a diversity of people and institutions – from representatives of local and regional communities and governments, environmental and social NGOs to FMUs at all levels of decision-making – need to contribute to and to benefit from the knowledge gained from an evaluation of forest management certification.

All in all, the framework proposed represents a first step towards the design and implementation of an empirical, field-based impact and process evaluations of tropical forest certification. The authors hope that the research framework proposed will help us to learn from past mistakes and thereby improve decision-making related to the long-term maintenance of forest values for the benefit of society as a whole.

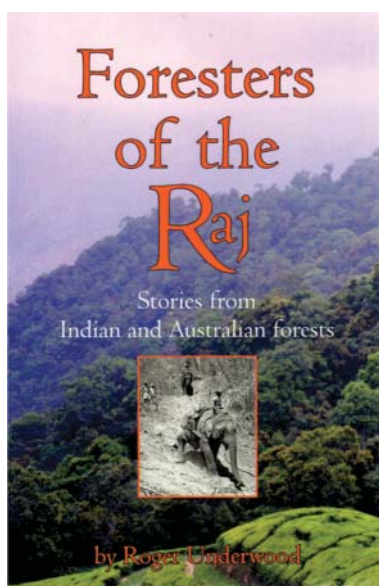
Foresters of the Raj: Stories from Indian and Australian forests

Roger Underwood, York Gum Publishing

The author of this delightful and informative book is in his element writing about forests, this being his sixth publication on the subject in an eminent career spanning fifty years as a professional Western Australian forester. The word *Raj* in the title refers to the British Raj, which “reigned” in much of the Indian sub-continent and other countries (including Australia) under the British Empire in which the *foresters* were the pioneers responsible for the care of the forests. The book is more about foresters than forestry.

Scientific forest management has its origins in the middle-ages and in middle Europe, mainly in Germany and in France. Why Germany? Howard Wright (formerly of the Oxford Forestry Institute) from his studies on forest management in England, has drawn my attention to a high level forestry appointment made in 1775, by the Prime Minister Lord North. The appointee in this case was one Colonel A. Emmerich and the post was Head of the UK Royal Parks and Forest Chase in the reign of George III. Col Emmerich had been a *forstmeister* in Westphalia in the service of the King of Prussia before his appointment and it seems likely that only the best of the most eminent foresters of the world would have been considered suitable for the English Crown forests. Not only was the English Royal family German but the only other country with similar advanced expertise in managing forests was France. And England was at war with France.

By the first half of the 19 century much of British India's forest cover had been over-exploited, degraded or destroyed, to meet the demand for teak timber for the Royal Navy; for shifting and sedentary agricultural expansion, and a little later to meet the timber and fuel demands of the expanding railway network. By the mid 1850s the Indian forests were reported to be in a “terrible state” and setting up a professional forest service was a matter of urgency. The obvious source from which to recruit suitable professional foresters was clearly Germany, from whence the first foresters to be recruited under the Raj duly came. The first trio, Dietrich Brandis, Berthold Ribbentrop and William Schlich, were joined by British ex-army officers and one of the earliest recruits was Baden Baden Powell, who in 1875 became the editor of the professional journal, *The Indian Forester*. For half a century this quarterly journal was the world's pre-eminent English language publication dealing with forestry.



Most of the countries of the British Empire, for which forest management was important, subscribed to it, and it was the complete series of that journal in the library of the Department of the Environment in Western Australia that provided most of the material that inspired Roger Underwood to write *Foresters of the Raj*. What is special about his book, as its title suggests, is that it is a collection of stories about the foresters (and non foresters) working for the Raj who developed and adapted skills which were subsequently applied all over the former British Empire. Roger's wise and informed perusal of the treasure house that is the *The Indian Forester* is supplemented by his own up to date knowledge and wide experience, resulting in a unique and fascinating anthology of stories covering every aspect of the Raj forester's job and the different types of forest for which

they were responsible. Not all the forests of the Raj countries were rainforests; in fact many were dry, seasonal, and fire-prone. Roger's section on forest fires is well worth reading.

There exists already good bibliographical coverage of forestry at this time; including, of course, the publications of the Raj foresters themselves. Two fairly recent books compiled by the late Colyear Dawkins (a “Raj” silviculturist in pre-independence Uganda) are worth adding to the reading list for specifically silvicultural history in tropical moist forests (1), (2).

Foresters of the Raj is a well-written historical anthology, exciting, informative, surprising, and a welcome addition to the literature on a century and a half of pioneering forestry. It is well printed and bound and commendably free from printing errors. If I have a criticism of the book it is that I would have liked more references and an index to help browsing the text.

As with so many desirable books I hope it becomes widely available and affordable. Read it, get a copy if you can. I enjoyed it immensely. –

Related reading

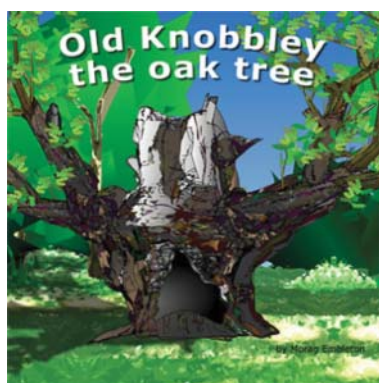
- (1) Dawkins HC, and Dipper Suzanne (editor) (1997) *Silviculture in the Tropical Rain forest*; an historical analysis of success and failure. Annotated abstracts. Oxford Forestry Institute, University of Oxford. Paperback, 263p. ISBN 0 85074 148 3
- (2) Dawkins HC, Philip MS (1998) *Tropical moist forest silviculture and management*. CABI, Wallingford, hard-cover, 394p ISBN 978 085 199 2556

Peter Wood
CFA Vice-President

Old Knobbley the Oak Tree

Morag Embleton, Lulu.com

From acorn to ancient oak tree a brief history with the tree that's seen it all – Old Knobbley (the ancient tree with his own website www.oldknobbley.com). Beautifully illustrated children's book about Old Knobbley. A fabulous gift for young and old alike. Tree lovers everywhere will enjoy this book. Anyone who has climbed



or hugged ancient trees, or even Old Knobbley himself, will treasure it. This is a perfect lap book for sharing with young children and up. Then they'll enjoy reading it to themselves as they get older and someday will be wanting it to share with their little ones. Note: Old Knobbley insisted that trees are planted to offset the paper used in the book, so for every two books purchased one tree will be planted with WeForest.org.

Around the World

Global: Communities can monitor forests 'as well as experts'

Communities living alongside the world's tropical forests can estimate an area's carbon stocks as effectively as hi-tech systems, a study has shown. An international team of researchers found communities using sticks and ropes obtained the same results as data gathered by satellites. They added that the study showed that projects aimed at halting deforestation needed to use these people's skills.

"For the first time, we have shown that local communities are able to monitor forest biomass up to the highest standards of the [Intergovernmental Panel on Climate Change], even in the most species-rich forests on Earth," explained co-author Finn Danielsen, senior ecologist for Denmark-based NGO Nordic Foundation for Development and Ecology. "We are arguing that the (REDD) policy document is showing that they should be part of the process, but in reality they are not."

Reducing Emissions from Deforestation and forest Degradation (REDD) projects are one of the main mechanisms available to policymakers to curb greenhouse gas (GHG) emissions from deforestation and land-use change. Current estimates suggest that deforestation and forest degradation accounts for about 15% of GHG emissions resulting from human activity.

Under the schemes, such as the UN's REDD programme, developing nations are paid not to fell large areas of tropical forests. REDD+ projects also include other measures, such as conservation, sustainable forest management and the enhancement of forest carbon stocks.

"If you want to have an impact on the ground, you have to involve the people who live in the area who depend on the resources provided by the forests," Mr Danielsen told BBC News. "You can do all sorts of remote sensing and national inventories of carbon stocks but if you do not involve local community

members, you are going to have a very hard task linking all the factors together to have real implementation on the ground."

With this in mind, the study – co-ordinated by the World Agroforestry Centre – identified 289 plots in nine forest types located in four countries in South-East Asia and compared the carbon stock estimates collected by local communities with the results gathered by professional foresters. Mr Danielsen observed: "We found that they obtained the same results, both in terms of accuracy and precision."

He explained that the method used by the local communities was "very easy and very straightforward", using just basic instruments, including sticks and ropes. "They establish a plot in the forest that contains a typical composite of trees for the forest," he said. "Then they measure the trees and write down on a piece of paper how big the trees are and how many there are. They then enter this data into a spreadsheet and then this spreadsheet can tell us how much carbon is stored in that particular plot. If that plot is representative of the area then you can calculate how much carbon is stored in the forest." The team hoped its findings would show that forest communities were an under-used resource when it came to the monitoring aspects of REDD projects.

"At the international level, we are saying that we have got to find ways for REDD to be having a true impact on the forests around the world," Mr Danielsen commented. "At a national level, we would like to send the message to government departments that it is possible for local communities to do the job". "We are not saying that they can do it better or they should do it alone, we are just saying that they can do it just as well as government foresters and foresters from the private sector."

bbc.co.uk

USA: Yosemite Rim Fire is taste of things to come

San Francisco is in a declared state of emergency, its power and water supplies threatened by one of the largest fires on record in California. The blaze is 250 kilometres to the east of the city, on the fringes of Yosemite National Park. It is a grim warning of profound changes that may lie ahead, as the western US comes to terms with a new ecology of fire, wrought by climate change.

Wildfires have always been a part of life in the US west, but they are on the rise as climate change takes hold. In California's Sierra Nevada mountains, the main problem is the earlier onset of spring. "The snow melts earlier, especially at lower elevations," says Michael Wehner of the Lawrence Berkeley National Laboratory, a lead author for the US National Climate Assessment. That gives forests longer to dry out, producing tinderbox conditions by late August.

By threatening San Francisco's power and water, the Rim Fire serves a warning that wildfires can have effects far beyond the area they burn. These will include a surge in air pollution as wildfire activity increases, a new study suggests.

Xu Yue of Yale University has calculated that by the middle of the century, as wildfire activity grows with climate change, total summertime soot pollution will rise by up to 27 per cent in

the western US, while aerosols of organic compounds will increase by as much as 70 per cent.

Both are important contributors to PM2.5, a class of microscopic particles that trigger cardiovascular and respiratory problems. Still, it is hard to predict exactly what the health effects of this increased pollution would be, as that depends on whether smoke plumes from major fires engulf major population centres. "Any detriment in air quality is worrisome," says Sarah Henderson of the British Columbia Centre for Disease Control in Vancouver, Canada, who studies pollution from forest fire smoke.

Another concern is that scorched forest may not recover – at least not to its former state. Mixed conifer forest, like the area now ablaze, is slowly being replaced at lower elevations by shrub land, which is better adapted to drier conditions. Events like the Rim Fire will accelerate this process, suggests Matthew Brooks of the US Geological Survey's Yosemite Field Station in Oakhurst, who is studying fire ecology in the Sierra Nevada. This, in turn, will reduce the ability of wild lands to mitigate global warming by pulling carbon dioxide from the atmosphere. "You've replaced a big sponge with a smaller sponge," Brooks notes.

newscientist.com

India: East Himalayan forests turning brown

In what appears to be another grim outcome of climate change, a study has found that forests in eastern Himalayas are gradually 'browning', with trees withering and foliage declining even during productive seasons. Similar changes were noted in tropical mountain forests across the world.

Among the 47 protected areas across five biodiversity hotspots selected for the study, were Kangchendzonga national park in Sikkim and Namdapha national park in Arunachal Pradesh. It used satellite images from 1982 to 2006, which revealed a common trend: there was mild greening till the mid 1990s and then came a sudden and steady reversal which is making these forests appear drier and brown. This may mean that the trees in these forests are not able to transpire at the optimum level and their photosynthesis activity has reduced due to temperature rise.

"One would imagine that the mountains would become more green with the rise in temperature, but it is not so," said Jagdish Krishnaswamy, one of the authors and a scientist at Ashoka Trust for Research in Ecology and Environment (ATREE). "There is a temperature induced moisture stress which is causing the trees to wither. There is less foliage even during the most productive time of the year in almost all the five regions we have studied," The study also points to a complete loss of certain moisture regimes in these forests.

"The globally consistent browning trends that we observe indicate that such phenomenon is probably more widespread in tropical mountains, with implications for primary production and species diversity at all levels," the study concludes.

Researchers used normalized difference vegetation index (NDVI), which monitors live green areas from remote sensing

data, from 1982 to 2006 and focused it on select high altitude (1,000 to 5,000 metres above mean sea level) protected areas in the tropical belt. During this period the rise in temperature and trends in precipitation was different for different regions. Despite that, scientists spotted a similar browning trend in all the areas covered.

"In the Himalayas we see a temperature rise of about 1.5 degree C between 1982 and 2006. But it's not the same for other continents that were studied," explained Krishnaswamy. Except for South America, all the other four regions studied experienced a steady rise in temperature during the period but precipitation trends were inconsistent.

Says Robert John, faculty at the Indian Institute of Science Education and Research and co-author of the study, "It's interesting that all these five regions are distinct climatically. We found that the browning trend is statistically significant. It's real. The trend may not have started at the same time in all the regions though."

Scientists from The Center for International Forestry Research (CIFOR) in Indonesia have also co-authored this study that has been accepted for publishing on the Global Change Biology journal.

Among others, the study has covered Mt Kilimanjaro and Rwenzori in Africa; Huascaran and Medidi in South America; Jigme Dorji and Jigme Singye national park in Bhutan in south Asia along with the two other forests in India and Khakaborazi national park in Myanmar; Lorentz national park in Indonesia, southeast Asia.

timesofindia.indiatimes.com

Australia: Gold in trees leads to hidden deposits

Money might not grow on trees, but scientists have confirmed that gold is found in the leaves of some plants. Researchers from Australia say that the presence of the particles in a eucalyptus tree's foliage indicates that deposits are buried many metres below. They believe that the discovery offers a new way to locate the sought-after metal in difficult-to-reach locations.

Dr Mel Lintern, a geochemist from Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO), said: "We've found a lot of the easy deposits in Australia and elsewhere in the world as well. Now we are trying to tackle finding these more difficult ones that are buried beneath tens of metres of river sediments and sand dunes. And the trees are providing us with a method to be able to do this."

Gold particles have been found around the soils of eucalyptus trees, but the researchers confirmed that the plants were taking in the element. Using the Australian synchrotron – a vast machine that uses X-rays to probe matter in remarkable detail – they found traces of gold in the leaves, twigs and bark of some trees. The amounts of the precious metal were tiny.

"We've done a calculation, and found that we need 500 trees growing over a gold deposit to have enough gold in the trees

themselves to make a gold ring," said Dr Lintern. However, the presence of the particles pointed to greater riches buried more than 30m (100ft) below.

Dr Lintern said: "We believe that the trees are acting like a hydraulic pump. They are bringing life-giving water from their roots, and in so doing, they are taking smaller dissolved gold particles up through the vascular system into the foliage."

Currently, the metal is found in outcrops, where the ore appears at the surface, or it is detected through exploratory drilling. But the researchers said that analysing vegetation could offer a better method to find untapped gold deposits.

Dr Lintern said: "Not only do we believe it is a way of stretching the exploration dollar further, because exploring for these deposits can be quite expensive, it also minimises the damage to the environment because we are taking a very small sample from the trees themselves, as well as the leaves and twigs on the ground."

The researchers said the technique could also be used to find other minerals such as iron, copper and lead in other parts of the world.

bbc.co.uk

Guyana facing loss of US\$20M in Norway forest payment

Guyana will lose out on around US\$20M of the payment it would have received under its forest protection agreement with Norway for last year, once increased deforestation is confirmed by independent verification exercises to be completed by month end, according to Natural Resources Minister Robert Persaud.

The figures, contained in the third Report on deforestation rates for the year 2012, compiled by the Guyana Forestry Commission (GFC) and the forestry consulting firm Indufor, showed that Guyana's deforestation rate has jumped to 0.079% in the Year 3 reporting period (2012), from 0.054% in the Year 2 reporting period (2011). The Report was completed under the Monitoring Reporting and Verification (MRV) system for REDD+ and it summarises forest change of forest to non-forest.

Despite the increased deforestation rate, Persaud told a press conference that Guyana still has one of the lowest deforestation rates in South America and the world over. The minister also noted that although the increased figures have been recorded, no action can or will be taken on those figures until they are verified.

Currently, the University of Durham is carrying out an independent verification exercise on the figures, and it is expected that it will complete its work by the end of the month. In addition, stakeholders' views are currently being solicited, and a final report, which will include the feedback received, will be prepared subsequently.

Persaud also said that Norway will be commissioning its own verification exercise in its effort to ascertain the validity of

the figures. This exercise is also expected to be completed by the end of the month. He said that the information captured in the preliminary report was done using 5 Meter Resolution Satellite Imagery, as opposed to the 30 Meter Resolution previously used. The figures are therefore expected to be quite accurate and so it is likely that the results of the verification exercises will not be dramatically different, although the possibility exists that differing values can be arrived at. Nevertheless, if the figures are found to be valid, Guyana may lose out on approximately 45% of the funds it was to earn from Norway under the Joint Concept Note (JCN) for 2012.

For the Year 2 period (2011), Guyana received US\$45 million, but according to the JCN signed by the two countries, compensation for maintaining Guyana's forests is results-based, and so as deforestation levels increase, the money Guyana will receive decreases. The JCN states that a deforestation rate of 0.07% Guyana's funds would be cut by 25%; at a deforestation rate of 0.08% the funding would be cut by 45%; at a deforestation rate of 0.09% the funding would be cut by 70%; and if Guyana's deforestation reached 0.1% no payments would be made.

Last week, Dr. David Singh, who heads Conservation International said, "I do believe that there is going to be a significant reduction (of funds from Norway) as a result of this," when contacted on the latest figures.

Stabroeknews.com

African countries agree to curb illegal timber trade in the Congo Basin

Governments from Africa's main timber producing countries, together with timber industry representatives and civil society organizations agreed to jointly combat illegal timber trade in the Congo Basin, FAO said following an international wood industry meeting in Brazzaville in October.

Covering an area of 300 million hectares, the Congo Basin harbours the world's second largest tropical forest. It is also a major supplier of illegal timber, part of a global trade that cost governments some US \$10 billion per year in lost tax revenues worldwide.

At an international forum held in Congo's capital Brazzaville from 21–22 October, representatives of six African countries – the Republic of the Congo, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Côte d'Ivoire and Gabon – adopted the Brazzaville Declaration, marking an unprecedented commitment towards the sustainable and legal development of the wood industry in the region.

The Declaration was adopted jointly with timber industry representatives and civil society organizations. It engages partners to implement measures that improve timber tracking, transparency and forest governance. "We must ensure that our forest resources contribute to the development of the countries in this region," said Raymond Mbitikon, Executive Secretary of the Central African Forest Commission (COMIFAC). "This is what the Brazzaville Declaration sets out to achieve."

The Declaration is the outcome of a long term debate among key stakeholders in the forest and wood industry, as well as regional and international partners, including the Association Technique Internationale des Bois Tropicaux (ATIBT), the

European Forest Institute (EFI), the European Union (EU) and FAO, in particular through their joint efforts to advance the Forest Law Enforcement, Governance and Trade (FLEGT) process. "FLEGT meets growing consumer demand for environmentally and socially benign timber products through collaboration between producing and consuming countries," explained Robert Simpson, EU-FAO FLEGT programme manager. "Ultimately, it aims to assure that forests remain productive, yet intact."

In 2003, the EU adopted a FLEGT Action Plan, promoting concrete measures to stem the illegal timber trade. These include technologies to trace the origin of timber, the creation of forest enforcement teams and community forest monitors to observe logging activities, as well as legally binding agreements – known as Voluntary Partnership Agreements – between the EU and timber-producing countries, that establish mechanisms to distinguish between legally and illegally harvested timber. "The Brazzaville Declaration could help slow down the pace of deforestation in the region," said Olman Serrano, an FAO forestry officer, explaining that FAO estimates the net loss of forest in the Congo Basin at some 700 000 hectares per year from 2000–2010.

The Congo Basin is not only home to the world's second largest rainforest after Amazonia. It is also a key resource for stabilizing the global climate.

Recent research shows that Congo Basin tree species are larger in stature on average than their Amazon counterparts, suggesting the African rainforest may be a larger carbon storehouse and a crucial resource for productive and sustainable forest management.

fao.org

Indonesia: Greenpeace statement on Indonesia-EU timber agreement

The Forest Law Enforcement, Governance and Trade (FLEGT) timber trade agreement was signed in Brussels at the end of September between Indonesia and the European Union (EU). The head of the Indonesia Forest Campaign at Greenpeace International, Bustar Maitar, responded:

"Today's signature of the FLEGT agreement is an important step to improve forest governance and law enforcement in Indonesia. It shows Indonesia's willingness to expel corruption and illegal practices from its forestry sector, and the EU's engagement to continue to support Indonesia, especially for the independent CSO forest monitor (JPIK)," said Bustar.

The signature of the agreement should not be seen as an end point, but rather as a stepping-stone. There is still much work to be done if Indonesia's timber legality standard (SVLK) and system are to be credible.

"Indonesia must take steps to improve enforcement such as prohibiting forest conversion for industrial timber plantations and ensuring transparency and access to relevant data and maps.

"As long as companies such as Asia Pacific Resources International Holdings (APRIL) are allowed to destroy biodiversity rich forests and turn peatlands into pulpwood plantations, the green credentials of the Indonesian legality standard will be seriously flawed," said Bustar.

greenpeace.org

Indonesia's forests are shrinking despite reforms

At home and abroad, Indonesia is highlighting its progress in curbing the environmental destruction that has depleted forests and made it a leading source of greenhouse gases. But environmentalists are unconvinced. They say pulp and palm oil plantations are expanding at an alarming rate in Sumatran forests despite efforts by the government and industry. That expansion has contributed to climate change and threatens endangered tigers and orangutans.

More than 80 percent of Indonesia's emissions are due to clearing of the world's third-largest area of rain forest, after Brazil and the Democratic Republic of Congo. About half of Indonesia's rain forest has already been destroyed. Greenpeace, which has conducted extensive research on deforestation in Indonesia, says government maps show the country lost 12,400 sq. km of forest between 2009 and 2011. The main cause, accounting for about a quarter of lost forest, was for production of palm oil, which is used as food and as biofuel. Carbon-rich peat lands being cleared for plantations must be drained first. That releases vast amounts of carbon dioxide into the atmosphere.

President Susilo Bambang Yudhoyono has committed to cutting greenhouse emissions by 26 percent by 2020. His government in 2011 declared a moratorium on new concessions in primary forest in a \$1 billion deal with Norway. The moratorium was extended this May for two years. Environmentalists say that doesn't go far enough because it doesn't cover existing concessions. The U.S. government reported in June that Indonesia's palm oil industry has enough land that can be developed to continue its rapid rate of plantation expansion for at least 10 years.

Indonesia is a nation of 250 million people scattered across hundreds of islands that would be vulnerable to climate change from rising sea levels. But it is also a big contributor to the global problem, being among the largest emitters of greenhouse gases after China and the United States.

Indonesia's ambassador to Washington, Dino Patti Djalal, said the government is working with industry and environmental groups to protect forests. He highlighted the move this February by Asian Pulp and Paper — the country's top pulp producer — to halt clearance of natural forest and use just existing plantation and degraded land; and a commitment by Sinar Mas — which controls both that company and top palm oil producer Golden Agri-Resources — to protect orangutans. "It shows that the industry wants to change, they want to do the right thing, but sometimes we have just got to help them," Djalal told the Stimson Center think tank this week.

The amount of forest cover lost annually has fallen from an estimated 1 million hectares between 1990 and 2010 — equivalent to nearly 1 percent of the national total per year — to 600,000 hectares per year between 2009 and 2011.

Amy Moas, a U.S.-based forest campaigner for Greenpeace, acknowledged some progress but said "there are dozens, perhaps hundreds, of companies still skirting lax laws and regulations in Indonesia and finding the cheapest and easiest way to do business, which means horrible environmental devastation." Moas said government data shows that Asia-Pacific Resources International Ltd. (APRIL), Indonesia's second-largest producer of pulp, is still using rain-forest wood to supply its mill in Riau province, which has faced the most intense deforestation on Sumatra, a western island famed for its biodiversity.

APRIL spokesman Mike Zampa said Greenpeace is exaggerating the amount of rain-forest wood entering the mill. He said 65 percent of the fiber used is from plantation wood. He said the company develops only about half the land on its concessions in Indonesia, and the rest goes to conservation and community use.

Accidental and deliberate forest fires this summer in peat-rich Riau, also a major center for palm oil production, cast a haze as far as Thailand, angering Indonesia's neighbors. According to Greenpeace, between 2009 and 2011 the province saw 10 percent of its tiger habitat destroyed, putting stress on the dwindling population of 400 tigers in Sumatra. Over the same period in Borneo, a central region that abuts Malaysia, 1,400 sq. km of forested orangutan habitat was cleared, a third in areas licensed to palm oil concessionaires, Greenpeace says.

Richard Cronin, a Stimson Center expert on Southeast Asian environmental issues, said decentralization of decision-making that came with the dawn of democracy in Indonesia 15 years ago means that the central government has problems controlling what happens in provinces. He said commercial pressures, corruption and demand from a growing population for agricultural land take a toll.

Nigel Sizer, a forestry expert at the World Resources Institute, a Washington-based environmental research organization, said just 15 percent to 20 percent of Indonesia's palm oil is certified under industry standards, which critics say are too weak anyway. The institute says producers looking to adopt more environmentally friendly cultivation face complex regulations if they wish to shift their operations from forested to degraded land. And land is often improperly classified. In some cases, areas that should be protected can be used for plantations, while degraded land cannot. It cites Borneo, where there is an area of degraded land the size of Greece suitable for palm oil production, but more than one-third of that land is classified as forest that can't be used for agriculture.

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