

# CFA Newsletter



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### Around the World

## Preserving tree health: an opportunity to win friends, convince people and influence policy makers?



*Students appreciating the value of tree health!*

I know that I have one of the best “jobs” in the world, and that I am very lucky to be able to make this statement. Studying trees, their health, the fungi and insects that damage them very easily merges with holidays and other so called “time off” periods, often to the dismay of my husband and friends. Having said this, it is not only an interesting field of “study” but it is also important for the continued survival of trees and thus life on this planet.

During the course of the past decade alone, we have witnessed the appearance of numerous devastating tree pathogens and pests globally. Some of these threatened not only commercial

forestry operations but perhaps more importantly, woody plants in native ecosystems. The majority of these new pest and pathogen problems are as a direct result of the movement of infected plant material between regions and countries. As a pathologist/entomologist it is hard to imagine that anyone with a biology/botany/forestry background would even consider that moving entire plants, with soil/growth medium and all, is acceptable. Yet, this is still happening!

Diseases such as those caused by *Phytophthora ramorum* on rhododendrons, oaks and other trees, chestnut blight, Dutch elm disease, myrtle rust, Ceratocystis canker on plane trees, jarrah

### **CFA Newsletter**

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The views expressed are not necessarily those of the CFA.

die-back in Australia and more recently Ash decline in Europe, have resulted in some of the most eminent forest pathologists drawing up the “MontesclarosDeclaration”(www.iufro.org/science/divisions/division-7/70000/publications/montesclaros-declaration). This declaration calls for the banning of all trade in “plants and plant products determined to be of high risk to forested ecosystems but low overall economic benefit”.

Our great challenge must be to convince business people and policy makers that the Montesclaros Declaration and studies supporting the facts that it presents, is based on sound research, including economics. In the long run, it will cost less to be more careful about traded plant products than taking short cuts and moving entire plants around the globe.

Increasing numbers of people are becoming reliant on “modern” technologies as a safety net and an “excuse” to perpetuate their current activities. Here they believe that genetic manipulation, cloning and other technologies will provide fail-safe solutions to their tree/plant health and other problems. But, let me use two old clichés: “Change does not happen overnight” and “...there are no silver bullets” (the last being one of my mentor’s favourite analogies) to illustrate some of my views here. Neither these new technologies, nor any other tree health management strategy will work effectively if not combined in an integrated system that includes the basics of forestry, breeding, quarantine, good planning, research and communication.

As a recent **CFA Queen’s Award for Forestry** winner I have been asked to share some of the challenges of being a forest pathologist, as I perceive them. How to convince people that:

- The basics are important (eg. try cutting off your feet, or even just your toes, and then staying upright! The same goes for trees and root systems)
- There are no silver bullets! Keeping trees healthy is a long term commitment where prevention is far better than cure. In fact in the case of trees there are often no cures.
- One cannot resolve tree health problems rapidly neither with chemicals nor other approaches. Trees, fungi and insects are living organisms and ‘engineering’ type solutions don’t apply.
- The movement of germplasm (plants, seeds, floral decorations) is dangerous – strict quarantine is crucially important!
- Integrated tree health management is the key. One form of management, eg. selection and breeding, will not be sustainable without the others, eg. Good silviculture, site and species matching etc.

Working in Africa has many challenges, but it also presents incredible opportunities both in forestry as well as in other disciplines. The challenges include those mentioned above, of convincing people not to take short cuts, but also of course there are also immense, funding issues and infrastructure challenges. One of my biggest wishes would be to have the ability to secure employment with reasonable remunerations, adequate research funding and reliable infrastructure for the many really great, willing and enthusiastic scientists and foresters that I regularly meet during my work in many parts on this great continent. I am convinced that if one could persuade international companies involved in forestry, local governments, research organizations and tertiary institutions in Africa to work together, tree health and other forestry research in the area would flourish. What we need is a long term vision, not just a 10 or 20 year vision, but a 100 year (and greater) vision to successfully tackle

tree health and related social issues on the African continent, and globally. We should consider our great-grandchildren, not just our children.



*Extension work: From gardens of the “rich and famous” near Cape Town, torural farmers in, eg., Ghana and commercial plantations in South Africa.*



*Making new friends and learning about different cultures.*



*Sharing the first poster at an international congress and the joy of students on finding their first Armillaria infected tree on their own,*



*and appreciating the small and beautiful things in life.*

**Professor Jolanda Roux**

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# Association news

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## CFA launches Young Forester Award 2014

The **Young Forester Award** is designed to support the professional development of foresters below 35 years of age through the provision of a short-term work placement in a country other than their own and consists of a designated placement combined with a bursary of between £1000 and £1500 to cover a stay of between three- and six-months (depending on the placement selected) with established and renowned forestry organisations in order to meet their professional interest. The hosts might be major timber companies, research organisations or NGOs but they all share the desire to support the development of the next generation of foresters.

Applications for the **Young Forester Award 2014** are invited from students and young professionals below the age of 35 years on 30 June 2014 who are nationals of Commonwealth countries. Please note that as part of the CFA's continuing

support to Small Island Developing States (SIDS), for the 2014 Young Forester Award we particularly encourage applications from foresters from SIDS within the Commonwealth. In addition we encourage applications from women, those with disabilities, and nationals of developing countries.

Anyone who wishes to apply for the **Young Forester Award** should complete the Application Form from our website. The Selection Committee will discuss placement options with short-listed applicants who will then be asked to write up to 250 words on what they want to achieve on the placement. Applications should be sent via email to [cfa@cfa-international.org](mailto:cfa@cfa-international.org)

*PLEASE NOTE: The Young Forester Award is restricted to CFA members (applicants must have taken out an individual membership to qualify for application, i.e. membership via subscribing organisations or national forestry associations does not entitle application for the YFA).*

## CFA supports young Bangladeshi scientist



My PhD research, kindly supported by a small grant from the CFA through the **Young Scientist Research Award**, studies the biodiversity value of three types of forests in Bangladesh. There is more recognition in the conservation literature that managed lands beyond parks should also be considered for conservation, as well as understanding the need to involve local residents and traditional resource users into conservation planning. Managed forests are drawing increasing attention as means of balancing human use with conservation needs. Two major types of managed forest of interest are mature timber plantations and complex agroforestry systems. So I decided to study traditional agroforestry systems and compare them to mature timber

plantations for their conservation value, using mature secondary forests of similar age as the baseline. The sites I worked in were all plantation forests under the British Empire, but prior to that the precise details are unknown.

I worked in three protected areas and reserve forests in Bangladesh from 2006 till present in an effort to understand the role for traditional agroforestry in conservation. The sites where I work are small, fragmented and under heavy human use. They are still very rich in species, so it's very important to understand how to balance conservation goals with human needs. The agroforestry system I studied is called *bri*, or betel agroforestry, and it is carried out throughout forests in the northeastern hill region of Sylhet, Bangladesh. It is raised mostly by an ethnic group called the Khasia people who have live in and around these forests for generations. The timber plantations I studied were mostly monocultures of teak, raised by the state Forest Department (FD). Both these forest types are widespread in all the forest patches, interspersed irregularly with secondary forest. I studied secondary forest because it is the main type of unmanaged forest in this area, and there is very little primary forest in Bangladesh. I was also interested in studying secondary forests because as deforestation continues worldwide, they are an increasingly important forest type at a global level as well.

Because of pruning and weeding, *bri* is often blamed for biodiversity loss in the forests by state authorities and conservationists. But this has never been tested, and the issue has long been a source of contention between the Khasia communities and the FD. Because agroforestry is the only source of income for most Khasia, attempts to eradicate or relocate the practice outside the reserves have been unsuccessful and sometimes violent. The question of whether or not *bri* can support forest species is therefore critically important both to the communities and for conservation.

Although I will not share the details of my results widely until my papers are published, my results suggest that although it cannot replace the conservation functions of mature secondary forests, the traditional Khasia *bri* system has strong potential as a conservation tool if used appropriately. It has high levels of woody species richness and diversity in the canopy, largely in similar guilds to secondary forest, and for bird species it has lower richness and diversity, but can still act as alternate habitat for forest specialist birds. *Bri* lands within the PAs act as important habitat for native species, and I found no support

for existing Khasia agroforests in forest reserves to be relocated elsewhere. However they should also not expand into the remaining secondary forest, as secondary forests are the source habitat for birds. Both secondary forest and agroforestry are therefore important components of the conservation landscape, and Khasia betel agroforestry could work as part of mixed-species afforestation schemes for degraded lands beyond PA boundaries.

Shimona Quazi

## Give the CIF a Try! Special Offer

The Canadian Institute of Forestry (CIF) ([cif-ifc.org](http://cif-ifc.org)) is partnering with the CFA, as there is much commonality in our goals, objectives and approach, as well as a significant opportunity for collaboration and cooperation between our organizations. Help us to build and better engage our collective international network of interdisciplinary forest practitioners and professionals. With significant discounts for CFA members, consider becoming a CIF member today!

CIF Membership		
Country	Electronic <i>Forestry Chronicle</i>	Paper Forestry Chronicle
Developed	£25 (\$40CAD)	£90 (\$140CAD)
Developing	£12.50 (\$20CAD)	£77.50 (\$120CAD)

### Why become a CIF member?

Visit [www.cif-ifc.org](http://www.cif-ifc.org) to find out more about the CIF and see all that is included with membership.

Commonwealth Games 2014

## PHOTOGRAPHIC COMPETITION



The CFA in partnership with the Commonwealth Woods, a legacy project of the 2014 Commonwealth Games to be held in Glasgow is pleased to announce the launch of 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!

Please send your photos to [cfa@cfa-international.org](mailto:cfa@cfa-international.org). The competition will close on 31st December 2013.

Good luck!

## Erratum

The article 'News from Guyana' in the previous CFA Newsletter, No. 61, contained the following errors: Firstly, the reference to the '2007 revision of the Forests Act 2007' should be the '2007 revision of the

Forests Act 1953/1997'; that is, the original version was enacted in 1953 and the last valid revision was in 1997. Secondly, Bai Shan Lin is not 'party owned' but 'partly owned'.

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# Forest Scenes

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## What is the Great Green Wall for the Sahara and the Sahel Initiative (GGWSSI)?



**D**esertification directly affects 1 billion people worldwide and particularly in Africa, where two-thirds of the land cover consists of drylands and deserts. Several studies, as well as isolated experiments in Africa, particularly in the Sahel, have shown that deserts and arid lands in Africa are not only problems but also opportunities that can be valued and used to improve the livelihoods of people living in these areas. The Green Great Wall Initiative, endorsed by African Heads of State and Government in 2007, was developed as a response to tackle the detrimental social, economic and environmental impacts of land degradation and desertification in the region, in particular by supporting local communities' efforts in sustainable management and use of natural resources. The Initiative aims to prevent and combat desertification through sustainable management and restoration of dryland forests, range lands and natural resources. At the same time, its actions are designed to contribute to climate change adaptation and mitigation, biodiversity conservation, food security and poverty alleviation of the population in the areas concerned.

**The overall goal of the GGWSSI is to improve production systems' resilience to climate change for increased food security** in the circum Sahara (Northern Africa, Sahel region and Horn of Africa), through actions and measures that promote and provide support to proven or innovative approaches to integrated sustainable land and water management as well as promoting the implementation of social protection initiatives at local level in favor of households vulnerable to

climate risks. In other words, the Great Green Wall Initiative does not target only the establishment of a forest or a wall of trees from Eastern to Western Africa, even though the concern related to the strengthening of the plant cover is addressed with the highest attention.

The GGWSSI offers **a unique opportunity** to effect significant changes in scaling up governments' investments to promote food security and combat poverty through both policy inputs and innovative grass-roots operations that strengthen good practices including agriculture, livestock, forestry, water resources and rural infrastructure.

The specific **added value** of the GGWSSI is to combine governance, sustainable management of land and water, production insurance and social protection against climate change (cc), in order to secure producers' investment and improve local livelihoods. Another important added value is linked to the fact that the programme does not focus on short term aspects of drylands development, but supports the adoption of a **medium to long term and comprehensive approach** to desertification, land degradation and drought (DLDD), climate change adaptation and mitigation, loss of biodiversity and supporting a **functional coordination** centered on Sustainable Land Management (SLM).

The GGWSSI seeks **effective partnerships** with all stakeholders (state and non-state actors, technical and financial partners, local governments, research, grass-roots organizations), and introduces several **innovative approaches**. Based on a 'learning by doing' approach, the GGWSSI aims at increasingly **applying SLM best practices** on SLM, climate resilience to development policies and practices and building its approach on on-going programmes. The initiative may include a set of integrated interventions related to multi-sectoral issues affecting the people livelihoods in Sahel-Saharan zones of Africa. These multi-sectoral and multidimensional interventions affect a large range of cross-cutting issues, building up a mosaic of sustainable land management interventions, that is, the viability and restoration of rural farming and productive systems (via farmer managed natural regeneration, best practices in agriculture, livestock, forestry, etc.); the development of rural infrastructure for production, processing and marketing of rural products; the diversification of economic activities and wealth creation; the integration of gender and youth in development, the sustainable forest management from the forest to the market, including sustainable harvesting, processing and marketing of wood and non wood forest products such as gums and resins; the forest landscape restoration including natural regeneration and reforestation; fighting sand encroachment through windbreaks and sand dune stabilization; sustainable management and restoration of rangelands; sustainable land and water management including water harvesting techniques; etc.



## Achievements

The GGWSSI is a flagship program of NEPAD<sup>1</sup>-Environment. African Union Commission (AUC) was given in 2007 and 2009, mandate to coordinate and facilitate its implementation. With respect to this mandate, AUC with the support of FAO, European Union and other partners, including UNCCD institutions, is implementing two projects that aim at putting in place an enabling environment for the implementation on the ground of the initiative in 13 countries (Algeria, Burkina Faso, Chad, Djibouti, Egypt, Ethiopia, Gambia, Mali, Mauritania, Niger, Nigeria, Senegal, and Sudan). This enabling environment includes:

1. Defining a common and shared vision of the initiative by developing a common strategy for the implementation of the initiative fully aligned to the UNCCD Ten years Strategy. The strategy was adopted by the 14<sup>th</sup> session of AMCEN (African Ministerial Conference on Environment) in September 2012 and endorsed by the 20<sup>th</sup> African Union Assembly in January 2013.
2. Developing National action plans for the implementation of the initiative that are mainstreamed in CAADP<sup>2</sup> investment plans. Ten countries have already developed and are using such tools: Burkina Faso, Chad, Djibouti, Eritrea, Ethiopia, The Gambia, Mali, Niger, Nigeria and Senegal.
3. Development of cross border projects to ensure that the initiative is also dealing with sustainable management of trans-boundary and shared natural resources in the selected area for the implementation of the GGWSSI.
4. Development of a partnership and resource mobilisation platform as well knowledge management and technology transfer on best SLM practices.
5. Developing a capacity development strategy and action plan for the implementation of the GGWSSI that complement National Capacity Self – Assessments (NCSA) and focusing on capacities needed for the implementation of the GGWSSI.

In addition to AUC's efforts, other stakeholders are investing to "down the GGWSSI to earth". This includes the World Bank and the GEF which have designed a programme covering 12 countries<sup>3</sup> participating to the GGWSSI initiative. The program budget approved by GEF Council in May 2011 and including co-funding amounts USD: **837.08 Million**. Four operations are already approved by GEF and world Bank Boards: Burkina Faso for USD: 77.41 million, Chad for USD: 34.26 millions, Nigeria for USD: 508.59 millions and Togo for USD: 16.96 million.

Eleven countries, under the leadership of the former President of Senegal, Me Abdoulaye Wade, put in place an Agency to serve eleven countries in their efforts in implementing the GGWSSI.

Achievements so far reached by the Agency are:

Development of a five year regional plan for the implementation of the initiative and development of a scientific collaborative platform between the Agency, French Institute of Research for Development and Brazil.

<sup>1</sup> New Partnership for Africa Development.

<sup>2</sup> Comprehensive Africa Agriculture Development Programme (NEPAD – Agriculture).

<sup>3</sup> Benin Burkina Faso, Chad, Ethiopia, Ghana, Mali, Mauritania, Niger, Nigeria, Senegal, Soudan and Togo.

## Perspectives

Major challenges that the GGWSSI is facing are:

- The need to clarify the institutional setting of the initiative. In this regard, AMCEN at its 14<sup>th</sup> session decided to transform the Pan African Agency into a specialized agency of the African Union Commission, so that there will be only one leading body: AUC and Africa will speak with one voice on issues related to the GGWSSI implementation.
- The need to expand the GGWSSI activities to all the countries targeted by the programme. Indeed, the GGWSSI is designed by the African Union Commission to cover more than twenty (20) North African and Sub Saharan countries in Africa. In all these countries, the AUC will continue supporting the establishment of an enabling environment for the implementation of the initiative, as well as supporting countries to mobilize resources for the implementation of their national action plans and cross border projects. Through the implementation of the harmonized regional strategy, AUC will work towards bringing financial and technical agencies and partners to align on the priorities identified by AU member countries, so that sustainable land management is upscaled across Africa drylands mosaics.



**Francois Tapsoba (CTA GGWSSI) and Nora Berrahmouni (Forestry Officer, Arid Zones FAO)**

For more information, and to download FAO's publication on the Great Green Wall, visit [www.fao.org/partnerships/great-green-wall/en/](http://www.fao.org/partnerships/great-green-wall/en/)

# Ash Preservation in the UK\*



Fig 1. Deeply fissured bark on 200-yr-old Ash.



Fig 2. Dappled shade beneath an old, multi-stemmed Ash.

One of the commonest native hardwood trees in Britain, Ash (*Fraxinus excelsior* L) is threatened with extinction by an exotic pathogen *Hymenoscyphus pseudoalbidus* Queloz *et al.* (teleomorph), imported into Poland probably from Japan in the early 1990's, from which it has spread throughout much of Europe including Britain. At this stage, there seems little likelihood of finding enough resistant trees from which to breed a replacement population for the several hundreds of millions of trees that might be killed in Britain over the next 20 years or so. It is my view, therefore, that we should be collecting germplasm (seeds or buds) now for possible inclusion in breeding programmes many years hence, when the nature of resistance is more fully understood. Collecting seeds for long-term storage is not new, and is already being undertaken on a large scale at the Millennium Seed Bank Partnership, at Kew, England.

Seed collection is straightforward from those trees which are clearly female, or from those branches which bear seeds. However, there are some desirable trees from which, for a number of reasons, seeds are unavailable. Here, it is suggested that we follow the technique developed in the United States (Volk *et al* 2009) for preserving live winter-collected buds for cryopreservation.

Key to the proposal is the selection of trees. Instead of limiting collection to those few individuals which might show some resistance, or to those of superior form or vigour, we need to make as wide a collection as we can manage so that we capture both the geographical variation in the species and other genes that have allowed individual trees to survive, often for long periods and in testing environments. These are also the individuals which are providing habitats for other species. For example, as it ages, bark becomes deeply fissured (Fig 1). That, combined with its relative alkalinity and by the dappled shade cast on the bark by the open crown (Fig 2), provides an environment that encourages the growth of a variety of epiphytic plants

and a place for invertebrates to survive in. Some of both are specific to Ash. Ash is also prone to losing branches, and the wounds thus formed are often colonised by wood-rotting fungi that hollow the stem and provide nesting sites for birds. Indeed, sporophores of some of those fungi which are specific to Ash also provide habitat for particular invertebrate species. Finally, individual Ash trees that have been linked to place names and local customs should merit preservation.

It is not possible to provide a definitive set of characteristics to look for, because individual trees are influenced by the stresses they have been exposed to, be it by natural events (exposure, insect attack, storm damage, drainage etc.) or through human intervention. In relation to the latter it is worth noting that man has relied on Ash to provide a timber of great utilitarian benefit for building, transport, agriculture and fuel for some 6000 years. It was probably among the first species to be deliberately managed in the Neolithic. Some of the existing gene pool will reflect the selections made by those early foresters. Indeed, Ash are among the oldest living plants in Britain, methodically managed over hundreds of years by coppicing (Fig 3): Rackham concluded that a few of these stools may be 800 years old, and still thrive after being coppiced every ten years (that is, 80 times defoliated). These veterans from testing environments would be worthy candidates for including in British collections of germplasm. However, the relative youth of the coppice growth (<10yrs) precludes the collection of seeds, and winter buds would need to be taken for cryopreservation.

Not mentioned in the paper is an estimate of the numbers of trees that might be included in the collection programme, nor a description of the organisation needed to implement the process. This is because there have been no discussions on these topics at the time of writing. An uninformed guess puts the number at around 1000 individual trees, and these could be identified and managed by around 500 volunteers, selected from the nation's parish and community councils. Details of each tree would be held in a central data-base, where the fate of the tree would be recorded. When it is felled, timber samples would be taken for measurement of structural factors (moduli of rupture and elasticity, density, growth rates etc.) to provide more information for future breeding programmes.

\* This article is a brief précis of an article I wrote for the journal *Scottish Forestry* 67(2) 2013, pp 12–16, titled *Preservation of genetic diversity of Ash (*Fraxinus excelsior*) in Britain: some thoughts*.





Fig 3. An old (300yr) Ash coppice stool with adventitious stems too young to produce seed, but which are very susceptible to Ash dieback. To preserve the genes of this tree, buds would need to be collected in the dormant season.

As yet, neither the philosophy behind this scheme or the way it would be managed has been discussed with the authorities.

**Jim Pratt**

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## International Conference on Forests for Food Security and Nutrition – and the revision of the Millennium Development Goals

The International Conference on Forests for Food Security and Nutrition was held at the headquarters of the Food and Agriculture Organization of the UN (FAO), Rome, Italy, from 13–15 May 2013. It was organized by FAO in partnership with Bioversity International, the Center for International Forestry Research, the World Agroforestry Centre and the World Bank. It was attended by more than 400 participants, from governments, civil-society organizations, indigenous and other local communities, donors and international organizations of more than 100 countries. Their key messages are summarized below, with some explanatory notes in [square brackets]:

- The role of forests and trees outside forests [encompassing agroforestry systems, other trees on farms, and trees in non-forested rural landscapes] in the fight against hunger demands much greater attention and should be integrated with strategies for food security and nutrition.
- Food security is grounded in diversity – in terms of biota, landscapes, cultures, diets, production units and management. Forests and trees are critical for maintaining that diversity.
- The ecosystem services provided by forests and trees make essential contributions to forest dependent communities and agriculture by, among other things, protecting soil and water, maintaining soil fertility, regulating the climate, and providing habitat for wild pollinators and the predators of agricultural pests.
- Forest foods and tree products have been important components of rural diets for millennia and today

provide essential nutrition for millions of people. More than one-third of the world's people rely on woodfuel for cooking.

- Forests, trees outside forests and the sustainable management of these resources are crucial for ensuring the resilience of food-production systems in the face of climate change and economic, social and political instability. Forest and tree based sources of income can contribute to building resilience.
- There are opportunities to use more forest species, especially plants and insects [see for example FAO Forestry Paper #171, *Edible Insects, future prospects for food security*], for the large scale production of food products. However, deforestation and forest degradation risks the loss of many such species.
- The single biggest cause of forest loss is agricultural expansion, but there is potential for both increasing agricultural production and protecting forests, including through the restoration of degraded forest land, the greater use of trees in agriculture, and the alignment of policies and institutional frameworks to that end.
- Secure land and forest tenure and more equitable access to resources for local communities and women will encourage sustainable forest and tree based approaches to food security and nutrition.
- There is a need to retrieve, document and make better use of traditional knowledge and to combine it with scientific knowledge to increase the role of forests and trees outside forests in food security and nutrition.



- Women often have specialized knowledge of forests and trees in terms of species diversity, uses for various purposes, and conservation and sustainable management practices, but the role of women in ensuring the food security and nutrition of forest-dependent communities is underappreciated.
- Greater collaboration at the national and international levels is needed to improve data collection on, and the communication, reporting and monitoring of, the contributions of non-wood forest products, forest ecosystem services and other forest and tree related aspects of food security and nutrition.
- Training in the management of sustainable forest enterprises can help forest-dependent communities, particularly women and youth, to gain access to equitable value-chains, such as those applied in fair trade, thereby improving the food security and nutrition of such communities and helping them to capitalize on their traditional knowledge.
- Governments, civil society, indigenous peoples, bilateral and multilateral development assistance agencies, the

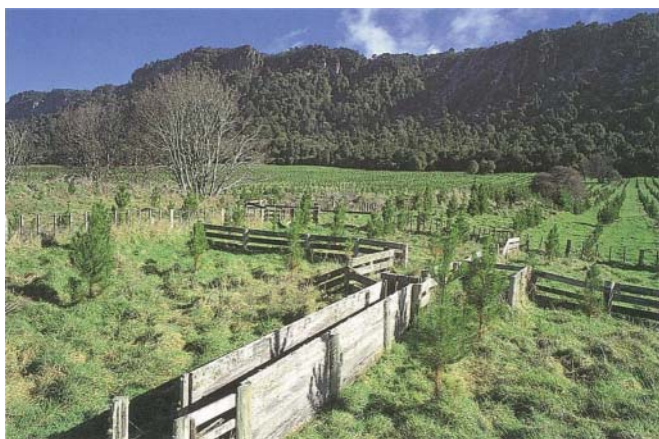
private sector and other stakeholders are invited to strengthen the contributions of forests and trees outside forests to food security and nutrition through a number of feasible actions, [which are listed in the full summary].

For a full report of the Conference, including the recommendations, see [http://foris.fao.org/static/food\\_security/conference\\_summary\\_En.pdf](http://foris.fao.org/static/food_security/conference_summary_En.pdf)

Given that the first of the eight Millennium Development Goals is the eradication of extreme poverty and hunger, and that countries are beginning to think of their revision by 2015, what will this Conference contribute to the revision exercise and what will be its importance to the forestry sector of developing countries? The goal set in September 2000 was to halve the rate of extreme poverty by 2015, and this has not only been achieved but was attained five years early. Will new targets be set for the next period, that aim to halve the poverty rate again, and will the planners realize the importance of forests to achieving this worthy goal?

**Jim Ball**  
CFA President

## The consequences of three decades of uncoordinated plantation establishment in New Zealand



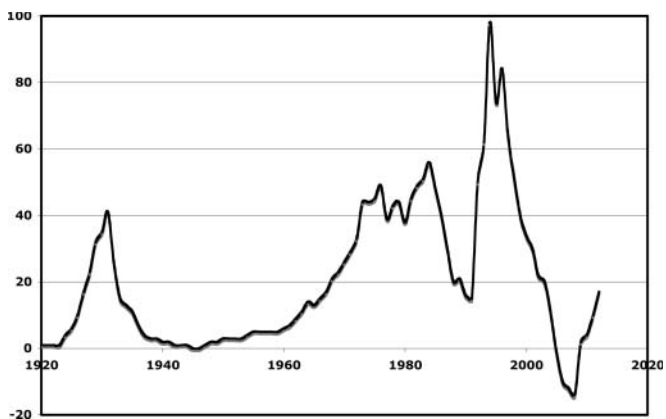
*Sheep yards planted with radiata pine (Photo: Scion)*

In the late 1970s and early 1980s the New Zealand Forest Service closely monitored annual planting rates. To ensure that the rate of new plantation establishment was within the target (40,000 ha per year) set by Government the Forest Service made up for any planting shortfall by the private sector. This was to ensure an even wood supply in the future.

As part of the economic restructuring in the late 1980s the NZ Labour Government broke up the Forest Service (and therefore abolished its monitoring role). It was argued that free enterprise could make better and more rational decisions. The Labour government also introduced a taxation regime that discouraged new plantation establishment. Not surprisingly the rate of new planting declined. The incoming National Government of 1991 introduced favourable taxation treatment (plantation owners were able to offset most of their plantation

establishment costs against income from other sources). There followed an explosion in plantation establishment. This was greatly aided by a fall in farmland prices (the result of removing agricultural subsidies). In 1994 almost 100,000 hectares of plantations were established (a maximum for the country and more than twice the maximum rate of annual planting achieved during the planting boom of the early 1930s). In the 5 years following 1995 the rate of new planting declined. Since 2000 there has been very small increase in the plantation estate. Any new planting being offset by the conversion of established plantations to farmland – hence a negative net area gain.

The New Zealand annual rate of new plantation establishment for the period 1920 to 2012 is shown in the following figure.



*New Zealand net plantation establishment 1921 to 2012 (area in thousand of hectares per year)*

The predicted consequence of this very uneven rate of new planting is that there will be a peak wood supply in the 2020s to be followed by a major decline in the 2030s and 2040s.

Unless there is a co-ordinated effort owners of the 1990s plantings will all be trying to market their wood at the same time. Without co-ordinated planning there will be very serious consequences for New Zealand. Forest owners will have to compete for harvester labour, transport, markets, etc. Wood prices will inevitably decline as overseas buyers increasingly become aware of the NZ's wood surplus. Without a co-ordinated effort, overseas wood buyers will be able to "play" one forest owner off against another. The result could reduce the returns of both forest owners and the NZ economy. It could also result in a lack of investment in new planting – who will be attracted to invest in plantations when the current wood price is so poor?

The prices for pruned logs is expected to decline the most. The current price for pruned logs is so low that pruning is now considered a marginal investment. If the market is flooded with pruned logs (and NZ is the only significant global supplier) the price could fall even more and there would be even less interest in pruning than there is now. That in itself will have serious consequences for the industry. If framing (and not the production of clears) is to become the basis of NZ forestry then there could be less international interest in NZ forestry because South America offers greater potential for investment in framing forestry.

As the annual global harvest of industrial wood is about 1.5 billion m<sup>3</sup> the New Zealand harvest (currently about 20 million m<sup>3</sup>) is not globally significant but we are a significant exporter of logs (more than half of our wood harvest is exported as logs). An increased supply from New Zealand could reduce the global price for logs as buyers "play" us off against other international log suppliers. Unfortunately New Zealand could be seen as being the cause of any decline in global wood prices.

A concentrated planting effort followed by almost no new planting happened in the past. In the period 1925 to 1935 most of NZ original plantations were established. In the period 1935 to the mid 1950s there was almost no new planting. If the earlier plantings had been harvested at about age 35 (then considered to be the average rotation length) there would have been a peak wood supply in the late 1960s and the early 1970s. This peak in the wood supply would have been followed by a very serious decline in the wood harvest for the next 20 years. This did not happen because of a co-ordinated effort to "smooth



*Logging ship heading to Korea (Photo: Scion)*

out" the wood supply – some stands were left to grow on rotations far longer than originally intended. Other stands were late thinned to further lengthen the rotation. This very important co-ordinated effort has been poorly documented – for example; I can find neither any reference to it in the Annual Reports of the N. Z. Forest Service nor in any publication. The big difference between what happened in the past and the present situation is that while most of the plantations were originally owned by either the State (NZ Forest service) or large companies (especially NZ Forest Products) many of the new plantations are owned by about 100,000 smaller owners – forest partnerships, farm foresters, individual investors, etc.

To prevent what could be a disastrous development for the whole NZ forest industry as well as the nation there has to be urgent discussions of possible actions to "flatten" the peak wood supply of the 2020s (and so prevent the inevitable wood supply shortage that will follow). To leave the matter to the "free market" is a certain way to invite the decline in a faith in plantation forestry. The New Zealand economy could be adversely affected. A co-ordinated effort could turn, what, if left to a free market, will be disaster into one in which New Zealand forestry sector and the New Zealand economy are a real winners.

**Wink Sutton**

*Dr Wink (WRJ) Sutton is a retired New Zealand forester. Wink was a scientist for 20 years at NZ's Forest Research Institute before being appointed to a senior executive position with Fletcher Challenge Forests*



# Why young people start forest fires



*Wildfires can be devastating but their causes are not always clear*

**W**ildfires are growing in frequency in many countries around the world, probably exacerbated in part by global climate change. Human causes are considered to outweigh natural ones, and in many countries arson predominates over accidental causes. In South Wales, deliberate fire setting appears to be a frequent occurrence, and recent research has shown it to be endemic

and tolerated by many sections of society<sup>1</sup>. Part of this study involved a review of the literature into fire setting, and this has recently been published in *Quarterly Journal of Forestry*<sup>2</sup>

Surprisingly, there is a comparative lack of research demonstrated in anglophonic literature into social-psychological drivers for deliberate setting of wildfires. Most published evidence on the motivations behind fire setting are derived from psychological studies, especially on research based on inmate populations. This has resulted in literature which covers studies of atypical firesetters, rather than more mundane, socially driven firesetters. However, those studies which have examined fire setting from a social perspective suggest that the practice should not necessarily be considered as criminal or abnormal in the psychological sense. A useful distinction can be made between those who act in groups and those who act alone, the former more likely to light fires to generate excitement or alleviate boredom rather than intend to maliciously cause damage. Many studies link firesetting to young people, reinforcing the need to consider firesetting as a particular form of anti-social behaviour. In the UK, several recent studies have examined the relationship between social deprivation and fire incidence and found statistically valid links between them. Such results have a bearing on how society and communities seek to tackle wildfire arson. It is recommended that further studies on wildfire arson should consider the geographical and sociological contexts – perhaps more than psychological ones.

**Andy Moffat**

Research Fellow, Centre for Forestry and Climate Change, Forest Research, UK

<sup>1</sup> JOLLANDS, M., MORRIS, J. and MOFFAT, A.J. 2011. *Wildfires in Wales*. Forest Research, Farnham. [http://www.forestresearch.gov.uk/pdf/Wildfire\\_in\\_Wales\\_final\\_report.pdf/\\$FILE/Wildfire\\_in\\_Wales\\_final\\_report.pdf](http://www.forestresearch.gov.uk/pdf/Wildfire_in_Wales_final_report.pdf/$FILE/Wildfire_in_Wales_final_report.pdf)

<sup>2</sup> JOLLANDS, M., MOFFAT, A.J. and MORRIS, J. 2013. 'Spreading like wildfire' – the importance of understanding social drivers of firesetting. *Quarterly Journal of Forestry* 107, 216–222.

# Wings over Wytham: drone technology comes to Oxford



*Dr. Kettle with assembled drone*

In June, the whine of a drone sounded over Oxford's Wytham Woods. It was not the first time airborne eyes have been seen there in the skies, but this time it was in the form of a new lightweight drone technology that enables collection of airborne imagery and movies. These Unmanned Aerial Vehicles (UAVs) are becoming more and more affordable, reliable and simple to operate, and have great potential in natural resource research and management.

Wytham is an area of ancient semi-natural woodland owned by the University of Oxford<sup>1</sup> and used for environmental research. In fact, it is one of the most researched areas of in the world, and a UK Site of Special Scientific Interest (SSSI). The University's work there embraces the history of the woods, birds, trees and even its artistic representation.<sup>2</sup> But it is the forest research, led by Dr. Yadvinder Malhi, Professor of Ecosystem Science, School of Geography, and Programme Leader of the Ecosystems Group of the Environmental Change Institute (ECI)<sup>3</sup>, that was the main reason for the drone's appearance over the canopies.

An important part of Prof. Malhi's work is concerned with the Global Ecosystem Monitoring network (GEM), which is an international effort to measure and understand forest ecosystem functions and traits, and how these will respond to climate change. Wytham forms part of this network.<sup>4</sup> The potential for drones to further this research had been recognised, and a

demonstration organised for the University's Oxford Centre for Tropical Forests (OCTF),<sup>5</sup> also directed by Prof. Malhi.

The drone was demonstrated by a team from the Swiss Federal Institute of Technology (ETH)<sup>6</sup> and the Swiss company Research Drones. ETH was represented by Dr Chris Kettle working on Ecosystem Management at the Institute of Terrestrial Ecosystems<sup>7</sup>, and postdoctoral researcher Dr. Chue Poh Tan<sup>8</sup>. The main technical demonstrator was Dr. Remo Peduzzi, co-founder and managing director of ResearchDrones LLC<sup>9</sup>. The company works closely with a sister company ConservationDrones<sup>10</sup> to develop and provide training in the use of drones. Dr. Peduzzi is also a member of DIYDrones<sup>11</sup>, an online community for developing personal UAVs.

Dr. Peduzzi started the demonstration by explaining the basic design and components of the drone, which in this case looked much like a large (2m wingspan) traditional radio-controlled model aeroplane. But there the similarity ended. Developments in electronics, battery power, and digital photography are what makes drone technology now possible. Propulsion was via a state-of-the-art battery and pusher propeller on an electric motor. There was an onboard programmable autopilot that could fly the plane on a preplanned flightpath, or overridden using hand-controls. And the imaging was taken care of by a downward facing still camera and a forward facing video camera.

Throughout the trial, emphasis was placed on the relative ease of construction, maintenance and operation of the drone, once training had been given. Also the fact the technology is relatively cheap – the whole set-up coming in at about £3000. The body of the drone was made of expanded polystyrene, which can be unbent or glued back after minor prangs. The basic airframe was based on designs of the German company Bormatec.<sup>12</sup> ResearchDrones' version was suitably Swiss-coloured in white and red. For transport, the drone can easily be disassembled, and cheaply shipped in a cardboard container.

A laptop, with appropriate open-source software, is used to program the autopilot to fly at predetermined courses and

<sup>1</sup> Wytham Woods homepage: <http://www.wytham.ox.ac.uk/index.php>

<sup>2</sup> University studies at Wytham in videos: <https://www.oxfordtoday.ox.ac.uk/page.aspx?pid=2869>

<sup>3</sup> Professor Yadvinder Malhi: <http://www.eci.ox.ac.uk/people/malhiyadvinder.php>

<sup>4</sup> GEM research Sites: <http://gem.tropicalforests.ox.ac.uk/>

<sup>5</sup> Oxford Centre for Tropical Forests (OCTF): <http://www.tropicalforests.ox.ac.uk/>

<sup>6</sup> Swiss Federal Institute of Technology (ETH): ETH Life – the online magazine [http://www.ethz.ch/index\\_EN](http://www.ethz.ch/index_EN) Article on drone in action for the rainforest: [http://www.ethlife.ethz.ch/archive\\_articles/120227\\_drohne\\_per/index\\_EN](http://www.ethlife.ethz.ch/archive_articles/120227_drohne_per/index_EN) ETH website on Unmanned Aerial Vehicles research group <http://www.uav.ethz.ch/>

<sup>7</sup> ITES – Ecosystem management. Dr Chris Kettle: <http://www.ecology.ethz.ch/people/obass/ckettle>

<sup>8</sup> ITES – Tan, Chue Poh: <https://edit.ethz.ch/ecology/people/pstdocs/tanc/index>

<sup>9</sup> ResearchDrones LLC homepage <http://researchdrones.com/>

<sup>10</sup> ConservationDrones LLC homepage <http://conservationdrones.org/>

<sup>11</sup> DIY Drones homepage <http://diydrones.com/> Dr. Remo Peduzzi's page on DIYDrones <http://diydrones.com/profile/RemoPeduzzi>

<sup>12</sup> Bormatec Unmanned Vehicles <http://bormatec.com/>



altitudes, determined by waypoints which can be changed during flight if needed. The program also determines when photos are taken. The autopilot contains much of the sensory technology of smart phones (GPS, orientation, etc.). Provided the drone is within radio contact, it can fly out of sight (as it did in Wytham). The autopilot can be overridden when necessary, such as for landing, since the GPS is not accurate enough to ensure a soft return to earth. There is no undercarriage – just a skid shaped underbelly to the fuselage. The propeller is protected by being elevated at the rear.

The drone is sufficiently small and lightweight to be launched by hand, but there has to be adequate space to allow operating height to be reached, and for easy landing. At Wytham, this was done in the surrounding fields. Once aloft, progress can be monitored on the laptop, which also shows images produced by both cameras in windows. The forward facing video camera was one used by sports enthusiasts on their helmets, and enabled visual flying of the drone if needed. The downward facing camera was a standard digital one made, in this case, by Canon. More advanced sensing instruments (infrared, for example) can be mounted.

The demonstration worked without hitch, and certainly showed the potential for collection of airborne imagery and movies at a price affordable by modest budgets. It is a technology in the process of development, and depends on close collaboration with developers and users to continually improve it. The resolution of photos will far outstrip that of any available satellite imaging, and the images are produced in real time. Applications are clearly many, including tracking wildlife, identifying species composition, and monitoring timber harvesting.

A more advanced drone technology (not seen), also being explored by ETH and ResearchDrones, is typified by so-called quadcopters. These are helicopters in the form of flying platforms supported at the corners by four (sometimes more) propellers. Power comes from the same types of batteries and electric motors. These devices are inherently unstable, and require a processing unit which can be programmed using algorithms to make the quadcopter perform almost any manoeuvre,

solo or in concert with other machines, and using tools. The possibilities seem endless. A TED video demonstration<sup>13</sup> by Dr. Raffaello d'Andrea of ETH will give readers a very good overview of the possibilities.

The disadvantage of quadcopters over conventional winged craft is their limited range. All the power goes into lift, and battery life is only some 15 minutes, whereas a winged drone can fly for up to two hours using much less energy. Both craft are moderately resistant to wet conditions, but are best flown in the dry. Because of the manoeuvrability of quadcopters, applications can embrace closeup observations of tree crown, and even collection of botanical samples with appropriate harvesting tools. I remember looking at such possibilities some twenty years ago, but they were not practical. Now they certainly are! Even toy quadcopters are readily available.

This article needs to finish on a cautionary note, as did Dr. Peduzzi in his demo, and Dr. d'Andrea in his video. At Wytham, the red kite flying alongside the drone, and the sheep in the fields, were not the only ones to eye drones with suspicion. The technology is currently being used in countries where drones are understood by their military uses. As Dr. Peduzzi explained, a certain amount of careful education about this is needed when training. It can even go as far as assuring local security forces that, if they have misgivings about an unidentified drone such as he demonstrated, the best way to shoot it out of the sky is by aiming for the tail (where the engine is)! But the conclusion of both researchers is that the best counter to misuse is right use – it is a technology that is here to stay, and it can be of immense benefit.

I mustn't drone on – this should give readers plenty of leads if they want to explore the technology more. We look forward to following how Prof. Yadvinder uses it at Wytham!

**Marcus Robbins**  
CFA Treasurer

<sup>13</sup> TED video on Quadcopters by Raffaello D'Andrea (Professor of Robotics, ETH) [http://www.ted.com/talks/raffaello\\_d\\_andrea\\_the\\_astounding\\_athletic\\_power\\_of\\_quadcopters.html](http://www.ted.com/talks/raffaello_d_andrea_the_astounding_athletic_power_of_quadcopters.html)

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## Publications

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### Russian Forest Industry in 2012

#### WhatWood

The Russian Forest Industry in 2012 report provides insight into all forest industry sectors and main trends based on the year 2012. Key indicators such as production, consumption, export and import volumes and price fluctuations are examined.



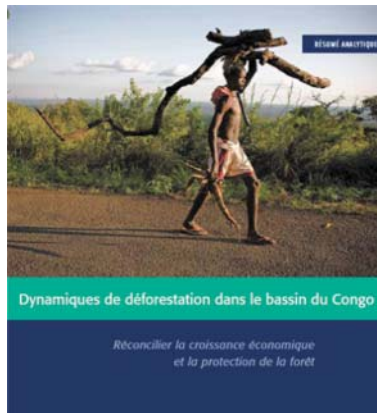
The report covers an analysis of the Russian economy and its influence on the forest industry. It also looks at the major trends in forest-related legislation in Russia and the effects of new state initiatives, as well as providing an overview of the key events of the industry in 2012.

# Economic Growth and Drivers of Deforestation in the Congo Basin

Carole Megevand, with Aline Mosnier, Joël Hourticq, Klas Sanders, Nina Doetinchem, and Charlotte Streck (Profor).

Though the deforestation rates in the Congo Basin countries have historically been low, the trend is likely to change dramatically due to the combination of many different factors: population increases (and associated expansion of subsistence agriculture and fuelwood collection); local and regional development; and the rise in global demand for commodities.

The countries of the Congo Basin face the dual challenge of developing local economies and reducing poverty, while limiting the negative impact of growth on the region's natural capital.

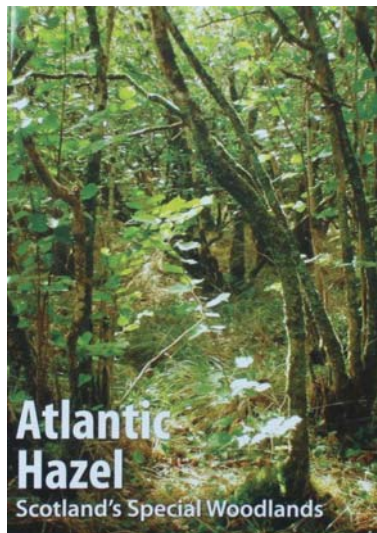


PROFOR supported an in-depth, multi-sectoral analysis of the major drivers of deforestation and forest degradation for the next decades in all six of the Congo Basin countries (Cameroon, Central African Republic, Gabon, Democratic Republic of Congo, Equatorial Guinea and Republic of Congo). The overall study was led by the World Bank Africa Region. A team from the International Institute for Applied Systems Analysis (IIASA) led a modeling exercise, based on the GLOBIOM model but tailored to the Congo region, to investigate drivers of deforestation by 2030 and assess the impacts of various “policy shocks” (such as: increased international demand for biofuel; improved transportation infrastructure; improved agricultural technologies; etc). The approach also relied heavily on the inputs from multi-stakeholder regional workshops and in-depth sectoral reports (available <http://www.profor.info/node/1887>).

## Atlantic Hazel: Scotland's Special Woodlands

Sandy Coppins & Brian Coppins (Atlantic Hazel Action)

The Atlantic hazelwoods are one of Scotland's most ancient woodlands. They are older by far than the Atlantic oakwoods of Scotland, and older than some of the Caledonian pine-woods. Together with birch, hazel was one of the earliest woody species to establish along the western edge of Scotland, as far back as 10,000 years Before Present. Pollen evidence points to vast areas of western Scotland being dominated by hazel for hundreds of years. In that time, other plants and animals established amongst the hazel, forming what is today a unique habitat of great antiquity. Hazel can occur as wind-clipped coastal woodland, as small to large stands amongst



(or adjacent to) other woodland, or as an ‘understorey’ with emergent trees such as ash and oak.

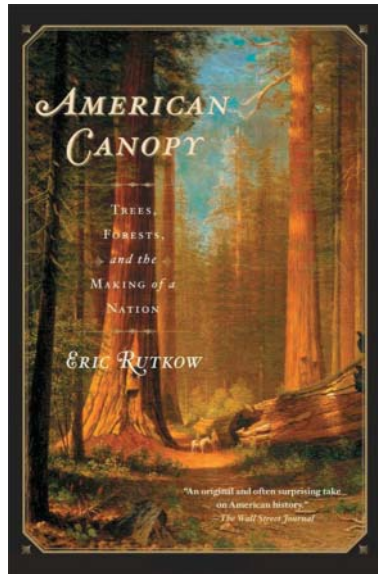
This book aims to change the way people think about hazel and in particular the hazel woods along the Atlantic seaboard. Until recently, most ecologists perceived hazel as just a coppiced shrub, the commonest component of the underwood in our widespread and enduring coppice-with-standards silvicultural system, and dismissed the hazel-dominated woods of the north and west as scrub – if they recognised them at all. Here, however, we are presented in a lavishly illustrated form with a more discriminating view, which sees the Atlantic hazel woods as a distinctive and highly significant type of woodland, the rain forest – no less – of the British Isles.



## American Canopy

Eric Rutkow (Scribner Book Company)

Eric Rutkow's "deeply fascinating" (*The Boston Globe*) work shows how trees were essential to the early years of the republic and indivisible from the country's rise as both an empire and a civilization. Among *American Canopy's* many captivating stories: the Liberty Trees, where colonists gathered to plot rebellion against the British; Henry David Thoreau's famous retreat into the woods; the creation of New York City's Central Park; the great fire of



1871 that killed a thousand people in the lumber town of Peshtigo, Wisconsin; the fevered attempts to save the American chestnut and the American elm from extinction; and the controversy over spotted owls and the old-growth forests they inhabited. Rutkow also explains how trees were of deep interest to such figures as George Washington, Thomas Jefferson, Benjamin Franklin, Teddy Roosevelt, and Franklin Roosevelt, who oversaw the planting of some three billion trees nationally in his time as president.

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## Around the World

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### Uganda: FAO mapping technologies help fill gaps in forest data

FAO recently introduced new mapping technologies in Uganda that will help the country generate better, more useful forestry statistics and land cover maps. Forests and forest products are important to the livelihoods of many communities in Uganda. The new tools and information will help the government monitor national forest resources and make informed decisions regarding long-term forestry and investment policies, as well as avoid unintended forest conversion and the degradation of the productive and protective functions of forests. Software costs a challenge. In the past, the management of Uganda's forestry sector has often been hampered by a lack of reliable data. While new advances in remote sensing and free access to satellite data can now facilitate the production of forest area data, users like the National Forest Authority of Uganda (NFA) have had limited capacity to benefit from such developments – software licenses alone can cost tens of thousands of dollars. FAO's innovations, on the other hand, do not require any large financial investments to implement. New integrated approach to data analysis To update Uganda's land cover map, FAO and NFA worked together to classify recent imagery and produce statistics during a week-long training course in satellite image processing. The NFA team learned to use a suite of open-source image processing tools to undertake the work. "The training solved our biggest problem

and gave us momentum that we started land cover mapping for the whole country; something we have wanted to do for some time," said John Diisi, the Coordinator of Geographic Information System/Mapping at the NFA. "The free provision of high-quality satellite data, combined with open-source image processing, geographic information systems and other statistical tools offers an amazing amount of utility and flexibility," said FAO remote sensing specialist Erik Lindquist. "Now, we can easily introduce advanced image processing techniques and generate results efficiently with no software costs to the organizations we work with. That is important given the resource constraints faced by national forestry agencies around the world." Small investment yields big results "This effort shows that finding flexible ways to use limited resources in the right time and place can produce substantial benefits. The initial direct investment was around \$20,000 provided by the Government of Finland, but it unlocked Ugandan potential that is worth many times that amount," noted Kenneth MacDicken, a Senior Forestry Officer at FAO. The new land cover map and statistics will help Uganda improve its forest monitoring capabilities, and Uganda's newly generated figures will also be included in the upcoming FAO Global Forest Resources Assessment 2015 report.

trust.org

## Africa's rainforests 'more resilient' to climate change

**T**ropical forests in Africa may be more resilient to future climate change than the Amazon and other regions, a gathering of scientists has said. An international conference agreed that the region's surviving tree species had endured a number of climatic catastrophes over the past 4,000 years. As a result, they are better suited to cope with future shifts in the climate. The event at the University of Oxford looked at the "fate of Africa's tropical forests in the 21st Century".

Conference organiser Yadvinder Malhi, professor of ecosystems at the university, said the main reason was that Africa's climate had been far more variable than, say, the Amazon or South-East Asia, even over the past 10,000 years. "In some senses, African forests have gone through a number of catastrophes in the past 4,000 to 2,000 years," he told BBC News.

"They are already much lower in diversity, and have lost species that would have been potentially vulnerable. But the species that remain are relatively adaptable, have broad ranges and have adapted to quite rapid changes in rainfall."

"So, overall, the remaining system – although it may be poorer to some extent – may be much more resilient to the pressures from climate change in this century."

The three-day conference – entitled **Climate Change, Deforestation and the Future of African Rainforests** – focused on the tropical forests of West Africa, which helped highlight a key issue.

"One thing that really came out was how little we know about African climate compared to other regions of the world," Prof Malhi observed. "There are large gaps [in the data]. If you look at a map of where weather stations are reporting, there is no data coming out of almost the entire Congo Basin."

It was an issue that was also highlighted by one of the speakers, Mark New from the University of Cape Town. "A colleague of mine put it very nicely when he said that if you took a scale of what is known in various regions, and if you went into West Africa and the Sahel region, which has been extensively studied, and made that 100, if you then went down to the West African coast where the tropical forests are, it would probably be about 50 in terms of relative knowledge," he explained.

"But then if you carried on down to the Congo Basin, then you would probably get five or 10 out of 100." Prof New added: "One of the critical points that I made is that what we know and understand about what controls the climate and variability, in the Congo especially, is basically zero." "This makes it very difficult to make any strong predictions of what the future might be."

bbc.co.uk

## Global: Carbon emissions helping to make Earth greener

**T**he planet is getting lusher, and we are responsible. Carbon dioxide generated by human activity is stimulating photosynthesis and causing a beneficial greening of the Earth's surface.

For the first time, researchers claim to have shown that the increase in plant cover is due to this "CO<sub>2</sub> fertilisation effect" rather than other causes. However, it remains unclear whether the effect can counter any negative consequences of global warming, such as the spread of deserts.

Recent satellite studies have shown that the planet is harbouring more vegetation overall, but pinning down the cause has been difficult. Factors such as higher temperatures, extra rainfall, and an increase in atmospheric CO<sub>2</sub> – which helps plants use water more efficiently – could all be boosting vegetation.

To home in on the effect of CO<sub>2</sub>, Randall Donohue of Australia's national research institute, the CSIRO in Canberra, monitored vegetation at the edges of deserts in Australia, southern Africa, the US Southwest, North Africa, the Middle East and central Asia. These are regions where there is ample warmth and sunlight, but only just enough rainfall for vegetation to grow, so any change in plant cover must be the result of a change in rainfall patterns or CO<sub>2</sub> levels, or both.

If CO<sub>2</sub> levels were constant, then the amount of vegetation per unit of rainfall ought to be constant, too. However, the team found that this figure rose by 11 per cent in these areas between

1982 and 2010, mirroring the rise in CO<sub>2</sub> (*Geophysical Research Letters*, doi.org/mqx). Donohue says this lends "strong support" to the idea that CO<sub>2</sub> fertilisation drove the greening.

Climate change studies have predicted that many dry areas will get drier and that some deserts will expand. Donohue's findings make this less certain.

However, the greening effect may not apply to the world's driest regions. Beth Newingham of the University of Idaho, Moscow, recently published the result of a 10-year experiment involving a greenhouse set up in the Mojave desert of Nevada. She found "no sustained increase in biomass" when extra CO<sub>2</sub> was pumped into the greenhouse. "You cannot assume that all these deserts respond the same," she says. "Enough water needs to be present for the plants to respond at all."

The extra plant growth could have knock-on effects on climate, Donohue says, by increasing rainfall, affecting river flows and changing the likelihood of wildfires. It will also absorb more CO<sub>2</sub> from the air, potentially damping down global warming but also limiting the CO<sub>2</sub> fertilisation effect itself.

Donohue cannot yet say to what extent CO<sub>2</sub> fertilisation will affect vegetation in the coming decades. But if it proves to be significant, the future may be much greener and more benevolent than many climate modellers predict.

newscientist.com

## Canada: Increase in B.C. forestry deaths raises concerns about safety

An increase in forestry deaths has industry watchers worrying the province may be losing ground on a safety push that is widely understood to have saved lives. On Monday, Rob Moonen of the B.C. Forest Safety Council said seven people have died so far this year while harvesting timber. He said that puts the province on track to exceed the 10 that died in the forest last year. But more significantly, he said, it threatens the gains made between 2009 and 2011 when average forestry deaths were reduced to about six each year. Before that, things were much worse.

In 2005, a whopping 43 workers died in the industry, and in the handful of years before that the average was about 21 deaths. Moonen said he wants to make sure the industry doesn't slide back to anywhere near those numbers. "Because of the number of fatalities, and we're in July, we just wanted to bring it to industry's attention," Moonen said Monday.

Forests Minister Steve Thomson said the recent increase is concerning, and that he will work with industry officials as they seek to understand what can be done to improve safety. "I think we need to look at all the reasons there may have been an uptick early on in the season," he said Monday. "I think we need to look at them collectively and I don't want to come to any conclusions in advance of taking a look at it."

New Democratic Party forest critic Norm Macdonald said he thinks government needs to take a proactive role to increase safety. "In the past, the government has been under pressure on this issue and has been forced to react. As it looks like numbers are increasing, we have to get back to where government takes its responsibility to try to make sure there are no fatalities

extremely seriously," he said. "There's more work to be done to understand what's taking place here but we certainly have to hold the government to making sure that they do everything possible to keep workers safe."

Moonen said one of the factors the industry is looking at is a recent increase in harvesting activity, which has seen workers returning to the job after time away, or new workers are being hired. He said measures need to be in place to ensure all these workers have proper tools and training. He said another focus needs to be ensuring no workers are taking any undue risks. "It's the balance between production and safety," he said. "We see a theme where these fatalities could have been prevented."

Ron Corbeil, health, safety and environment coordinator for the United Steelworkers union, said he is part of an industry working group that formed after the rise in deaths last year, which he said has made new recommendations on safety that could soon bring a new round of improvements. "Last year there were 10 fatalities and that seemed to really catch people's attention," he said, adding the group has settled on close to 20 recommendations on items such as training, supervision and planning.

He said the CEOs of the coastal forest companies all agreed recently to implement the recommendations. "I applaud industry — and by industry I mean the contractors, the union and the company CEOs — for trying to prevent injuries in the forest industry," he said. "We put a lot of work into these recommendations and I hope we'll see some return in the very near future."

[vancouver.sun.com](http://vancouver.sun.com)

## Indonesia: Pulp and paper giant dodges deforestation probe

Greenpeace, the Rainforest Action Network (RAN) and WWF have claimed that the pulp and paper giant Asia Pacific Resources International Limited (APRIL) is dodging an independent enquiry into its deforestation practices in Indonesia by withdrawing from the Forest Stewardship Council (FSC). On June 22nd 2013, the FSC announced that APRIL had asked its certification bodies to withdraw all of its FSC Chain of Custody (COC) certificates.

The three environmental organisations had earlier lodged a complaint with the FSC that APRIL was in violation of FSC's Policy for Association through its continued large-scale conversion of natural forests in Indonesia to plantations, including the destruction of high conservation value (HCV) forests. The company also has persistent social conflicts in its operations.

In a statement responding to FSC's announcement, APRIL stated that its decision *'not to hold or seek FSC CoC/CW certification for the foreseeable future is based on concerns about the FSC's Policy for Association'*.

The FSC Policy for Association is in place to ensure that the FSC only associates with companies committed to fundamental principles of responsible forest management. It requires that a company holding FSC CoC certificates not be involved in the conversion of HCV forest and must not have converted an area of forest covering more than 10,000 ha within the past five years.

APRIL also holds COC certificates under the other major forest certification scheme, the Programme for Endorsement of Forest Certification (PEFC) However, the NGOs could not file a complaint to PEFC as it doesn't have a Policy of Association.

"By quitting the FSC, APRIL is avoiding independent scrutiny of its operations as presented in the NGO's formal complaint to the FSC. It is effectively admitting its deforestation practices are incompatible with the FSC" says Aditya Bayunanda.

[wwf.panda.org](http://wwf.panda.org)



## Africa: Could China lead the race to save tropical forests?

The world's tropical forests – the planet's lungs – are in rapid decline. Over the past 60 years over 60% of them have disappeared, while two-thirds of those that remain are fragmented. Demolition is driven, in large part, by logging, much of it illegal, which in turn paves the way for clear-cutting for plantations and agriculture.

Deforestation is driven by international consumer demand not just for timber, but for everything from soy and rubber to palm oil and other supposedly climate-friendly biofuels. What makes this possible is the failure of governments to stir themselves beyond re-heated rhetoric about the importance of forests and the establishment of international talking shops that deliver little.

What would make China's leaders care about their impact on tropical forests? The International Institute for Environment and Development (IIED)'s new 'China-Africa Forest Governance Learning Platform' report demonstrates the role increased dialogue can play. It showcases an innovative collaboration involving African civil society representatives and Chinese officials, aimed at ensuring that China's demand for African timber brings benefits to local populations.

The report notes that African timber currently accounts for around 4% of China's forest product imports, worth around US\$1.3 billion. This demand is rising, and China's role in the timber trade, globally, is pivotal. A study published by the Environmental Investigation Agency (EIA) last year estimated that China imported at least 18.5 million cubic metres of illegal logs and sawn timber in 2011, worth US \$3.7 billion, constituting 10% of China's total wood products imports. Chinese timber industry representatives contest some of EIA's figures, but it is clear that alternative interpretations of available trade data cannot explain away a very serious problem.

China is in good company, however. According to a European Commission study published on 2 July, Europe itself accounts for 36% of the international trade in products and commodities that drive deforestation, although it is home to just 7% of the world's population. Moreover, while domestic demand in China is escalating, the country remains the world's assembly shop for many wood-based products. Chinese officials have long pointed out China's wood processing firms are links in a supply chain serving consumers in Europe, North America, Japan and elsewhere.

From the perspective of those participating in the IIED initiative, and anyone else interested in preserving tropical forests,

focusing the debate on fair attribution of blame has obvious limitations. What is required is real global leadership to end forest destruction. Could China provide this?

There are strong arguments, grounded in self-interest, for China's leaders to take a fresh look at the world's tropical forests and their role in keeping them standing. These start with the commercial case for overhauling the way the Chinese timber products industry operates. An immediate risk to continued business as usual is the US Lacey Act amendments of 2008 and the 2013 EU Timber Regulation which prohibit the import of illegal wood products. If enforced, these laws will eat into the profit margins of Chinese firms who cannot demonstrate that their timber is clean.

Moreover, for a government that prides itself on 'peaceful co-existence' and 'non-interference' partnerships with developing countries, there is a reputational risk in being implicated in forest destruction. This was explained to me on my first visit to China some years ago by an official in Yunnan Province, who candidly described the damage that the illegal timber trade between Myanmar and China was having on relations between the two governments. Experiences from other countries where Chinese companies are at the forefront of natural resource extraction – notably South Sudan and Zambia – have likewise highlighted how questionable business practices can give rise to major diplomatic headaches.

Beyond the short-term risks to business and to China's reputation, there is the relationship between deforestation and climate change to consider. China is central to international debates on climate change, and has emerged as a champion of climate-friendly clean energy technologies. Stopping the destruction of the world's forests is often cited as an easily attainable goal in efforts to slow global warming, yet it is one western governments have failed to grasp. Can China do better?

An immediate step that the Chinese government could take would be to match or, better, improve on the American and European legislation prohibiting the import of illegal timber. While 'legal' should not be confused with 'sustainable', this would protect Chinese wood product exporters from international penalties and reputational damage. It would announce China as a leader, rather than a follower, on an issue of critical importance for many of its development partners and the wellbeing of the planet as a whole.

[allafrica.com](http://allafrica.com)

## Fiji: Native forests dying out

Fiji's native forests continue to dwindle at an alarming rate, says University of the South Pacific forest biologist Marika Tuiwawa. Speaking at the launch of the forest harvesting code of practice in the North, Mr Tuiwawa said the size of our native forests had diminished over the years.

"The native trees that we used to enjoy in abundance some 60 years ago are slowly dying away in numbers," he said. "In an effort to save our native forests, we have already identified areas in Fiji where we can establish native forests. Native woods like vesi, dakua and yaka continue to diminish in numbers over the years."

Mr Tuiwawa said even though this was the case, they still had a lot of suitable land for rehabilitation of native forests in the North. "By developing our own forests, we ensure that our native lands and trees are managed in a sustainable manner.

"We are currently trying to locate reforestation spots along the mountainous range between Savusavu and Labasa, which we have earmarked to be suitable areas for the initiative. "We are also trying to locate native forests that can be identified to government for the purpose of conservation."

Mr Tuiwawa said native trees needed to be preserved so they could be enjoyed by future generations.

[fijitimes.com](http://fijitimes.com)

## Congo: Illegal logging ravages DRC forests, experts say

**M**ultinational companies are profiting hand over fist from abusive forestry practises in the Democratic Republic of Congo, where illegal logging, mislabelled timber and false permits are widespread, according to several non-governmental organisations.

The forests of the Congo basin in central Africa cover about 100 million hectares (almost 250 million acres) and are regarded as the second-largest green lung on the planet after the Amazon rainforest, but in DR Congo trees are being cut down with little regard for the law. Local and international NGOs charge that Congolese authorities are working with logging companies.

In spite of tighter regulations recently adopted in Europe on imports of timber from Africa, it is almost impossible to verify the legality of tropical wood from DR Congo, according to the British-based non-profit organisation Resource Extraction Monitoring.

The group, which has staff in the field to investigate illegal activity, says the country's timber industry is tarnished by "widespread fraud and illegal logging".

Wenge (*Millettia laurentii*), a heavy, dark and deeply patterned wood used for decoration and building, is both widely sought and listed as endangered – meaning it can fetch large sums of money, though little of that ends up in local hands. "A cubic metre (35 cubic feet) of Wenge is worth five American dollars in the forest when it is legally bought from local communities. When it arrives in a port and is loaded on a boat, it costs \$450 (R4 538.16), and taxation is based on this rate. Yet in Europe, it sells for between 5 000 and 8 000 euros," an expert who asked not to be named told AFP. "The loss of income for the Congolese state and population is enormous."

Greenpeace Africa recently denounced the unloading at the Belgian port of Antwerp of a cargo of Afrosia (*pericopsis elata*), or African teak, which is another rare hardwood. "Belgium has placed the interests of logging companies above the protection of the forests of the Congo and the people who

depend on them for their existence," said Raoul Monsembula, the DR Congo national coordinator for Greenpeace Africa.

Forty cubic metres of Afrosia were closely followed from origin to destination by several environmental activists. These witnesses, who all asked to remain anonymous for fear of expulsion or losing their contracts, saw the hardwood transported via the DR Congo river port of Kinkole. "Upon visiting Kinkole port near Kinshasa, Greenpeace Africa witnessed log ends being removed and painted with new markings to hide illegal activities and to enable export," the NGO said in a March 4 report.

The wood was then placed on trucks to be transported to Matadi, the country's sole seaport, where it was loaded onto a cargo ship bound for Belgium.

In its report, Greenpeace named several suspect European companies and published photos of lorries carrying large, unregistered Wenge logs, along with wood that was completely unidentified despite regulations providing for each log from a single tree to be clearly marked with the same number. The activist body also showed logs seized by police that would be recycled in the commercial sector.

While social and environmental restrictions have been imposed on industrial logging firms, the Congolese environment ministry has handed out far more artisanal permits than officially authorised to local groups that act as a front for foreign or national interests, the industry sector expert said. In the forest, wood is traded for packets of cigarettes, sacks of flour and hunting rifles, he told AFP.

The NGO Global Witness has denounced a lax application of regulations by Kinshasa, which it says makes such abuses possible. "What do you expect when cooperatives or non-profit organisations can join up to obtain logging permits for 50 000 hectares – as is provided for in a planned decree on 'local community forests' – which they clearly could not exploit on their own?" the expert asked, warning that this scheme might open the door to further illegal activity.

[timeslive.co.za](http://timeslive.co.za)

## Malaysia: Perak to gazette 19,000ha forest

**S**ome 19,000ha of the Lower Belum Forest along the Grik-Jeli Highway will be gazetted as a permanent forest reserve under the Federal Government's Central Forest Spine project. Perak Menteri Besar Datuk Seri Dr Zambray Abd Kadir said the area was a productive forest located within the Belum-Temenggor complex near the Grik-Jeli Highway.

He said Perak was one of the states involved in the CFS project, which would link up four major forest complexes in Peninsular Malaysia to create one contiguous forested wildlife sanctuary. "The move shows how serious the state government is about preserving the environment and green lung of Perak. This is a huge sacrifice because the area involved is a productive forest for timber production. This long-term investment will benefit future generations," he said here yesterday.

Zambray said some groups had been urging the state government to gazette more areas in Temenggor, adding that a study needed to be done to ensure the timber industry was not affected.

The CFS is a master plan to enable the animal and plant species in the country to continue to thrive for future generations. Under the plan, the forest complexes will be connected through a network of 37 linkages to form a 5.3 million ha of forest complex. This area would allow animals to roam freely from north to south of the peninsula.

The four forest complexes are Titiwangsa-Bintang-Nakawan Range; National Park to Eastern Range; Southeast Pahang Swamp Forest, Tasik Chini and Tasik Bera; and Endau Rompin National Park-Kluang Wildlife Reserve.

[nst.com.my](http://nst.com.my)

## European forests near 'carbon saturation point'

European forests are showing signs of reaching a saturation point as carbon sinks, a study has suggested. Since 2005, the amount of atmospheric CO<sub>2</sub> absorbed by the continent's trees has been slowing, researchers reported. Writing in *Nature Climate Change*, they said this was a result of a declining volume of trees, deforestation and the impact of natural disturbances.

The team's study observed three warnings that the carbon sink provided by Europe's tree stands was nearing a saturation point. "First, the stem volume increment rate (of individual trees) is decreasing and thus the sink is curbing after decades of increase," they wrote. "Second, land use is intensifying, thereby leading to deforestation and associated carbon losses. "Third, natural disturbances (eg wildfires) are increasing and, as a consequence, so are the emissions of CO<sub>2</sub>."

Co-author Gert-Jan Nabuurs from Wageningen University and Research Centre, Netherlands, said: "All of this together means that the increase in the size of the sink is stopping; it is even declining a little. "We see this as the first signs of a saturating sink," he said.

Dr Nabuurs explained that saturation referred to the point where the natural carbon sinks were unable to keep pace and

absorb the additional atmospheric carbon being released by human activities. He said emissions had risen a lot over the past decade, primarily through the rise of emerging economies in countries such as China, India and Brazil.

The researcher's conclusions appear to contradict the State of Europe's Forests report in 2011 that showed forest cover in Europe had continued to increase. The report said trees covered almost half of Europe's land area and absorbed about 10% of Europe's annual greenhouse gas emissions.

But Dr Nabuurs said that the rate of afforestation was slowing, adding that a sizeable proportion of forests were mature stands of trees, which were mainly planted in the early part of the 20th Century or in the post-World War II period.

"These forests have now reached 70–80 years old and are starting a phase in the life of a tree where the growth rate starts to come down," he explained.

"So you have large areas of old forest and even if you add these relatively small areas of new forest, this does not compensate for the loss of growth rate in the old forests."

[bbc.co.uk](http://bbc.co.uk)

## Global: Lower pulplog prices aid paper producers

Prices for wood chips and pulplogs have fallen worldwide over the past two years, resulting in lower production costs for the world's pulp and paper industry, reports the **Wood Resource Quarterly**. Both the HFPI and SFPI price indices have fallen by over 10% from their peaks in 2011. The biggest declines in wood fibre prices have occurred in Brazil, Canada, the US and Japan

The costs of wood fibre for the world's pulp mills have trended downward the past two years because of reduced pulp and paper production, and in some regions, as a result of higher supply of lower-cost fibre. This trend continued in the March quarter this year when the Hardwood Wood Fiber Price Index (HFPI) fell by 1.1% to \$103.66 per oven-dry metric ton (odmt), which was 12% below the all-time high in the third quarter of 2011, as reported by the *Wood Resource Quarterly* (WRQ). However, the price trends were mixed in the first quarter of this year, with hardwood fibre prices lower in Asia and Eastern Canada and slightly higher in Europe and Latin America as compared to the fourth quarter last year. Eucalyptus pulpwood prices in Brazil have fallen more than in most other regions the past two years, with first quarter prices this year down over 30% since 2011. This dramatic decline has resulted in Brazilian pulp

mills now enjoying the fourth lowest wood fibre costs in the world, behind Russia, the US South and Chile, respectively. The Softwood Wood Fiber Price Index (SFPI) in the first quarter of this year was practically unchanged from the December quarter of last year at \$99.90/odmt. The SFPI has inched downward for seven consecutive quarters and is currently down 8.8 percent from the most recent peak in second quarter of this year, according to the WRQ. The biggest changes in the first quarter in US dollar terms were the declines in chip prices in Eastern Canada, Japan, Western Canada and the US Northwest. The biggest increases occurred in France and Germany. There has been an increased supply of residual chips from the sawmilling sector that has turned up the production levels over the past six months. This is the major reason for the declining prices in Canada and the US. Prices for wood chips in Canada have fallen more than 15% in just over a year. With improved markets for softwood lumber in the US, it is likely that the availability of lower-cost wood fibre for the pulp industry throughout North America will continue through the rest of 2013 and into 2014.

[internationalforestindustries.com](http://internationalforestindustries.com)

