CFA Newsletter

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How to create a Green Mountain

Green Mountain, Ascension Island's first National Park

The UK Overseas Territory of Ascension Island is a small volcanic island in the South Atlantic, located almost half way between South America and Africa. Created around one million years ago from the hot magma of an underwater volcano along the Mid-Atlantic Ridge, it is a place of contrasts; from the barren volcanic landscape largely devoid of plant life around the coast, to the lush man-made cloud forest of Green Mountain. Designated as the Island's first National Park in 2005, Green Mountain draws interest from residents, tourists, historians, writers, ecologists and conservationists alike. On the ground, Green Mountain National Park is managed by Parks Warden, Stedson Stroud MBE, who is committed to preserving both its natural and built heritage and also promoting it as an area of special interest and beauty. The historic pathways on the Mountain such as the circular Elliott's Pass (1839), Rupert's (1833), Cronk's (1921) and Dew Pond (1875) are maintained by the Ascension Island Government Conservation Department and many volunteers, to enable residents and visitors to enjoy this unique area.

For hundreds of years after its initial discovery in 1501 by the Spanish explorer João da Nova, Ascension Island remained arid and inhospitable with little greenery. Accounts from passing sailors describe their often futile efforts to find fresh water, although Captain William Dampier described finding water 8 miles inland 'beyond a very high mountain', most likely Green Mountain, after his vessel HMS Roebuck wrecked on the coast. Following this, the early 1800s saw the building of a track up the side of Green Mountain and numerous tanks and pipelines between here and the main settlement in Georgetown. Farm and garden plots were started and life became more tolerable for the British Royal Navy garrisoned on the island as a strategic outpost for the guarding of Napoleon who was imprisoned on Saint Helena

Island, some 1,300 km to the southeast of Ascension. Efforts to source and develop fresh water supplies dominate many of the earliest records for the island up to the construction of a desalination plant in 1964 by the BBC, and it is this that has largely controlled the occupation and development of Ascension from its discovery.

One of the island's Conservation Officers, Jolene Sim, planting cultivated endemic ferns Pteris adscensionis *into their natural habitat with the help of children from the local summer school, Ascension Explorers.*

Under navel occupation, Ascension became an established imperial outpost, and was a rest stop for scientist explorers such as Charles Darwin. Later in the nineteenth century, an experiment followed that would see the greening of Green Mountain, the highest point on Ascension, rising to 859 m (2817 ft) above sea level. Eminent botanist and director of the Royal Botanical Gardens, Kew, Dr Joseph Hooker visited Ascension Island in 1843 and at the encouragement of Darwin, left with grand plans of tree and vegetation plantations as a means of increasing precipitation on the Island, the effects of which are still seen today. These were put into place shortly after, with William Wren appointed as first mountain gardener in 1847 to implement Hooker's plantation programme. There was mass planting of organised forests, shrublands and pastures on the Island, introducing over 220 exotic plant species from diverse parts of the world, with the aim of greatly increasing mist interception, soil development, water storage capacity and reducing erosion. Records show early naval ships carrying seed seedlings from botanical gardens in Europe, South Africa and Argentina. Following the appointment of Henry Cronk as head gardener in 1896, by the early 1900s, the island was home to Norfolk pines, eucalyptus, bamboo and banana trees. The pioneering work of Dr Hooker lives on to this day; Green Mountain is a man-made cloud forest and wild botanical garden with trees and plants from around the world growing side-by-side. It is also home to Ascension's iconic, native land crab whose omnivorous lifestyle allows it to thrive in these conditions. Many have claimed this to be one of the greatest ecological terraforming experiments of all time with a new, functioning ecosystem having been created from scratch. To others it is simply another example of man-made biological invasions degrading a previously pristine island environment.

Prior to human settlement, the native ecosystems on Ascension were at a relatively early stage of development, making them particularly susceptible to invasion by introduced plants. Around 25 vascular plant species are thought to be native to Ascension, and of the 10 known species of endemic higher plants, 7 remain today, and all are considered to be threatened. The AIG Conservation Department is employing a number of methods to preserve the island's ecological heritage and functioning. Endemic plants are propagated *ex-situ* using a variety of techniques with the aim of reintroducing these into the wild to establish viable populations. A notable example is work with the Ascension parsley fern *Anogramma ascensionis* that was listed as extinct in 2003, but four seedling sporophytes were rediscovered by Stedson Stroud in 2009. In collaboration with the Royal Botanical Gardens, Kew, intensive efforts have subsequently been made to secure the survival of cultivated stock from these. Some specimens are planted out in "restoration sites", both on Green Mountain and also around other points on the island that are fenced to exclude predators and currently serve as an important refuge for the native flora. However, these sites will not be tended to indefinitely, nor do we propose to reverse the "greening" of Green Mountain. Our ecological restoration efforts are becoming more refined and focused through the designing and implementation of the first national Biodiversity Action Plan for Ascension Island. One of the team's Conservation Officers, Jolene Sim is leading an ecosystem approach to plant conservation on Ascension Island, seeking to find a balance that will allow the old and the new to coexist.

For example, having been largely outcompeted by non-native plants on banks and rock-faces where it is still found in small numbers, one of the endemic ferns, *Xiphopteris ascensionis*, has found a new stronghold growing on the mossy branches of introduced trees, filling a niche that it first encountered only 150 years ago. While the idea that an introduced species serves some conservation function is not a novel one, it does allow for some more innovative ecological restoration work. The Conservation Department is currently developing plans to encourage the growth of some of the non-invasive, introduced trees on the top of Green Mountain, such as wild fig (*Ficus spp.*), to provide habitat for this endangered fern while also crowding out the more aggressive invasive shrubs. The white tern, *Gygis alba*, can also now be seen nesting on the branches of trees on Green Mountain after millennia on the cliff faces. Another interesting case for conservation workers is that of the Bermuda cypress tree (*Juniperus bermudiana*), first planted on the slopes of Green Mountain in 1882. Endemic to Bermuda, it has declined in the wild there and is listed as Critically Endangered on the IUCN Red List of Threatened Species. However, on Ascension, it has become naturalised and is surviving well. As well as practical biodiversity conservation work, the growing AIG Conservation team is expanding its efforts to study Ascension's predict future ecosystem change and thus inform practical conservation actions so that future generations can enjoy this unique island.

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Association news

IUFRO World Congress 2014

IFSA students at the Welcome Reception, (Photo: Olivia Sanchez)

The International Union of Forest Research Organizations (IUFRO) held its 24th World Congress in Salt Lake City, Utah, USA, from 5 to 11 October 2014. IUFRO is the second oldest international organization, second only to the Red Cross. It was founded in 1892 by the national research institutes of a few European countries and now has over 15,000 scientists in more than 630 member institutions and 190 Associate Members in 122 countries. These collaborate in 9 scientific Divisions, more than 50 Research Groups, over 170 Working Parties and several inter-disciplinary Task Forces. These units are led by some 700 leaders and deputies and are open to all IUFRO member scientists. Between them these units cover almost any researchable subject related to forests and forestry; they hold up to 100 meetings each year and the Congress takes place every 4 – 5 years, timed to avoid competition with the FAO World Forestry Congress and the Commonwealth Forestry Conference. In the last two decades IUFRO has attempted to respond to global policy issues and plays a very significant role in international processes related to biodiversity, climate change and forestry *per se*.

The Congress was extremely well organized by the IUFRO Board and Secretariat with the Congress Organizing Committee and the Congress Scientific Committee, steered and strongly supported by the US Forest Service. Some 2,500 people, from more than 100 countries (for the first time in IUFRO history), concerned with forest research attended the Congress but it was timed to coincide with the annual general meetings of the Society of American Foresters and the Canadian Institute of Forestry so that another 2000 forest managers and policy makers were able to share events and discussions.

The Congress was organized to provide five plenary sessions, 19 sub-plenaries, 170 technical sessions and a large number of business and side events for various IUFRO units and external associations. In addition there were was a large and well organized poster display and a huge commercial exhibition of relevant equipment, technologies, businesses and associations. A total of 1200 oral presentations were made and abstracts of all 2400 submitted papers and 1200 posters were published in a Special Issue of our International Forestry Review (Volume 16 (5), 2014). A generous number of beautifully organized pre- and post-Congress field excursions were fully taken up as were some 30 in-Congress mid-week visits to forestry, land use and cultural locations.

A special event was the first presentation of the Wangari Maathai Award by the Collaborative Partnership on Forests to the Mexican environmental campaigner Martha Isabel "Pati" Ruiz Corzo in recognition of her pioneering work to conserve forests and alleviate rural poverty.

My personal "special event" was a sub-plenary session with a keynote presentation of a paper by Hans Gregersen, Juergen Blaser and Hosny El-Lakany giving their views on the challenges that faced the forestry and forest products industries in the last quarter of a century. Four Past-Presidents responded to show how research rose to these challenges.

The Congress demonstrated the capacity of IUFRO to cover the global variety and value of forest research and institutions. I can only recommend you and your institutions to begin or continue serious participation in its activities and to plan to attend the next Congress that will take place in Curitiba, Brazil, in October, 2019.

The Congress Organizing Committee captured video from the Opening and Closing Ceremonies, all five hour-long plenary presentations, and over a dozen interviews with notable scientists from around the world and uploaded them to a special IUFRO YouTube channel at youtube.com/user/IUFRO.

Professor Jeff Burley
Past-President IUFRO
Vice-President, CFA

The Commonwealth Forestry Review online

The libraries in Oxford have played an important role in providing access to forestry information for over a hundred years. The physical forestry collections consisting of printed international bulletins, reports and other materials are now located in the Radcliffe Science Library in Oxford, and run to over 200, 000 items. The collection contains a number of unique items and works which are difficult to source elsewhere (please see our online guide to the forestry collections here – http://libguides.bodleian.ox.ac.uk/forestry).

Since 2006 the Bodleian Libraries have provided free electronic access to the complete set of volumes of the ***Commonwealth Forestry Review*** (and its earlier incarnations as the ***Empire Forestry Journal*** and ***Empire Forestry Review***) and some issues of the ***International Forestry Review***. Funding from the Andrew W. Melon Foundation and the support of the CFA allowed issues of the journal from 1922 until 2003 to be digitised and made available to download through one of the library's websites as part of the Oxford Digital Library for Forestry (ODLF). In 2013 changes in the library's website and network infrastructure meant that it was no longer possible to make the digitised documents available for direct download from the library website. Although this has unfortunately meant that the journal issues have been temporarily unavailable, it has prompted the development of an improved method to store and host the material.

The Bodleian Digital Library Systems and Services (BDLSS) team have been working with the Forestry Librarian to migrate the digitised Commonwealth Forestry Review issues to a new permanent online home. Rather than being isolated on their own webpage, the new location for the digitised journals allows bibliographic data to be attached to each issue and will enable these to be located through the Oxford Library catalogue SOLO (http://solo.bodleian.ox.ac.uk). This will make the journal much easier for researchers to find and access. It is also hoped that this project will provide a template for future digitisation efforts from the library's forestry collections. At the moment, a variety of publications from the Oxford Forestry Institute are also available electronically. These include the Tropical Forestry Papers, Annual Reports and Occasional Papers.

Work has taken place over summer 2014 to migrate issues of the CFR and other digitised forestry material to their new home. This material should become available to view and download over the next few months. The existing ODLF webpage will be updated with information about how to access the material from its new location (http://www.bodleian.ox.ac.uk/science/resources/ofis/odlf).

We would like to thank the Andrew W. Melon Foundation for funding the original digitisation, the CFA for its continued support and staff at BDLSS for their work on migrating the material.

Oliver Bridle
Subject Librarian for Biology and Forestry.
Radcliffe Science Library, Oxford, UK

Africa, one tree at a time

One UBCO student will help change the landscape in sub-Sahara Africa with his grand ideas and award-winning thesis. Tolulope Daramola is an international student earning his science PhD at UBC's Okanagan campus.

Daramola's goal is to explore various options to restore degraded lands in sub-Saharan Africa, modelling some of the practices in North American and their applications in the Africa region.

The sub-Sahara, south of the Sahara Desert, is an environmentally diverse region. It accounts for about 25 per cent of the world's remaining rainforest. However, this forest is shrinking because of the growing population and unsustainable use of the forest resources. Consequently, such heavy strains on the land is leading to severe degradation.

Through the ironic yet genius initiative called the Great Green Wall, Daramola's home country of Nigeria and 17 other African nations have collaborated to plant a wall of trees across sub-Saharan Africa.

The massive project comprises planting trees across 14.8 million square kilometres at the southern edge of the Sahara desert. As a means to prevent desertification and increase the amount of oxygen emitted into the atmosphere, the Great Green Wall is expected to have an abundance of positive outcomes for sub-Sahara Africa.

"We need to find better ways to manage the forest sustainably and double efforts to restore the forest that has been lost," said Daramola. Pushing for sustainable direction in Nigeria and abroad was the motivation that propelled his master's thesis, which was on assessing impacts of nitrogen fertilization of Washington State forests on growth yields.

His work was recently recognized by the International Union of Forest Research Organizations (IUFRO), and his thesis was awarded the 2014 Student Award for Excellence in Forest Sciences at IUFRO's World Forestry Congress in Salt Lake City in October.

Daramola would like to build on the success of his Master's work towards his PhD research. Through integrating socio-economic and ecological interactions of forest ecosystems managements in order to push towards sustainable development, Daramola plans to develop a matrix management model that will connect the important components of sustainability in forest management in sub-Sahara Africa.

"Our current forest management system has proven ineffective, because of the inherent gap between science-policy interface and local knowledge and needs," commented Daramola. Such policies do not address fundamental issues associated with forest loss. Before any policy can be effective, it has to place people at the central of it objectives."

"Tolulope has defined an interesting and timely research project, which could make a very real difference on the ground," said Daramola's supervisor, Associate Professor, Kevin Hanna. "Given the looming impacts of climate change and the implications for regions such as sub-Saharan Africa, this is the kind of work we will need more of."

Once his PhD is complete, Daramola plans to return to Africa, using his knowledge to benefit those in Nigeria and surrounding countries.

"My goal is to carry out a research that is applicable on the ground, something new and unique, something that will solve problems and address some of the contemporary issues that is undermining development in Africa," added Daramola.

www.kelownanow.com
(Tolulope Daramola is the CFA Youth Officer)

Forest Scenes

A hundred years of forestry at Oxford revitalized

Forestry has been a major activity in Oxford University for over a century. From 1905 the Forestry Department and later the Forestry Institute conducted not just teaching and research at undergraduate, postgraduate and professional levels but also provided advice and information for international and national agencies and organizations throughout the developing world.

In 2002 the Oxford Forestry Institute (formerly Imperial and then Commonwealth Forestry Institute), then located within the Department of Plant Sciences, was closed and elements of relevant teaching and research were taken up in a range of University institutions including the Departments or Schools of Business, Geography and Environment, History, History of Medicine, Human Sciences, Plant Sciences and Zoology.

A recent benefaction from the Patsy Wood Trust and Sir Martin and Lady Wood has endowed a new professorship in forest science within the Department of Plant Sciences. (This may cause some confusion as it is called the "Wood Professorship in Forest Science" but it does not commit the holder of the post to study only that major forest product.)

The new incumbent, Professor John Mackay, formerly of Laval University in Canada, gave his inaugural lecture before the Vice-Chancellor and a hundred guests in the Examination Schools on 6 November 2014. A summary of the lecture is given below and reflects superbly the links between pure research, policy, management and use of forests and forest products and services.

"Sustainable forest management has three targets: healthy forest ecosystems, productive forestlands, and economic value. In the 21st century, increased pressures on land from human population growth and public demands for more responsible use of forests have emerged as increasingly important for forest sustainability. In addition, environmental change including global warming has brought considerable attention to predicting the fate of trees and forests. Understanding the ability of trees to adapt to changing conditions has become a central research question and a matter of much debate. Population genetics and evolutionary biology clearly teach that tree populations are able to adapt to environmental conditions; however, our understanding of how trees adapt is insufficient to discern their adaptability to rapid change. Recent research developments in forest genomics are beginning to fill the knowledge gap and are paving the way to future progress toward understanding the adaptability of trees. The roadmap for the future of trees and forests must include an improved understanding of adaptability; this knowledge will contribute to the sustainability of forestry practices and inform natural resource policy."

Professor Jeff Burley
Director-Emeritus, Oxford Forestry Institute
Vice-President, CFA

Improved forest management as an approach to mitigate climate change in the Congo Basin

Congo Basin forests, which cover 529 million ha, expand through the Central Africa Region (FAO, 2011). They are the most "intact" remaining tropical forest worldwide and provide shelter and food to thousands of people who depend on them for daily subsistence (de Wasseige et al., 2009). These forests provide critical ecosystem goods and services, house a large variety of plants and animals species, and store large quantities of carbon. They also constitute a major source of revenue from timber extraction and employ many people in timber extraction, biodiversity conservation, and ecotourism.

As globally valued storehouses of biodiversity and carbon, the Congo Basin forests are threatened by human activities. Given the importance of extractive industries and the role of forests in climate change mitigation and maintenance of biodiversity, it is crucial to investigate the extent to which improvements in forest management practices can serve to reduce carbon emissions, maintain biodiversity, and increase future timber yields.

Many efforts to reduce carbon emissions from deforestation and forest degradation (REDD+) and other REDD-readiness activities are underway in Central Africa. To reduce emissions and to promote economic development, the Central African Forests Commission (COMIFAC) aims to provide orientation and coordination of efforts to promote conservation and sustainable management of forests. COMIFAC countries (Cameroon, Central African Republic, Congo, Democratic Republic of Congo, Equatorial Guinea, and Gabon) also proposed the use of an adjustment development factor (Karsenty, 2008; Parker et al., 2009) so that development is not unduly curtailed in the interest of REDD+. Since the Montreal Conference of the Parties (COP-11) in 2005, COMIFAC countries have chosen to work together to develop concerted and common position and to make their presence felt in climate negotiations. They requested the explicit inclusion of conservation and sustainable forest management in REDD and underscored their requirements to strengthen their technical capacity for monitoring forest cover and carbon stocks (Tadoum et al., 2010).

Timber Extraction in the Congo Basin

Timber production is of substantial long-term socio-economic importance in the Congo Basin, contributing up to 7% of national economics (Karsenty et al., 2008, de Wasseige et al., 2009). Despite this recognized need, logging practices in the region still range from conventional logging practices to reduced-impact logging with and without forest certification that often degraded the forests.

Logging in the region can be distinguished by three periods: the pioneer phase (1945–1970) when logging was limited to coastal regions; expansion into the hinterlands (1970–1990) under a pure timber production standard but with increased interest in silviculture research; and, the last two decades characterized by the opening of the forestry sector and the importance of forest management under sustainable development (Nasi et al., 2006). Because of the importance of timber production in the region, implementation of improved forest management is imperative. Despite that, carbon stocks are jeopardized by logging especially where it is carried out by untrained and unsupervised laborers working without the aid of adequate management plans (Putz et al., 2008; Angelsen et al., 2009).

Logging Impact Assessment

The impacts of logging on forest carbon biomass were assessed in three different sites in two forest concessions in Gabon: a forest logged with reduced-impact logging (RIL) methods conducted by Tropical Forest Foundation (TFF-RIL); a Forest Stewardship Council-certified forest concession (FSC); and, a conventionally logged forest concession (CL). Logging impacts were evaluated in 42 randomly located 1-ha permanent plots in which all trees ≥ 10 cm dbh were measured, identified to species, and marked prior to harvesting. Impact comparisons were made between the FSC and CL sites. After logging, tree damage and biomass losses were recorded as being due to felling, skidding, and road-related construction and maintenance. The overarching goal of these studies was to contribute to the information base needed for developing forest management approaches that effectively and simultaneously reduce carbon emissions, assist in mitigation to global climate change, guarantee the sustained yield of timber, and preserve tree species in forests of the Congo Basin.

Logging truck

Prospects for Improved Forest Management in Central Africa

Employment of improved forest management techniques such as reduced-impact logging (RIL) elsewhere in the tropics is known to result in substantial reductions in carbon emissions and increases in biodiversity retention (van Kuijk et al., 2009). In a study in Gabon, the loss of biomass and its equivalent carbon dioxide vary according to the volume of logged timber extracted and the logging technique used. Comparing the logging impacts in three different forest concessions, timber extraction rates are greater when using conventional logging techniques than using RIL techniques and RIL with FSC certification principles. As a result, 13.5% of the initial forest biomass was lost when using conventional logging practices, while only 7.1% and 8.1% of the initial biomass were lost when using FSC with RIL and RIL techniques alone, respectively. In addition, the number of damaged trees per logged tree was highest at the CL site and lowest at the FSC site, and the density of roads and skid trails was also highest at the CL site. Skidding operations damaged fewer trees per meter of trail at the FSC site than at the RIL site, and the CL site. Forest road construction damaged more trees per meter of road at the FSC site than trees at the CL site.

The study in Gabon showed that conventional logging is a major source of forest degradation and forest carbon emissions, but also that RIL and reduced logging intensity can greatly reduce both degradation and forest carbon emissions (Medjibe et al. 2013). The good planning of logging roads and skid trails in forest concessions is essential for minimizing the negative impacts of logging on forest ecosystems. The RIL and FSC sites used RIL techniques, which involve the planning of logging operations in advance, worker training, the planning of roads and skidding trails, and controlled logging. At the CL site, where these practices were not employed, biomass loss and damage to remaining stands were substantially higher. Measuring the extent of degradation caused by logging operations is a challenge for countries in Central Africa, but it might be possible to estimate degradation with reasonable accuracy by combining field studies and remote sensing data (see Pearson et al., 2014). Similar surveys to the ones reported in this article would need to be conducted in a number of forest concessions with different types of logging licences in order to better understand the variability of logging impacts on forest carbon. Such surveys could be coupled with remote sensing data to estimate the area of forest logged under various regimes.

Concluding remarks

Due to high tree species diversity in Central Africa, logging is and will remain selective. Even where RIL practices are employed, selective logging unavoidably causes carbon emissions, destroys some wildlife habitat, and has a variety of direct and indirect impacts on biodiversity, other ecosystem values, and human welfare. Where good timber management practices are implemented, these impacts are substantially reduced while still providing financial benefits to loggers and landowners, be they private individuals, communities, or governments.

When properly conducted, timber harvesting can be a component of sustainable forest management (SFM; van Kuijk et al., 2009). RIL is also the main component of SFM shown to have benefits for carbon retention (Pinard and Putz, 1996; Medjibe 2012) and biodiversity conservation (Pearce et al., 2003; see van Rheenen et al., 2004). The rarity of RIL in the tropics in general and most likely Central Africa as well is apparently due to the perceptions of loggers and concessionaires that it is too expensive, that there is nothing wrong with CL, and that markets do not demand that RIL practices be implemented (Putz et al., 2000). Nevertheless, given the potential carbon benefits of RIL, as shown the results of the study in Gabon, Central African countries where timber production is of great importance need to promote the adoption of improved forest management techniques. Therefore, selective logging causes carbon emissions that can be reduced through use of improved forest management.

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Bamboo codes help map markets

A trip to the homestore, supermarket or kitchen shop in many of the more affluent countries of the world for any bamboo-fan will surely be a delight. Bamboo floorboards, bamboo window blinds, bamboo chopsticks, bamboo chopping boards, edible bamboo shoots, bamboo-derived rayon-based clothing, bamboo and rattan furniture, and interior decoration with bamboo are all available, and at reasonable prices. And if flat-pack bamboo houses are ever produced and released to the world's markets, then it would be possible for someone in a country in which commercial bamboo is not native, to live in, on and with bamboo for their whole lives.

These products are, of course, recent additions to the market, and their appearance has been driven primarily by China's well-planned, well-coordinated and well-supported investment in the development of its bamboo sector, from where many of them come. China is now the world bamboo-producing leader by a long way, with a domestic sector worth US$ 19.5 billion per year.

With these new and varied products reaching the market, it was clear that following and recording international trade in them would be difficult. Just ten years ago, the Harmonized Commodity Description and Coding System (HS) included only two categories specifically designed to register bamboo and rattan trade (*140110 bamboo poles*, and *140120 rattan poles*), neither of which included any of the downstream products. For these, codes such as *460120 mats/matting/screens* and *460210 basketwork* included bamboo and rattan along with all other materials, and even traditional rattan (cane) furniture was not specifically covered, but subsumed under the very general *940380 furniture*.

So, in the early 2000s, INBAR worked with FAO to produce 14 new bamboo and rattan-specific codes that would increase the accuracy of trade reporting, and after approval by the World Customs Organisation (WCO) in 2005, they came into effect two years later. These codes have variously been adopted by some countries and not yet by others, but they do provide a better snapshot of international trade in bamboo, rattan and their products – which this INBAR study makes available for the first time in published form.

The aim of the study is to map current global bamboo and rattan trade-flows, identify key markets and outline major trends. The report reviews the trade status (including exports and imports 1992–2012) in the global market of those bamboo and rattan commodities with classified individual UN HS codes (the 14), and also gives an estimate to include those 125 countries that have yet to adopt the codes. There is data on the total trade value for all reporting countries, and the report not only gives an overview of the global market of bamboo and rattan, but describes the trade status of each commodity, such as trends, markets and trade flow, analyses the key importers and exporters in the global market and gives an overview of trade bamboo and rattan commodities by INBAR's member countries.

Bamboo and rattan industries are attracting more and more attention from governments, private investors and other stakeholders, as they are increasingly demonstrated as viable and environmentally-friendly business options, with reliable markets. As a result, tracking the trade in bamboo and rattan to inform development is important both for developing countries that have the bamboo and rattan resources, and for countries in transition or more developed countries that have better processing technologies. The traditional bamboo and rattan producing countries with bamboo and rattan resources are the main exporters. In 2012, China contributed about 66% of bamboo and rattan of the international market, followed by the EU with a market share of 11% and Indonesia, 9%. The EU and the USA are also important exporters as they produce value-added bamboo products with the raw materials and semi-processed products that they import. The EU, the USA and Japan are the top three importers of bamboo and rattan products in the world. In 2012 they collectively accounted for 72% of the world total imports.

But both bamboo and rattan, and the many and varied products made from them, have long histories of being traded internationally. The ancient Romans are thought to have used rattan furniture, presumably imported as raw materials or finished articles from India or further afield, though there has been no discovery of rattan fragments at any of the trading sites of the time – not unexpected, as rattan wood would not survive for 2000 years. Opening up of the world by Chinese traders one thousand years ago must have brought trade in bamboo and rattan products from and to China, though there is little physical evidence of this thus far, whilst more is known of the effects later explorers had on international bamboo and rattan trade, particularly the Dutch and the British.

Vermeer's painting 'The Milkmaid" which was painted between 1658 and 1660, shows clearly a delicate rattan basket hanging on a wall in the Netherlands, illustrating how commonplace rattan products were in Dutch life by that time. In India, the British used rattan to make the handles of cricket bats, and by the mid-1800s, large quantities of rattan furniture were being produced in Malaysia, Singapore and Indonesia for export to Europe and America. Later in the century, Tonkin cane, from southern China, became one of the first bamboos exported regularly from China to the western nations, and it remains the best and most sought-after high-quality wood for producing fly-fishing rods. Somewhat surprisingly, this Asia-based production and western-centred market trend has continued over the centuries, with the new report showing that two years ago, 84% of bamboo and rattan products came from Asia, and 93% of all products were imported into Europe, North America and within Asia.

Today, bamboo and rattan industries contribute significantly to livelihood and economic development in many countries in the tropics and sub-tropics. For example, In China, more than 7.5 million farmers benefit from the well- developed bamboo industry. In India roughly 8.6 million people are also dependent on bamboo for their livelihoods. In 2012, the domestic market for bamboo and rattan products in major producing countries was estimated at US$ 34.2 billion, with and additional US$ 2.5 billion of international trade in bamboo and rattan products. The new codes have clearly helped us understand the true state of international bamboo and rattan trade, and it might be hoped that they may even have helped foster greater transparency, and be helping reduce illegal cross-border trading.

Keeping track of trade in bamboo and rattan does not stop there, though. At its 123rd /124th Sessions in June, the Customs Co-operation Council of the WCO recommended including 10 new INBAR-proposed codes for bamboo and rattan products in the HS system. When the new system comes into effect in 2017, 24 types of bamboo and rattan products with individual HS codes and nomenclature will be classified and recorded, boosting our knowledge of the growth of a sector in which innovation and "greenness" are the driving forces, and in which more and more people are involved, as growers, producers, businesses, innovators, governments, customers, and traders. Are you?

The report is entitled "International Trade in Bamboo and Rattan in 2012" and is available online here – http://www.inbar.int/publications/?did=292

Andrew Benton, *Manager, Networking and Partnership Unit*
Wu Junq, *Senior Officer, Trade Development Programme*
INBAR www.inbar.int

Smart phones tell the story of wood products

Forest product traceability promotes responsible resource management

Today, consumers are increasingly concerned with the origin of products they purchase and the impact on the natural resources from which they are derived. The forest sector has put forward a number of initiatives to provide assurances to consumers around the legality of product sources and management of forest resources including government policies, forest certification systems, and lifecycle analyses. Traceability, a process that increases transparency into the production process, is the next frontier in supporting sustainable forest management.

Since 2011, the International Model Forest Network have supported the development of "ThisForest" which traces the stories of forest products from their origin to the marketplace. The initiative aims to provide greater transparency into the industry and provide marketing benefits for businesses that embrace sustainable practices. Currently, projects are ramping up in Canada, Cameroon and Spain.

For Daniel Arbour, Canadian Model Forest Network, "The beauty about working with the International Model Forest Network is that we're able to exchange knowledge around the emergence of traceability in different markets in different countries. Whether it would be in Spain with mushrooms or in Africa with wooden pens or in Canada with log homes and carvers, we all find that traceability can add tremendous value for all of those businesses."

With traceability, consumers will find unique "QR" codes on forest products of participating businesses, which they can scan using their smart phones. The website reveals the story of that product, giving consumers a connection to the point of origin of the products they purchase and access to the companies.

Companies building log homes in Canada

Both Moore Log and Timber Homes and Zirnhelt Timber Frames build handcrafted log and timber homes. Moore Homes sources its log and timbers (cedar and fir) primarily off of the West Coast of British Columbia in a well managed forest stand. Zirnhelt Timber Frames buys its Douglas fir (*Pseudotsuga menziesii*) locally.

"Building handcrafted timber homes is the product but in a bigger picture what we're doing is we want to create a rural sustainable business" said Damon Zirnhelt, co-owner of Zirnhelt Timber Frames, "We want to add more value per cubic meter of wood that we use and celebrate craftsmanship."

Moore Homes' clients are from Canada, United States, European Union, Eastern Europe and Japan. *ThisForest* provides

them with an opportunity to tell their story, provide credibility and show responsibility for the products they manufacture. "Whether it's having access to FSC forests or being involved in a traceability program, we're able to provide people with more assurances about where the wood comes from" said Aaron Moore, owner.

Zirnhelt is interested in traceability because it will help formalize their story. "What sells for us is our story. And if we can explain it well and people believe it and they can see it and touch the product and see where the wood comes from, that's what sells the house. The type of traceability that we're talking about here is far more applicable than other more formal large scale certification programs."

Communities producing pens in Cameroon

In Cameroon and elsewhere in the Congo Basin, up to 60% of the timber can be abandoned in the forest after harvesting operations. Through the Dja et Mpomo Model Forest, local communities and resource management agencies have built relationships which have led to the communities being allowed access to the abandoned resource. To help the communities, the Lac-Saint-Jean Model Forest in Canada provided equipment and training for the production of pens made from the fallen wood.

Traceability has an important role in this project because it guarantees the origin or source of the wood that is used to produce the pen. According to Caroline Bilogui from the African Model Forest Network, traceability supports the Model Forest in the control of natural resource management and will open up more markets for the community.

Contemplating the Future

Increasingly, there is a sense that we are approaching a new era for better connecting consumers with the source and stories of their products, and guaranteeing socially fair and green supply chains. While certification schemes remain the leading mechanism to service this need, the rapid evolution of technology, government policies (ITTO, FLEGT, etc.), and company investments will transform the market place, and the traceability initiative Model Forests experimented with has only opened more opportunities.

Since 1992, the International Model Forest Network has been bringing people together to test and apply innovative approaches to managing the world's ecosystems and landscapes in a sustainable manner. There are currently 60 Model Forests in 30 countries covering more than 80 million hectares. Model Forests are based on a flexible approach to natural resource management that combines the social, environmental and economic needs of local communities with the long-term sustainability of large landscapes in which forests are an important feature.

To learn more:

- *ThisForest*: http://thisforest.info/
- Video: http://youtu.be/KJWawyfkzbo
- IMFN: imfn.net

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News from Guyana

After years of urging by concerned members of the public, an independent daily newspaper finally contracted a helicopter in August 2014 to fly a journalist and photographer over one of the major sorting areas used by one of the transnational loggers, Chinese-owned Bai Shan Lin. A helicopter avoids the legal ability of the Guyana Forestry Commission to prevent public access to the State Forests which cover more than two-thirds of the country's land area. Double-page pictures of the thousands of logs of furniture-quality timbers stacked and being loaded into containers for shipment to and processing in China caused two months of uproar (August-September 2014) in the independent newspapers of Guyana. This was an unprecedented period of attention to a single subject, involving hundreds of pages of photos, articles, editorials and letters.

It did not seem to matter much to the newspaper, to the Guyana Forestry Commission or to Bai Shan Lin that the journalists frequently got their facts wrong, or that the GFC evidently did not know which laws applied under what circumstances. The uncontested aerial photos caused stakeholders to protest the export of such fine timbers for external processing instead of in-country as required by parliamentary-approved national policy since 1997. Stakeholders also queried how one expatriate company had acquired *de facto* control over more than 1.4 million hectares, legally and illegally. Unfortunately, the publicity coincided with the three-months summer vacation of the National Assembly (July-September), so the Natural Resources sectoral committee (the equivalent of a Westminster select committee) was not in session to pursue the many allegations of corruption and incompetence. This furore quickly extended to the local subsidiary of an Indian coffee retailer which has concessions over almost ¾ million hectares but no known experience of tropical forest management or harvesting, and which also engages solely in log export instead of the promised in-Guyana processing.

Apparently without checking on the legality of the concessions, the head of the GFC challenged the shadow Minister of Natural Resources to a public debate. That challenge was accepted, in spite of national rules against civil service participation in political matters. The time for that debate has long passed, and it appears that the GFC Commissioner has withdrawn his challenge. The Opposition Minister has reiterated that he will raise questions in the sectoral committee. This issue has now become submerged in a greater political fuss, because the National Assembly has not re-convened after its summer vacation. There is yet another fault in the standing orders of the National Assembly, such that the Opposition parties cannot force a recalcitrant Government to re-convene the parliament if it does not want to.

How does this political manoeuvering concern the forest sector? In the slow-moving process towards a Voluntary Partnership Agreement (VPA) under the EU Forest Law Enforcement, Governance and Trade (EU-FLEGT) action plan (2003), Guyana will need to amend its laws and regulations to match EU requirements for a legality verification system. The GFC is unwilling to amend the technically defective Forests Act 2009. However, the Ministry of Natural Resources and the Environment appears to have agreed in early 2013 to general legislative review of the natural resources sector in the context of the long-moribund integrated national land use planning. And that agreement specifically mentions the Forests Act 2009.

Although the VPA development process has almost stalled at government level, the EU has funded the NGO Amerindian Peoples Association (APA) with the UK-based Forest Peoples Programme to adapt a pair of FERN videos to the cultural conditions of Guyana. These videos help the indigenous peoples (9 per cent of the national population and the majority in the forest-covered hinterland) to understand the principal forest governance issues. In just 15 minutes, the main video covers human rights and international backing; coordination of land use decision-making; transparency of decision-making and the availability of policies, laws, procedures and actions to civil society; accountability including civil society oversight and provision for legal challenges to government decisions; participation and co-management in decision-making and taking account of a range of viewpoints; and the need for capacity in funding and human resources in both government and non-government organisations, and time and resources to acquire knowledge and hold culturally appropriate debates.

There was fierce resentment when the APA was awarded an EU grant to develop consultation systems in hinterland areas as part of the VPA development process. Government agencies expressed outrage that the EU had funded an organisation which traditionally suffers endless government deprecation and oral abuse, instead of funding the Government-managed council of village leaders. However, in this case, the GFC has publicly defended the APA in the VPA development process, referring to positive cooperation between the two of them. This is a surprising and welcome change.

Meanwhile, log exports continue to rise, with the volumes in January-August 2014 being more than double the log exports during the same period in 2013; almost all the logs are shipped to China and India for luxury furniture and flooring. The Government of Guyana agreed with Norway in 2009 to limit forest production to not more than the average for 2003–2008, that is 483,000 m^3 roundwood equivalent volume (as used in FAO statistics). Although 2009 production was just below that average, in the four subsequent years 2010–2013 the average has been exceeded. In 2013 it was 570,000 m^3, 18 per cent over the limit. Although the agreement (MoU) with Norway provides for a financial penalty against the Norwegian aid to Guyana, the excesses do not actually seem to have been penalised. This shows the importance of making penalties fiscally effective against the benefits gained from breaking the agreement. In this case, I estimate that the income derived from breaking the agreement is worth 4–6 times the cost of the nominal penalty, per cubic metre.

Janette Bulkan
CFA Governing Council

Partners in Action: A Shade Policy for the City of Toronto

Led by Toronto Public Health, the Shade Policy Committee of the Toronto Cancer Prevention Coalition (TCPC) is a remarkable multidisciplinary partnership consisting of various City divisions, academics, urban planners, architects, dermatologists, landscape architects, environmental organizations and community groups.

The film, "Partners in Action: A Shade Policy for the City of Toronto" describes the twelve year journey of the Shade Policy Committee to develop and implement a Shade Policy in Toronto, the first of its kind in North America. The video promotes the importance of shade as an effective strategy to protect against overexposure to ultraviolet radiation (UVR), which is a major cause of skin cancer.

Skin cancer is the most common cancer in Ontario and represents one third of all new cancer cases. Children are at higher risk. The Shade Policy stipulates that the provision of adequate shade whether natural or constructed should be a key consideration in planning and design of all city-owned and operated outdoor venues, especially where children are in attendance.

Trees with dense, wide canopies and low foliage not only provide the greatest protection against the sun but trees are a mitigating factor of air pollution and the urban heat island. The Shade Guidelines (www1.toronto.ca/health/shadeguidelines) were created in 2010 by the Shade Policy Committee as directed by the Toronto Board of Health and City Council to assist the City's agencies, boards, commissions and divisions (ABCD's) with the implementation of the policy.

Acknowledged in the US Surgeon General's report this past year, the Shade Policy for the City of Toronto is an example of a policy that reinforces how health and the environment are inextricably linked, and can easily be adapted and adopted by other municipalities who wish to have a shade policy of their own. The Committee has already received inquiries to work with other municipalities.

The Shade Policy Committee was chosen as the recipient of the 2014 Canadian Dermatology Association Public Education Award for the film, which we also recently screened at the 11th Canadian Urban Forest Conference, in Victoria, BC. To view the film, please visit: http://www.youtube.com/watch?v=Jg1jD6E43Z4&feature=youtu.be

Adrina Bardekjian, MFC, PhD Candidate (ABD)
Program Manager, Urban Forestry, Tree Canada
Toronto Cancer Prevention Coalition Shade Policy Committee
Film Director, Partners in Action: A Shade Policy for the City of Toronto

Forestry Research Institute Of Nigeria (FRIN): efforts towards ex-situ conservation and sustainable utilization of timber and flora species in Nigeria

Enrichment planting of economic trees (Photo: Asinwa Israel)

In-situ conservation is the planned protective management of flora and fauna resources, to retain natural balance, diversity and evolutionary change in their natural environment. It is a protective measure taken, to prevent the loss of genetic diversity of a species, to save the species from extinction, and protect their specific ecosystems or niches from damage thus promoting their existence and sustained utilization. Ex-situ conservation on the other hand indicates the extraction of these plants for conservation in herb gardens. This has always been the system employed by native herbalist and various traditional groves in Africa, it's a system known more protective of this germplasm. The Pharmacy Flora Colony (FRIN herbal garden) and indigenous economic trees plantations in FRIN are one of these

Deforestation and vegetation losses are threatening the in-situ conservation of valuable economic trees medicinal plants of the Nigerian forest areas. This situation has caused the loss of diversity between and within these plant species inspite of the importance of biodiversity conservation in sustaining life. The ex-situ conservation of medicinal plants and Nigerian indigenous trees is advocated for all available and useful species. A project to conserve indigenous tree species and medicinal plants was established at the Forestry Research Institute of Nigeria (FRIN). This was to conserve and reduce the number of endangered species of both flora and timber species in Nigeria.

Established Terminalia superba *in Jericho, Ibadan, Nigeria (Photo: Asinwa Israel)*

The Forestry Research Institute of Nigeria (FRIN) has commenced the establishment of medicinal plant gardens and indigenous trees plantations, as ex-situ gene bank collections. The FAO only recently emphasized the need for inventories and interventions in the acquisition of data for the justification of genetic resources collection for conservation in Nigeria. Hence, this initiative will help to provide major information for future developments and establishment of medicinal plant germplasm and the indigenous trees species conservation in Nigeria and further extended or scaled out to other part of the world.

S/N	LOCATION (VEGETATIONAL ZONE)	NO OF PROPOS-AL	STATUS
1	High forest area	4	Commenced (3)
2	Transition forest area	4	Yet to commence
3	Guinea Savanna area	4	Commenced (2)
4	Sudan Savanna area	4	Yet to commence

Present Developments in the High forest Zone

The erstwhile high forest area of Nigeria are presently, seriously degraded but presently efforts at FRIN have established the first phase of these banks at Jericho.

Problems and potentials

Adequate data are required for justifying germplasm collection and conservation. Presently, this is not adequately sourced in Nigeria, thus a major problem requiring immediate attention.

Collaboration or partnerships are potential developments required for the continued growth of ex-situ conservation of the genetic resources of our medicinal plants in Nigeria.

It is essential that biodiversity, particularly in the tropical regions of the world, is conserved taking urgent steps. Economic gains, immediate or long range, concerning individuals, organizations or governments are one of the important factors in biodiversity conservation priorities.

- The need for the conservation of plant or medicinal plant and economic trees genetic resources is very important if the nation will not lose all of her major plant resources, on which the future depends.
- More financial resources are needed and significantly more research efforts are required in order to ensure continuity of genetic resources.

For more information on watershed management and economic trees seed procurement in FRIN contact asinwaisrael@yahoo.com and olayinkairoko@yahoo.com

Our forest, our life, our future, our health. Protect it NOW!

Lawal Ibraheem
CFA Governing Council

A new multi-disciplinary institute of forest research and a new experiment in environmental resilience

BIFOR
BIRMINGHAM INSTITUTE OF FOREST RESEARCH

In October 2013, the University of Birmingham launched the Birmingham Institute of Forest Research (BIFoR) to address two major challenges: the impact of climate and environmental change on woodlands, and the resilience of trees to invasive pests and pathogens. In forming the Institute we realised that these are not narrow challenges, and so BIFoR is a cross-campus initiative at the heart of the University of Birmingham's response to the issues facing the terrestrial environment. Drawing on disciplinary expertise across the university and beyond will enable BIFoR to adopt a systems-science approach, blending field-scale experimental work and computer simulation with research and scholarship on governance and societal change.

Readers of this Newsletter know well that forests are consistently undervalued in conventional economic analyses and decision making, and now face existential threats. We are all too aware how land-use change impacts on the whole planet's ability to process carbon; the world's forests are estimated to absorb as much as 30% of annual global anthropogenic CO_2 emissions. Global CO_2 concentrations have now reached 400ppmv (parts per million by volume) and are anticipated to continue rising exponentially. Understanding the impact of rising CO_2 on the ways that ecosystems function, and on biodiversity, are pressing global challenges if prosperous human survival is to be ensured.

BIFoR will use whole-system observation and manipulation in the field, combined with next-generation -omics (ie. next-generation analysis of genes and metabolites for the identification of ecological communities and investigation of their response to biotic and abiotic challenges). Along with molecular plant pathology experiments in the laboratory, this research will elucidate the individual climate and environmental change processes impacting woodlands and forests, and seek strategies to increase the resilience of trees to invasive pests and pathogens. We want to co-create this research programme with partners from across the global research community and with partners from across all the sectors of commerce and civil society engaged with woodlands, forests and land management.

University of Birmingham staff are already involved in research in forests throughout the world, and BIFoR will maintain and expand the university's efforts in this area. The very low area afforested in the UK might suggest that there is little to be gained from studies in the UK, but the Institute does not take this position. There is a surge in demand for wood in the UK, as elsewhere, due to growth in the biomass energy sector and the demand for locally-sourced materials for low-carbon sustainable construction. This demand is currently being met by imports. If the UK cannot mobilise its intellectual, entrepreneurial, and social assets to correct this imbalance and move towards sustainable carbon management, it can hardly speak with authority about what should be done with the rainforest or any other threatened landscape. Furthermore, lessons learnt from UK woodland and forest can have globally relevant implications.

BIFoR will use the major part of its £15m founding endowment to establish a Free-Air Carbon Dioxide Enrichment (FACE) experiment in mature, unmanaged, deciduous woodland in Staffordshire, UK. BIFoR-FACE will be one of only two ongoing forest-FACE experiments worldwide, distinctive in its setting in an arable-woodland mozaic. BIFoR-FACE will establish 30m-diameter woodland patches fumigated by air with above-ambient CO_2 but which are unperturbed in every other respect. The CO_2 perturbation is maintained at a constant level (+150 ppmv is the current plan), taking account of diurnal and seasonal cycles, vertical gradients, and wind. The experiment is designed to run for more than 10 years, starting now with baseline measurements and switching on the CO_2 at bud-burst 2016.

The Birmingham Institute of Forest Research (BIFoR) will focus on the impact of climate and environmental change on woodlands, and the resilience of trees to invasive pests and pathogens

Top-level research questions to be addressed by the BIFoR-FACE experiment are:

1. Does elevated CO_2 increase the carbon storage in a mature temperate deciduous woodland ecosystem?
2. Do other macro- or micro-nutrients limit the uptake of carbon in this ecosystem now, or are they likely to in the future?
3. What aspects of biodiversity and ecosystem structure-and-function alter under elevated CO_2 and how do these alterations feed back onto carbon storage?
4. How can this woodland best be managed for carbon storage under climate change, and what general lessons can be learnt?

Many subsidiary research questions have already been identified, each, it is hoped, forming a project in itself to be led by researchers from the University of Birmingham and worldwide.

Mature forests and woodlands represent an ecological "grand challenge" because of the strong couplings between animal, plant and microbial communities at every spatial scale from the plant cell to the landscape and at every temporal scale from the lifecycle of soil microbes to the potentially infinite lifetime

of some individual trees. From this perspective, economically important agricultural and plantation landscapes represent highly simplified systems in which many of the homeostatic processes of importance in mature forests have been replaced by human intervention. When analysed from a systems perspective, mature forests offer insights into the sustainable management of the terrestrial biosphere from which strategies for sustainable agriculture and silviculture can be deduced (informing, for instance, "sparing space for nature" versus "sharing space with nature" approaches to maintaining biodiversity and maximising ecosystem service provision). By establishing BIFoR FACE and working in partnership as a global network of forest FACE facilities, our aspiration is to provide a research facility for experimental climate science as powerful in ecology as the Large Hadron Collider is in experimental physics.

Rob Mackenzie a.r.mackenzie@bham.ac.uk
Director of the Birmingham Institute of Forest Research

New professional degree program in International Forestry at UBC Forestry

The University of British Columbia's Faculty of Forestry has launched its newest professional degree program – the Master of International Forestry (MIF). Applications are being accepted now for a September 2015 program start date.

The MIF is designed for early/mid-career professionals (preferably 3+ years of work experience) who wish to expedite their careers and advance to leadership positions. The program is targeted at individuals who want to engage productively – and to become leaders – in an international forestry context with international agencies and secretariats (e.g., UN FAO, UNEP), finance institutions (e.g., The World Bank, Asian Development Bank), transnational forest products enterprises, government ministries, consulting firms, environmental NGOs, and advocacy groups. In order to meet the rapidly changing needs of the international forestry job market, the MIF program will provide training on those skills identified in over 200 forestry and environmental job postings. The program aims to produce global citizens who are 'agents of change and innovation'.

The MIF is a full-time, 10 month course-based master's degree that provides valuable skills relevant to a career in rural development, forest conservation planning, sustainable resource management, and conservation policy development, diplomacy and negotiation. Students will be prepared for work in forestry in both developed and developing countries, in natural and plantation forestry, and with subsistence and industrial forestry.

Students will take a suite of courses as partial fulfillment of their degree requirements: international forest governance and policy; international forestry institutions, diplomacy and negotiations; natural resources economics; forest business enterprise; social, community and indigenous forestry; natural resources planning; and forests and society. Immediately following the completion of course work in April 2016, students will undertake an international internship/directed study.

While students will receive refresher courses on foundational knowledge such as soil or forest sciences, students in the MIF program will mostly contend with the very immediate and complex interactions that occur between the political, economic, social and environmental spheres in a forestry context. Specific attention will be paid to international forest governance, policy, and institutional reform. The MIF is unique in that it also offers a course exploring international forestry institutions and the diplomacy and negotiations that occur at the highest levels of international forestry planning.

Highlights of the program include:

- Complete a professional master's degree in 10 months
- Benefit from a curriculum targeted at major international employers
- Apply your knowledge and skills to international forest issues
- Obtain a world-recognized degree from The University of British Columbia
- Grow your professional network and your career
- Connect with our Faculty's other outstanding graduate students from +40 countries
- Explore Vancouver – consistently ranked as one of the world's best cities

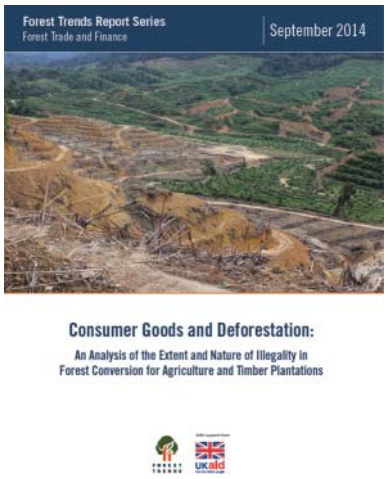
More information about the MIF can be found at: http://www.forestry.ubc.ca/students/graduate/programs/master-of-international-forestry/

Dr. Joleen Timko joleen.timko@ubc.ca
MIF Program Coordinator, UBC

Publications

Consumer Goods and Deforestation: *An Analysis of the Extent and Nature of Illegality in Forest Conversion for Agriculture and Timber Plantations*

Forest Trends



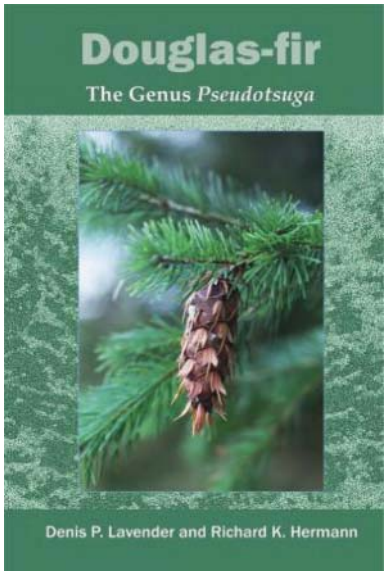
A comprehensive new analysis says that nearly half (49%) of all recent tropical deforestation is the result of illegal clearing for commercial agriculture. The study also finds that around half of this illegal destruction was driven by overseas demand for agricultural commodities including palm oil, beef, soy, and wood products. In addition to devastating impacts on forest-dependent people and biodiversity, the illegal conversion of tropical forests for commercial agriculture is estimated to produce 1.47 gigatonnes of carbon each year—equivalent to 25% of the EU's annual fossil fuel-based emissions.

According to the study, *Consumer Goods and Deforestation: An Analysis of the Extent and Nature of Illegality in Forest Conversion for Agriculture and Timber Plantations,* 90% of the deforestation in Brazil from 2000 to 2012 was illegal, primarily due to the failure to conserve a percentage of natural forests in large-scale cattle and soy plantations, as required by Brazilian law. (Much of this occurred prior to 2004, when the Brazilian government took steps to successfully reduce deforestation.) And in the forests of Indonesia, 80% of deforestation was illegal—mostly for large-scale plantations producing palm oil and timber, 75% of which is exported. While other countries also experience high levels of illegal deforestation, Brazil and Indonesia produce the highest level of agricultural commodities destined for global markets, many of which wind up in cosmetics or household goods (palm oil), animal feed (soy), and packaging (wood products).

Download free of charge from http://www.forest-trends.org/illegal-deforestation.php

Douglas-fir: The Genus *Pseudotsuga*

Denis Lavender and Richard Herman
Oregon State University Press



The Pacific Northwest's iconic Douglas-fir tree rivals coast redwood for honors as the world's tallest tree. It isn't a true fir – the species that was named for Scottish botanist David Douglas is, however, the mostly widely distributed North American conifer.

And it is a marvel of water engineering. From root to top, a mature tree transmits water across more than 22,000 cell walls, each equipped with 50 to 60 elegantly designed valves.

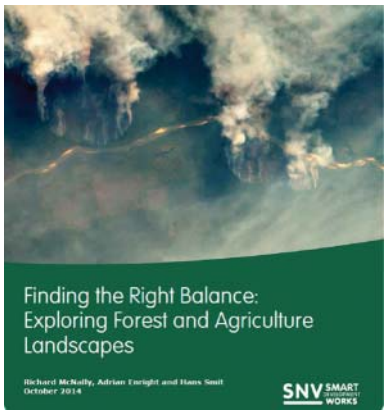
In recognition of this commercially important tree, the Forest Research Laboratory at Oregon State University has published "Douglas-fir: The Genus Pseudotsuga," which details more than a century of research. It covers what is known about the species' evolutionary history, genetics, environmental requirements and breeding programs in Europe, Asia, Australia, New Zealand and North America.

Douglas-fir is native to western North America but has been accepted in forest management programs around the world. It is a member of the genus Pseudotsuga, which includes up to a dozen species in Asia and North America. In Europe, Douglas-fir is the most commonly planted North American tree.

"Douglas-fir" is available free online at http://hdl.handle.net/1957/47168 or in print for $45 ($60 for international orders) from the communications office in the OSU College of Forestry, forestrycommunications@oregonstate.edu.

Finding the Right Balance: Exploring Forest and Agriculture Landscapes

R. McNally, A. Enright and H. Smit
SNV REDD+ Energy and Agriculture Programme

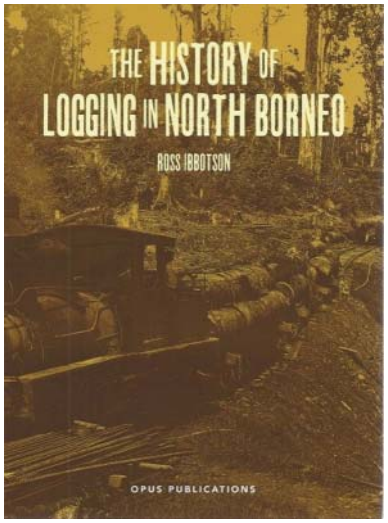


For SNV Netherlands Development Organisation (SNV), an organisation that primarily works on improving agricultural practices to reduce poverty, it is of high interest how we could merge our skills in this area with our expertise in forestry. It was for this reason the REDD+, Energy and Agriculture Program (REAP) was developed. For REAP, the question remains of how we encourage agricultural development in order to increase rural incomes and improve food security without destroying forests. It is critical that we understand this in order to determine our strategy when working in forest-agriculture landscapes.

This discussion paper aims to advance our understanding of the relationship and to propose solutions. To this end the paper develops an assessment framework. It is hoped that the paper will provide guidance to scholars, policy makers and development practitioners to further enrich their understanding and guide them to identify and introduce appropriate interventions that can balance objectives in the forestry and agriculture sectors. In the context of climate change it is no longer a desire but a need to keep the world's forests standing.

The History of Logging in North Borneo

Ross Ibbotson
Opus Publications



This book gives a very comprehensive account of the history of logging in the Malaysian state of Sabah (earlier known as North Borneo), covering every aspect of the industry from its very beginnings in the late 19th century until the present day. The trade in secondary forest products; aromatica, gums, rattan and beeswax which were collected by natives from locations deep in the forest and transported to Europe and China, some as early as the first millennia, is also discussed.

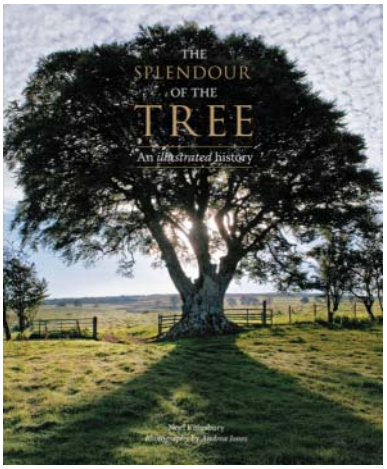
Every facet in the development of logging from the early days, when manpower was used to sophisticated mechanized operations culminating in the helicopter logging of recent years, is described in detail and illustrated with more than 400 photographs, many of them very rare. Early steam-driven machinery, the arrival of the chainsaw, the introduction of tractors and modern logging trucks—all are covered. Not forgotten are the difficulties—such as the major destruction of infrastructure during World War II—and failures—such as the experiment with elephants.

The various means of transporting logs from forest to port—hand-hauling, rail, road, water—are described in detail, as are the dramatic changes in shipping—from the hazardous days of sailing ships which could take weeks to load taking logs mostly to Australia and China to the specialised log-carriers of the 20th century heading to Japan, Korea and China.

Personalities, both local and foreign, involved in the logging industry are also given prominence, with one chapter devoted to the typical life of a pre-war logger.

The Splendour of the Tree – an Illustrated History

Noel Kingsbury
Frances Lincoln



Written by Dr. Noel Kingsbury—a world-class expert on plants and the environment—*The Splendor of the Tree* celebrates the wonder, mystery, beauty, and utility of the tree. It pays homage to 100 key species of tree—chosen for their cultural, economic, or historical signicance and their importance in the natural world—and includes an indispensable cultivation section that advises on the care and selection of trees for the home garden.

The lively, original text analyses the particular characteristics of each tree and the specic role that it plays within the ecosystem and the human environment. Breathtaking, specially commissioned photography by Andrea Jones—one of the world's foremost garden photographers—skillfully captures the nuances of every featured tree. From exquisite close-up detail shots to images of impeccable orchards in bloom, her photographs are both beautiful and informative.

Around the World

USA: Illegal pot grows destroying Colorado's National Forests, U.S. Forest Service says

The United States Forest Service says illegal marijuana grows are destroying Colorado's forests. "It makes all of us feel angry because we're supposed to be the caretakers of this land," explained Heiko Bornhoff a Forest Service Assistant Special Agent.

Since 2008, The Forest Service says it has tracked down 36 illegal pot growing operations hidden in the tree's on federal land in Colorado, with agents seizing more than 100,000 marijuana plants.

An inside look at a large-scale illegal pot grow in the San Isabel National Forest exposed how these operations are leaving long-term damage to not only the land, but the entire eco-system.

"This site will be impacted for several years and maybe longer," said Chris Strebig a United States Forest Service Spokesman.

The Forest Service discovered the sophisticated grow site in 2012, 40 miles southwest of Pueblo, near the town of Rye. Two years later, Strebig says the destruction remains. "There are impacts to cutting down trees and then camouflaging the trunks so no one can see it as they fly over," he said.

The abandoned grow operation is located less than a mile from the main road and near a public hiking trail. "This is a bit closer than the one's we've seen," said Bornhoff. "We're talking big money here?" asked 7NEWS Reporter Jennifer Kovaleski. "Yeah, they generate millions of dollars," said Bornhoff.

The Forest Service says it confiscated more than 7,000 pot plants from the site. At one time, agents estimate it was a $20 million operation. "You have the trees de-limbed about thirty feet up to allow the sunlight coming in," Bornhoff showed Kovaleski. "Each plant also has its own irrigation line going to it."

At the grow site, you can see what's left of a high-tech irrigation system using plastic piping to divert water from a dam up the hill. "This water source flows through this draw right here and goes right down into the lake below," Bornhoff explained while he showed Kovaleski where the water flows. It means when the grow op was occupied; pesticides and marijuana runoff were likely flowing directly into our water sources down the mountain.

"Some of the stuff is hazardous material, it can be things that kill animals and kill plants," said Strebig. Left over pesticides, fertilizers, abandoned work boots, and trash still occupy the deserted illegal grow site. "A garbage dump that the Forest Service will now have to clean up," said Strebig. "It's a make-shift living space is what it is."

Strebig says people were living here 24/7, protecting their illegal cash crop. "It concerns us a lot, the potential safety issues of people protecting a multi-million dollar investment, not far from a hiking trail," he said. There were no arrests. The site is still under investigation, but federal agents believe a drug trafficking organization is likely responsible for the illegal pot grow.

For the Forest Service, it's an on-going battle to find and top stop illegal pot grows hidden within Colorado's 22 million acres of treasured national forest. "When I look at this site it's terrible, it does not look like a national forest I've ever seen," said Strebig.

thedenverchannel.com

Brazil dismantles 'biggest destroyer' of Amazon rainforest

The authorities in Brazil say they have dismantled a criminal organisation they believe was the "biggest destroyer" of the Amazon rainforest. The gang is accused of invading, logging and burning large areas of public land and selling these illegally for farming and grazing. In a statement, Brazilian Federal Police said the group committed crimes worth more than $220m (£134m).

A federal judge has issued 14 arrest warrants for alleged gang members. Twenty-two search warrants were also issued and four suspects are being called in for questioning. The police operation covers four Brazilian states, including Sao Paulo. Five men and a woman have already been arrested in Para state in the north of the country, Globo news reported.

The BBC's Wyre Davies in Rio de Janeiro says details are still sketchy, partly because the police operation is focused on one of the most remote and inaccessible parts of the Amazon region. Political and police corruption is still rife in Brazil's interior, our correspondent adds. That problem coupled with alleged ineptitude on the part of the federal government means that loggers and illegal miners are able to operate with impunity, he says.

The police announced the operation in a statement: "The Federal Police carried out today Operation Chestnut Tree designed to dismantle a criminal organisation specialising in land grabbing and environmental crimes in the city of Novo Progresso, in the south-western region of Para. "Those involved in these criminal actions are considered the greatest destroyers of the Brazilian Amazon rainforest."

The group members face charges of invading public land, theft, environmental crimes, forgery, conspiracy, tax evasion and money laundering. They could be sentenced to up to 50 years in jail, although the maximum length that can be served by law in a Brazilian prison is 30 years.

Last year, the Brazilian government said the rate of deforestation in the Amazon increased by 28% between August 2012 and July 2013, after years of decline. It made a commitment in 2009 to reduce Amazon deforestation by 80% by the year 2020. Brazil is home to the biggest area of Amazon rainforest, a vast region where one in 10 known species on Earth and half of the planet's remaining tropical forests are found, according to the leading conservation organisation WWF.

bbc.co.uk

UK: U-turn over forests in the infrastructure bill is a victory for the environment

We're constantly fed the idea that people feel hopeless about the environment, can't see a way to intervene in a political system that ignores the natural crisis we face, and that the future is looking bleak.

Well, the last 24 hours have shown that we can have hope. Until Wednesday night, the government was about to sneak through a part of the infrastructure bill which would've cleared the way for forests to be sold off and built over. A hidden part of a sprawling law would have made it legal for the government to hand any public land – except that owned by the crown estates – to the Homes and Communities Agency, ready for building on.

Over 150,000 38 Degrees members signed a petition in a day, calling for the forests to be excluded from the infrastructure bill. Thousands of people kicked up a social-media storm in just a few hours, tweeting peers to exclude forests.

People-power did what it does best, and forced a government u-turn which will see forests protected in law. Late last night, Lord Ahmed announced there will be a new amendment tabled which will see the public forest estate excluded from any land sell-offs.

The proof that we were on to something was in the government's knee-jerk reaction. They said that the government's "intention" was not to sell off the forests, and they said they wanted to keep them in public ownership. But words are just words until they're law, and promises from ministers are no match for an Act of Parliament that will stay on the statute book for decades.

Forest campaigners, of which we're just one among many, have been fighting to protect forests in law for a long time. Back in 2011, over 500,000 38 Degrees members forced the government to back down on plans to privatise them.

38 Degrees campaigns on lots of different issues, but the response to these proposals was extraordinary: this was the fastest-growing petition we've ever seen.

So why do forest campaigns inspire such an impassioned response? Because woodland is used by everyone, and needed by everyone. No one wants the government to make a profit out of something which belongs to all of us, and no one wants to live in identikit towns without woods or wildlife.

But forests are also a symbol of the bigger challenge we face when we fight to protect the environment. This is a fight about long-term conservation over short-term profit. And it's a fight to protect something that's taken centuries to grow, and can be destroyed in a decade.

theguardian.com

Ghana: Environment Ministry wants more research work on tree species

The Ministry of the Environment, Science, Technology and Innovation, has appealed to research institutions and scientists to come out with new varieties of tree species to be used to check desertification and climate change. Dr. Sylvester Anemana, Chief Director of the Ministry, made the appeal at a Roundtable Meeting and Regional Learning Workshop on the implementation of the Ghana Environmental Management Project (GEMP) and the Sustainable Land and Water Management Project (SLWMP) in Wa. He said the two projects had impacted positively on the lives of the people, as they had introduced the adoption of community tree nurseries in the communities, improved land usage, and promoted agricultural yields, as well as reduced bushfires.

The Chief Director said GEMP had addressed challenges in agriculture and food insecurity, and improved development of forestry, resource and social developments, as well as vegetation covers in the communities to help check climate change.

Dr. Anemana announced that 308 tree species had been procured at a cost of 2,000 Ghana cedis, for distribution to sustain the nurseries, while many of the nurseries in the communities were producing seedlings for planting throughout the year in the regions.

Mr. Carl Fiati, a Deputy Director at the Environmental Protection Agency, said GEMP would come to an end in February 2015, and expressed EPA's appreciation to the Canadian government, for providing financial and technical assistance for its implementation.

He said, the EPA in collaborating with its implementing partners, including the beneficiary communities, had submitted a "concept note" for consideration by the Canadian government for a new project; Ghana Rural Resilience and Innovative Project (GRRIP). He said the EPA was optimistic that the Canadian government would give due consideration to the request, to enable the EPA to build on the successes and experiences gained through the implementation of GEMP.

Mr. Fiati also expressed government's appreciation to the World Bank for providing the needed technical assistance and guidance to government, to secure additional financing from the Global Environment Facility for the implementation of the Ghana Sustainable Land and Water Management Project (SLWMP).

The additional financing had scaled up the area under sustainable land and water management interventions from the original target area of 2,000 hectares to an expanded area of 6,000 hectares sustainable forest management activities in eight gazetted forest reserves with the area of 172,225,54 hectares.

Stakeholders, including traditional rulers, officials of the Game and Wildlife, EPA, Department of Forestry, Ministry of Food and Agriculture, civil society organisations from the Upper West, Upper West and Northern Regions, are attending the three-day forum, to exchange and share knowledge, experiences and lessons learnt in the course of the project implementation.

It also offered the opportunity to cross-check monitoring and evaluation data and to discuss its bearing on project management and the eventual continuation of project activities, and come out with constraints and challenges and map out strategy to address them.

ghanaweb.com

Peru's forests store more CO_2 than US emits in a year, research shows

Peru, the host for December's UN climate change summit, stores nearly seven billion metric tons of carbon stocks, mostly in its Amazon rainforest. That's more than US annual carbon emissions for 2013 which were calculated at 5.38 billion tons, the new research by the Carnegie Institute for Science (CIS) shows.

Home to the second-largest area of Amazon rainforest after Brazil, Peru is to date the most accurately carbon-mapped country in history thanks to high-resolution mapping which provides a hectare-by-hectare look at its carbon reserves, it was reported in the Proceedings of the National Academy of Sciences (PNAS).

The research by CIS's Greg Asner means Peru now knows precisely how much carbon it is storing in its rainforest and where that carbon is being kept out of the atmosphere, allowing the country to negotiate a fair price for its reserves on the global carbon market.

"We found that nearly a billion metric tons of above-ground carbon stocks in Peru are at imminent risk of emission into the atmosphere due to land uses such as fossil fuel oil exploration, cattle ranching, oil palm plantations and gold mining," Asner told the Guardian.

The good news is there may be up to 30 million hectares of potential new protected forest areas, Asner said, which may be able to store close to three billion metric tons of carbon. The majority of already protected carbon stocks exist only in 10 parks and reserves, and just four of these are fully enforced.

"Transitioning partially protected preserves to fully protected ones would help to counterbalance a great deal of the carbon that is expected to be lost due to land use in the near future," Asner added.

Using advanced three-dimensional forest mapping data integrated with satellite imaging data the team was able to create

a map of carbon density throughout the 128 million hectare (320 million acre) country at a resolution of one hectare (2.5 acres).

"This new map provides the evidence needed to start negotiating in the carbon market on a bigger scale," said Manuel Pulgar-Vidal, Peru's environment minister, whose ministry supported the Carnegie Institution in creating the map.

"Our government is also studying carbon stocks in the soil, and is doing a forest inventory, and we have a forest investment program. These initiatives will better prepare us to face changes in land use."

Measuring 69 million hectares, Peru's Amazon covers more than 60% of the country. But deforestation, agriculture and land-use change account for 61% of Peru's carbon emissions.

Tropical forests convert more carbon from the atmosphere into biomass than any other terrestrial ecosystem on Earth. Currently tropical deforestation and forest degradation account for about 10% of the world's carbon emissions annually.

This new mapping approach is scalable to any tropical country, said researchers.

theguardian.com

Ethiopia: Stoves cook up relief for Ethiopia's forests

A simple device could spell relief for Ethiopia's beleaguered forests by making cooking more efficient while reducing carbon emissions, new research shows. Improved Cooking Stoves (ICS) have a long history in nature conservation and development projects, as they bear the potential to reduce the pressure on forest resources and improve local livelihoods at the same time. Nevertheless, the success of ICS activities depends on a variety of different factors including the quality and adequacy of the specific cooking device as well as the scope of associated implementation activities such as local trainings and information campaigns.

Recently, the journal *Land* published a study, conducted in part by researchers at CIFOR, on fuelwood savings and carbon emission reductions through the use of ICS in the Kafa Biosphere Reserve in Ethiopia. The study featured stove efficiency tests and a household survey with 140 interviews to evaluate the potential of ICS to mitigate negative impacts of fuelwood harvesting on the forests.

Deforestation and forest degradation are major problems in Ethiopia—the country has lost approximately 140,000 hectares of its forest cover annually in the years between 1990 and 2010. The Kafa Biosphere Reserve in Ethiopia's southwest is one of the country´s last natural high-forest areas; it has been recognized as part of the Eastern Afromontane Biodiversity Hotspot, a Key Biodiversity Area, and a UNESCO biosphere reserve.

From 2009 to 2014, The Nature and Biodiversity Conservation Union (NABU) implemented the large-scale project "Biodiversity under climate change: Community-based Conservation, Management and Development of the wild Coffee Forests," funded by Germany's International Climate Initiative (IKI). The dissemination of ICS was an integral component of the project, given that fuelwood collection is among the leading drivers for deforestation and forest degradation in Ethiopia.

The fuelwood is used to cook in the traditional way, on an open fire with a clay plate (*mitad*) resting on three stones (known as the three-stone method) to bake *injera*, the typical Ethiopian bread made from teff flour. However, this form of cooking does not use fuel efficiently, and creates health risks due to the smoke emitted and the risk of burns.

The so-called *Mirt* stoves—designed specifically for this style of cooking—have a combustion chamber that channels the heat to the *mitad* and to an additional chimney. The stove is more efficient, can use of a wider variety of fuel sources such as biofuel waste like wood chips, and it enables the preparation of food in parallel (a pot for sauce on the chimney, *injera* on the *mitad*). Additionally, the stove reduces the amount of smoke produced—as well as the risk of burning oneself while cooking.

Some 11,000 ICS have been made available for local communities in the biosphere reserve. Stove beneficiaries were selected according to social criteria intended to guarantee access to stoves, independent of income and educational level. The aim of introducing ICS was to reduce the need for fuelwood—and through this to reduce the pressure on the forests by supporting more efficient combustion in the new stoves.

According to the study nearly 40 percent of fuelwood was saved compared with traditional cooking methods for *injera* production. The fuelwood reduction translates to a saving of 11,800 tons of carbon dioxide emissions annually, which equals the amount of carbon stored in more than 30 hectares of forest area in the biosphere reserve.

Assuming a four-year lifespan for each stove, with 80 percent of stoves being used regularly, the scientists estimate savings of more than 45,000 tons of fuelwood saved. Given the low-tech nature of this solution, the researchers expect neighboring households to seek to copy this approach to save wood, increasing demand for the stoves.

Furthermore, the study documented positive side effects for households in the form of minimized risk of burnings, reduced smoke development, better taste of prepared food and reduced expenditures for fuelwood.

Potential redesigns of the *Mirt* are possible, with different sizes, components and the possible replacement of the traditional clay plate with an iron plate, according to the study. These recommendations will support future ICS activities in NABU's follow up project.

The ICS program is just one of many stove-dissemination programs worldwide—there are many even within Ethiopia, though the NABU project is one of the largest. The *Mirt* stove is designed for the cooking habits of Ethiopia and Eritrea – limiting its replicability outside of the region.

blog.cifor.org

Global: Climate change models 'underplay plant CO_2 absorption'

Global climate models have underestimated the amount of CO_2 being absorbed by plants, according to new research. Scientists say that between 1901 and 2010, living things absorbed 16% more of the gas than previously thought. The authors say it explains why models consistently overestimated the growth rate of carbon in the atmosphere. But experts believe the new calculation is unlikely to make a difference to global warming predictions. The research has been published in the journal Proceedings of the National Academy of Sciences.

Working out the amount of carbon dioxide that lingers in the atmosphere is critical to estimating the future impacts of global warming on temperatures. About half the CO_2 that's produced ends up in the oceans or is absorbed by living things. But modelling the exact impacts on a global scale is a fiendishly complicated business.

In this new study, a team of scientists looked again at the way trees and other plants absorb carbon. By analysing how CO_2 spreads slowly inside leaves, a process called mesophyll diffusion, the authors conclude that more of the gas is absorbed than previously thought. Between 1901 and 2100 the researchers believe that their new work increases the amount of carbon taken up through fertilisation from 915 billion tonnes to 1,057 billion, a 16% increase. "There is a time lag between scientists who study fundamental processes and modellers who model those processes in a large scale model," explained one of the authors, Dr Lianhong Gu at Oak Ridge National Laboratory in the US. "It takes time for the the two groups to understand each other."

Scientists monitor carbon dioxide levels near trees to work out how much is absorbed. The researchers believe that Earth system models have over-estimated the amount of carbon in the atmosphere by about 17%, and think their new evaluation of plant absorption explains the gap. "The atmospheric CO_2 concentration only started to accelerate rapidly after 1950," said Dr Gu. "So the 17% bias was achieved during a period of about 50 years. If we are going to predict future CO_2 concentration increases for hundreds of years, how big would that bias be?"

Other researchers believe the new work could help clarify our models but it may not mean any great delay in global warming as a result of increased concentrations of the gas. "The paper provides great new insights into how the very intricacies of leaf structure and function can have a planetary scale impact," said Dr Pep Canadell from the Global Carbon Project at CSIRO Australia. "It provides a potential explanation for why global earth system models cannot fully reproduce the observed atmospheric CO_2 growth over the past 100 years and suggests that vegetation might be able to uptake more carbon dioxide in the future than is currently modelled.

"Having more carbon taken up by plants would slow down climate change but there are many other processes which lay in between this work and the ultimate capacity of terrestrial ecosystems to remove carbon dioxide and store it for long enough to make a difference to atmospheric CO_2 trends." Many experts agree that the effect is interesting and may require a recalibration of models – but it doesn't change the need for long-term emissions cuts to limit the impact of carbon dioxide. "This new research implies it will be slightly easier to fulfil the target of keeping global warming below two degrees – but with a big emphasis on 'slightly'," said Dr Chris Huntingford, a climate modeller at the UK's Centre for Ecology and Hydrology. "Overall, the cuts in CO_2 emissions over the next few decades will still have to be very large if we want to keep warming below two degrees."

bbc.co.uk

China: Wild panda land threatened by China's forest reforms

China's 1600 wild pandas could suffer further losses thanks to legislation that would allow as much as 15 per cent of their habitat to be sold off for commercial uses.

That's the warning from a team of researchers that has modelled the effects of the Chinese government's "forest tenure reform" legislation. The reforms will allow the sale of as much as 1.8 million square kilometres of forest, owned collectively by local villagers.

"The worst outcome is about 15 per cent of panda forest habitat completely gone," says Li Zhang of the Beijing Normal University.

An alternative option would be for the government to make a one-off payment of $1.3 billion or so to the current owners – or whoever buys the land – for an agreement to preserve the habitats. China has already spent $100 billion on "eco-compensation" schemes over the past 10 years.

newscientist.com

Global: Your shopping comes from illegally deforested land

Every time we go shopping we fill our trolleys with contraband without knowing it. It turns out that commercial plantation owners and food companies are the worst offenders at illegally cutting down the rainforest. These are the same firms that fill our supermarket shelves with everything from beef and biscuits to shampoo. Commercial agriculture is now responsible for more than 70 per cent of all tropical deforestation, and half of that deforestation is illegal, says forests expert Sam Lawson, an independent researcher formerly at Chatham House in London. Lawson has compiled a mass of data from government files and local studies from countries around the world.

The trade in crops and animal products grown on illegally cleared land is worth $61 billion a year. Half of the illegally produced crops are exported, mostly to the developed world, where they end up in major brands. This includes an estimated 44 per cent of internationally traded palm oil, 20 per cent of soya and 14 per cent of beef, says the study, which is published by Forest Trends, a non-profit organisation in Washington DC.

The European Union is the biggest importer of commodities from illegally deforested lands, according to the report, making it responsible for about a third of the deforestation caused by internationally traded farm products. "Belying its environmental rhetoric, Europe's is the hidden hand in tropical deforestation," says Saskia Ozinga of forest campaign group FERN in Moreton-in-Marsh, UK. It is followed by China, India, Russia and the US.

The EU and US both have laws banning imports of illegally logged timber, but they have no similar laws to keep out agricultural commodities grown on illegally cleared forests, says Lawson. "This unfettered access is undermining the efforts of tropical countries to enforce their own laws."

Indonesia is the current heartland of this ransacking of the rainforests. Between 2000 and 2012, the period covered by Lawson's study, around 80 per cent of forest clearance in Indonesia has been illegal. Three-quarters of the products grown there are for export; Indonesia is the largest source of palm oil, which turns up in about one-third of all consumer products.

Also in the frame is Brazil, where 90 per cent of deforestation since 2000 has been illegal. But rates of forest loss there have fallen sharply since the government got tough on law-breakers in 2004.

Other countries highlighted include Malaysia, Bolivia, Paraguay and Papua New Guinea. New areas are also emerging: tropical Africa is the new front line for palm oil production.

The illegality can take different forms. Most of the commercial farmers that supply raw materials for our food and cosmetics do have a permit to clear land, says Lawson. "But often the permits are corruptly issued," he says, or the farmers break rules that require them to preserve some of the forest.

Newscientist.com

Peru: Local activists are paying with their life to protect their forests in Peru

Edwin Chota was killed in the forest he had fought to protect. The Peruvian environmental activist had appealed to his government for help after receiving death threats from the illegal loggers that plagued the area around his village, deep in the Amazon rainforest. And yet, in September, he and three other prominent members of the Peruvian Ashéninka community were ambushed and shot on a jungle trail as they travelled to meet fellow activists from neighbouring Brazil. Chota's widow journeyed six days by river to the regional capital to report their deaths.

Chota's death is a reminder of the price that local activists in some of the world's most remote areas are paying as they fight to defend their communities from exploitation and industrialisation. Global demand for natural resources is growing, and indigenous people are receiving little protection from those who would destroy their land, forests, and rivers. Instead, they are being murdered with impunity at an alarming rate, sometimes with the complicity of government authorities.

Peru is a prime example. It ranks fourth in the world for murders of environmental activists (after Brazil, Honduras, and the Philippines), with 57 activists in the country killed from 2002 to 2013, according to campaigners Global Witness. More than half of the country is still covered by rainforest, but those forests are being cut down at an accelerating rate to satisfy voracious international demand for timber and related products.

Sadly, this phenomenon is not confined to Peru. According to Global Witness, from 2002 to 2013, more than 900 people in 35 countries died defending the environment or fighting for the right to their land. The death toll has risen sharply in recent years. Worldwide, activists are murdered at an average rate of two per week. Given that such deaths tend to go unreported, the real number could be even higher. In only 10 cases have the perpetrators been brought to justice.

The deaths of environmental activists like Chota are not the result of obscure disputes in wild, faraway places. They are a direct consequence of the developed world's unrelenting demand for products like hardwood, palm oil, rubber, natural gas, and beef, and of poor regulation in the markets that supply them. Wood from a single tropical cedar tree can sell for $9,000 in the United States. A mahogany tree can fetch $11,000. These are amounts that some in rural, impoverished regions might kill for.

Peru has pledged to protect its forests, which cover some 60% of the country and are among the largest and best preserved in the world. Land-use and forest-related activities account for about half of the country's greenhouse-gas emissions, and earlier this year, just weeks after Chota's murder, Peru's government entered into an agreement with Norway, with the Norwegian authorities agreeing to pay up to $300m over the next six years if Peru curbs deforestation.

But lax laws, poor enforcement, endemic corruption, and weak land rights for Peru's 300,000 indigenous people threaten to thwart good intentions. Securing indigenous rights to land is one of the most effective ways to curb deforestation, but the Peruvian government is sitting on unprocessed claims to 20-million hectares. These communities need better support and protection, so that they can continue to keep their forests intact.

A naturalist and expedition guide stands on a pile of timber illegally logged from the Amazon rainforest in Peru. Photograph: Jason Edwards/Corbis.

Next month, Peru is hosting a major United Nations climate change conference in Lima, and efforts to protect the world's forests are expected to take center stage – even as those who are physically standing in the way of deforestation are being killed. The government should recognise environmental defenders' heightened vulnerability and uphold their rights to the land they are protecting.

That means scaling up efforts to combat illegal logging and pervasive corruption, improving forest governance (as the US-Peru free-trade agreement stipulates), and revoking recent laws that have weakened environmental protection. The alternative is clear: more death on Peru's environmental frontiers.

theguardian.com

Nigeria: Delta presents forest conservation strategies to qualify for REDD programme

The United Nations REDD+ programme is designed to reward countries for demonstrated efforts in forest conservation, that is, for reducing emissions from deforestation and forest degradation, plus for enhancing carbon stocks, sustainable forest management and the multiple benefits of forests. Cross River state is the first and only state that is participating in the programme, which has financial benefits, among others, for forest communities. Now, two other states are being sought from eight that applied to be included in the programme. Last week, Delta state presented two forest communities and projects for assessment by a team of REDD+ officials.

REDD+ is a gateway for green development and economies, allowing countries to access climate funds. A few countries are engaged in REDD+, and Nigeria joined them in 2010. Cross River is the pilot state and, now with additional funding, there is provision for two more states to join. Presently, scoping missions are on in some states; Taraba, Nassarawa, Kaduna, Delta, Ekiti, Ondo, Lagos, which have applied to be included in the in REDD+.

The assessment of the applicant state's presentation is done objectively, said the leader of the REDD+ team to Delta state, Mr. Moses Ama, who represented the National Coordinator, Mr. Salisu Dahiru. Ama said eight states have shown interest to come on board the REDD+ programme. "The pilot state was Cross River and during our international meetings we presented the size of Nigeria, asking for more states to be introduced into the programme. We were able to get approval for two additional states to be prepared for the REDD and carbon marketing programme." He said REDD is a programme that stands on the pillar of transparency, explaining that it is not what can be done and abandoned half-way.

According to him, "It is not what can be done in Abuja or Asaba because you must get to the community which will eventually accept or refuse it. The forest is not owned in the town but by the community. Even if you decided to coarse them, it will not be for too long before they begin to revolt. But if they give their prior informed consent then you are okay because they will do all that is needed as long as you are able to carry them along." He said the team always studies the communities' body language, saying this was very important to them to know that the communities would allow the forest to stand.

Ama said the national coordinator of the programme believes the whole country can be part of REDD+ but that this cannot happen at once hence the need to take it piece by piece. After a presentation of Delta state's readiness plan by the Permanent Secretary of the Ministry of Environment and Forestry, Mrs. Felicia Adun, the team visited forests in Uzere in Isoko local government area and Ibusa in Oshimili North local government area.

"We have come and seen and will go back to put our findings together. Our interactions with the communities have been fruitful. The body language that I saw was reflective of the fact that they are interested in the programme. Also, that there is smooth relationship between them and the government as well as with the Ministry of Environment and Forestry."

thisdaylive.com

Malaysia: Sarawak chief calls state's logging industry 'corrupt'

Speaking to a group of forestry company executives last week, Chief Minister Tan Sri Adenan Satem condemned business-as-usual practices in the logging sector and demanded that the state's six largest companies sign "integrity pledges", reports Malaysian state media. Adenan called out the companies — KTS, Rimbunan Hijau, Samling, Shin Yang, Ta Ann and WTK — and told executives "don't mess with me", according to The Star.

Reporter Yu Ji writes: He described the present state of corruption as "very bad, a reflection of what enforcement officers have not been doing". "Some, of course not all, pretend they don't know. The reason is very simple; either they are stupid, cowards or corrupt," Adenan said to a stunned audience, comprising state Cabinet members, civil servants and some of Sarawak's richest individuals.

Adenan said Sarawakians must not tolerate corruption anymore because millions had been lost revenue and the state gained a bad reputation internationally because of "this robbery which is carried out in broad daylight." The statement is significant given long-standing allegations of collusion between logging companies and Sarawak's highest-ranking officials. For example, civil society groups have accused former chief Minister Taib Mahmud of acquiring billions of dollars in assets during his 33-year-reign. Those assets are the product of corrupt practices, according to the groups.

Adenan's remarks were immediately welcomed by the Bruno Manser Fund, a group that campaigns on behalf of Sarawak's forests and indigenous people. "Today is a day of celebration for Sarawak and Malaysia", Lukas Straumann, Bruno Manser Fund's executive director, said in a statement. "These are the clearest words ever we have heard from a leading Malaysian government minister to combat corruption as a root cause of deforestation and under-development."

"We commend Chief Minister Adenan Satem for his courageous stance and important leadership in this question. The international community and civil society are ready to assist Sarawak in the badly-needed reforms not only of the forestry practices but also its governance and institutions in a wider sense."

86 percent of Sarawak's lowland forests were logged or cleared between 1973 and 2010, according to a study published in July. Only a quarter of the state's forests were "intact" as of 2010.

The situation is set to worsen due to plans to convert up to a million hectares of forest to oil palm plantations by 2020. Much of that is classified as native customary rights (NCR) land, meaning that it has traditionally been used by indigenous people. An added threat to Sarawak's forests and forest people comes in the form of a series of large-scale hydroelectric projects, that will flood rainforests, villages, and traditional hunting grounds.

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Brazil: Rising deforestation, fossil fuels use drive Brazil's emissions 8% higher

Brazil's carbon dioxide emissions jumped 7.8 percent in 2013 due to rising deforestation and fossil fuels use, according to data released by Observatório do Clima (Climate Observatory), an alliance of Brazilian and international non-profits.

The increase was the first since 2008. Deforestation and forest degradation emissions rose 16 percent, while energy emissions increased 7 percent.

Total emissions in 2013 amounted to 1.56 billion tons of CO2e, which is well off the all-time high of 2.86 billion tons reached in 2004, when Amazon deforestation last peaked at 27,772 square kilometers. Annual deforestation in the Amazon has since plunged dramatically, preventing some 3.2 billion tons in emissions that would have otherwise been expected.

Nonetheless the new data raises concerns that Brazil may fail to hit its ambitious target of cutting emissions 39 percent by 2020. Fossil fuels extraction is rapidly rising in Brazil, while deforestation has been climbing the past 15 months, according to data from Imazon, one of the Observatório do Clima members.

Land use change was the largest source of Brazil's emissions in 2013, accounting for 35 percent to total greenhouse gas emissions. Energy (30 percent), agricultural production (27 percent), industrial activities (5.5 percent), and waste (3.1 percent) made up the balance.

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