# CFA Newsletter

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# Study on Protected Areas in the Congo Basin shows they are failing both people and biodiversity

*Congo Basin forest (Getty Images/iStockphoto)*

A recent report published by the *Rainforest Foundation UK* presented a study of 34 protected areas (PAs) across Cameroon, Central African Republic, Democratic Republic of Congo, Gabon, and Republic of Congo, assessing their impacts on people and biodiversity. Four overarching questions were asked:

1. What impacts have strictly protected areas had over local and indigenous communities?
2. Have conservation initiatives complied with national and international human rights laws, safeguards and policies?
3. Have these areas succeeded in meeting their stated conservation objectives?
4. What part has community participation (or lack thereof) played in this?

**Key findings**

- **Despite enormous conservation investments, biodiversity is declining and poaching persists:** Hundreds of millions of US dollars have been allocated to conservation projects in the Congo Basin region in the past decade, yet there is little empirical evidence of tangible conservation achievements. Poaching persists widely and large mammal populations are declining at alarming rates. PAs are failing to reach their *own* conservation

objectives, raising questions to the sustainability of the current conservation model in the region.

- **Human rights disrespected in conservation initiatives:** There is an enormous gap between the human rights obligations, principles and commitments of national governments, donors and NGOs, and what is taking place on the ground. There is consistent neglect and in some cases outright violation of instruments offering local and indigenous communities rights to lands, livelihoods, participation and consultation.
- **Creation and management of PAs undermine customary land rights:** Local and indigenous communities have virtually no tenure security over their traditional lands in the region. Allocations for other uses – notably logging, mining and oil concessions, agro-industrial plantations, and PAs – are pushing local communities to ever smaller areas of land. PAs are being designated following mainly biological criteria, whilst resulting in partial or complete relocation or displacement of local communities.
- **PAs fail to compensate for the threats they pose to local livelihoods and wellbeing:** Without exception, all communities where field research took place associate PAs with increasing hardships. Diminished access to food (in severe cases even leading to malnutrition), as well as to forest products, are directly affecting the wellbeing of local people. In no cases has any compensation been given (or reported) for either displacements or loss of livelihoods.
- **Conflicts and human rights abuses around PAs are widespread:** Communities around several PAs throughout the region report abuse and other human rights violations, particularly at the hands of park rangers or 'eco-guards'. The abuses are generally associated with aggressive anti-poaching, whereby local communities are targeted for hunting.
- **Indigenous peoples suffer disproportionately:** Indigenous peoples appear to have suffered the most, probably due to their reliance on hunting and extent of their territories.
- **Participation and consultation with local communities almost non-existent:** In only about a third of the PAs analysed have local communities been consulted, and only a handful have involved them in management decisions, For the most part, the approach has predominantly been one of imposing strict top-down restrictions in terms of access to and use of forest resources, without integrating customary conservation practices or traditional knowledge.
- **Communities support conservation, but not the current model:** Local and indigenous communities in the Congo Basin have detailed ecological knowledge and traditional conservation practices, and strong links to the rainforest. But our case studies show that they do not agree with the conservation model that has been imposed on them. Huge potential for collaboration and mutual benefit is being wasted.
- **While local communities face severe restrictions on their livelihoods, extractive industries are tolerated:** Whilst conservationists have tended to perceive local populations as the greatest immediate threat to PAs, much more damaging large-scale extractive industries are widely tolerated by national governments. More than half of the PAs examined in this study have mining concessions, close to half have oil concessions, and one reserve has three logging concessions within its boundaries. The impacts that these extractive industries are having remains almost entirely unaddressed and understudied.
- **Lack of transparency and documentation:** While information on the overall amounts of funding that major donors channel into conservation efforts in the region is reasonably available, details on how this money is being spent are hard to find. This lack of transparency hampers accountability and impairs performance monitoring.
- **Some examples of better practice exist, but they are very limited and not systematic:** Isolated efforts have been carried out in a few PAs to involve local communities, but these cases appear to be mostly symbolic, and are not representative of the typical situation in the region.

**Conclusions**

The study concludes that conservation efforts in the Congo Basin are mostly failing to protect forests and biodiversity and are having serious negative impacts on local populations, and are therefore far from what could be considered just or sustainable. *Rainforest Foundation UK* believes that a fundamental shift is needed in the way in which conservation is conceived and practiced in the Congo Basin. Strong engagement with local peoples in securing their own capacity to conserve nature should be a priority. Local governance institutions should be recognized as crucial, and the multiple ties that connect such institutions (i.e. livelihoods, culture, spirituality, identity) to their environments should be nourished, not dismissed.

The full report provides detailed recommendations to major interest groups. It can be downloaded at http://www.mappingforrights.org/files/37804-RFUK-World-Park-Online%20%281%29.pdf

**Aili Pyhälä, Ana Osuna Orozco and Simon Counsell**
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# Association news

## CFA Regional Award of Excellence, South Asia and the Pacific

*Tony Bartlett presenting the Regional Award to Kanawi Pouru*

On 16 February 2016, the CFA presented a Regional Award of Excellence to one of the most eminent foresters in Papua New Guinea, Mr Kanawi Pouru. The award was presented to him by Mr Tony Bartlett, from the CFA Governing Council, at a ceremony held in Port Moresby in front of many of his colleagues from the PNG Forestry Sector. In presenting the award, Tony Bartlett indicated that Mr Pouru had made very substantial contributions over two decades to the leadership and administration of the PNG Forest Authority, often under challenging circumstances, but always displaying high levels of integrity and professional standards. He also indicated that over the years he had collaborated closely with forestry colleagues in various Pacific Island countries to foster greater sharing of experiences and the development of forestry approaches that are appropriate for the Pacfic.

Kanawi Pouru has played an exceptional role as a leader in the management of forests in Papua New Guinea and the Pacific Region. He has been a catalyst for cooperation and collaboration in many aspects of forest administration, and his success can be attributed to commitment, perseverance, and passion for sound Forestry and the Profession.

After graduating from the Papua New Guinea Forestry College he worked as a Harvesting and Marketing field officer and his career developed in through District, Regional and Provincial positions of responsibility.

*Kanawi Pouru planting a tree*

For a period he served as Regional Forestry Adviser for Pacific Island countries and territories with the Secretariat of the Pacific Community (SPC) based in Suva, Fiji. This role provided technical advice, support and assistance covering a wide range of challenges affecting the Forestry sector of the Region. He also worked on a World Bank-PNG Government Forestry & Conservation Project, and other Sustainable Development Programs in PNG.

In 2007 the Government of PNG appointed him as Managing Director of the Papua New Guinea Forest Authority, at a time when skilful leadership was required in order to set clear directions for Forest Policy and Administration. His integrity and strong professional endeavours since, have steered the path for PNG forestry from log exports to value adding, considerations of REDD+ and support for new community forestry approaches for the benefit of forest owners and the sector generally.

He has participated in many International study tours, conferences and workshops in the Pacific Islands Region, and in recognition of his work, he has received both the PNG Independence Anniversary Medal and the PNG Officer of Logohu medal.

The Commonwealth Forestry Association congratulates Kanawi Pouru on this award, in the knowledge that his work and career has made an outstanding contribution to this aspect of Forestry in the Region.

**Michael Bleby**
*CFA Regional Coordinator, SE Asia and the Pacific*

# CFA Lecture Series in India


*Professor Klaus Seeland delivering a lecture at the Indira Gandhi National Forest Academy auditorium*

Dr R.V. Singh, the CFA Regional Coordinator for South Asia, initiated a lecture series to at Dehra Dun to highlight the activities of the CFA in India. A number of forestry institutions, including, the Indian Council of Forestry Research and Education, Forest Research Institute, FRI University, Indira Gandhi National Forest Academy (IGNFA), Central Academy for State Forest Service (CASFS), Forest Survey of India and Wildlife Institute of India are located at Dehra Dun. Thus arranging lectures on relevant topics through CFA is expected to make forest officers and forestry scientists aware of CFA activities. Probationers of the Indian Forest Service undergoing training at IGNFA and those of State Forest Service at CASFS serve in different parts of the country and thus encouraging them to participate in such lectures is expected to popularise the CFA throughout the country.

Lectures under the CFA Lecture Series banner are delivered by eminent persons on topics considered relevant for forestry sector in India. These lectures are attended by scientists and forest officers serving in Dehra Dun based forestry institutions, Indian Forest Service Probations and State forest Service Probationers undergoing training and M.Sc. and Ph.D students of FRI University. In order to ensure that forest officers serving in different parts of the country may also benefit these lectures are sent for publication in the journal *Indian Forester* which is subscribed to by all the serving forest officers.

The following lectures have so far been delivered as part of the CFA Lecture Series:

1. **Biodiversity Conservation in India** by Dr. S. John Joseph, Former Principal Chief Conservator of Forests, T. N. and Former Chairman, TN Chapter of WWF.
2. **Agroforestry in India: Problems and Potential** by Mr.Piare Lal, Vice President, ITC Bhadrachalam Paper Mills, Andhra Pradesh.
3. **The Role of the Forest Sector in an Era of Global Change – A View on Some Priorities for the 21st Century** by. Mr. Peter Wood OBE, Former Vice President, CFA.
4. **Indian Forest Service: Challenges and Opportunities** by Dr. R. D. Jakati Director, Indira Gandhi National Forest Academy, Dehra Dun.
5. **Shaping a Sustainable Future: A view on Climate Change and Forests** by Dr. William Jackson, Deputy Director General, IUCN.
6. **Social Relationships towards Nature – Indian Forests as Amalgamations of Multifold National Interests** by Prof. Klaus Seeland at ETH Zurich.

**Dr R.V. Singh**
*CFA Regional Coordinator – South Asia*

# Forest Scenes

## Deforestation in Nigeria and the way forward: a case study of Sambisa Forest

Deforestation is a process where vegetation is cut down without any simultaneous replanting for economic or social reasons. Deforestation occurs around the world, though tropical rainforests are particularly targeted because it contains more trees. FAO (2015) observed that an estimated 18 million acres of forest are lost each year. Brazil, Indonesia, Thailand, Nigeria and other parts of Africa, and parts of Eastern Europe, according to United Nations Environment Program collaborating centre are the countries with significant deforestation currently or in the recent past.

According to Mongabay, Nigeria, located in the western region of Africa, has the largest deforestation rates in the world with the annual rate of 3.5%, approximately 350,000–400,000 hectares per year, losing 55.7% of their primary forests. Much

*Government forces could have a role in removing armed insurgents from forest areas*

of the allowance for deforestation in Nigeria comes from their demand for fuel wood and urbanisation. Akinbami (2003) reported that 90% of the Nigerian population relied on kerosene as the main energy source for cooking but because it is expensive and often unavailable, the majority, 60%, opt for fuelwood instead. The usage of fuelwood for cooking is higher in rural areas of the country where more of the population is concentrated. There are also incentives to people living in rural areas surrounding the forests because it is a source of income to many of them.

Another major cause of deforestation in Nigeria is the current security threat in the country, this is in reference to the activities of insurgents in Sambisa forest reserve. In general, forests anywhere in the world by their nature as areas of land with the collection of trees and other forms of vegetation can be security threats as thieves, criminals, armed groups, rebels, insurgents and terrorists can use them in carrying out their activities in one way or the other. This is because, as Mbaya *et al*., (2010) reported, forests provide cover which can be use by hideouts or for launching attacks in an ambush and also far away from the watchful eyes of the members of community.

In Nigeria, Sambisa forest has become the strongest base of Boko Haram insurgents since February 2013 (Kayode 2014). The forest is believed to be the main base of the insurgents as they have well fortified camps with their needs thereby depleting the forest reserve through improper wood harvesting to allow them carry out their basic activities easily. These activities include; food supplies, making of weapons, construction of shift camps and training grounds, creating routes for motor vehicles and motorcycles that they use to launch attack on settlements in the Northeast region of the country (Ladan *et al*. 2014). All of these are later abandoned, hence, leading to partial degradation of the forest. Also, the increasing trend in the population structure of the people has contributed significantly to its destruction. Deforestation has negative implications on the environment in terms of soil erosion, loss of biodiversity ecosystems, loss of wildlife and increased desertification among many other reasons. This is alarming and threatening the reserve, which gives all stakeholders serious concern and it has become imperative for research to be undertaken to find a remedy to this situation.

Considering the security threat posed by the forest and the effects of deforestation activities in Sambisa forest, this study recommends the way forward: The Nigerian security forces should launch an attack on all the forest/forest reserves to ensure that the insurgents, unknown gunmen and any other criminals are dislodged and their make-shift camps destroyed so that none of them ever returns to the forests. Once the forests and forest reserves are cleared completely of any criminal, the forests should be adequately protected through effective legislations, fencing and use of forest guards that are trained and adequately equipped to deal with any armed threat from any group. Once the reserve is cleared of insurgents, there is the urgent need to carry out reforestation of the degraded sections or parts of the forests and forest reserves throughout northeast Nigeria thereby creating ecologically stable resource use. The government should employ forest officers and forest guards should be employed and equipped with modern means of communications and weapons to maintain the reserves, stop encroachment and bush burning in and around the reserves. Local communities around forests and forest reserves should be integrated into the reforestation and conservation efforts so as to make them develop favorable attitudes towards the forest reserves. Also, unemployed youths around the forest reserve should be adequately empowered to curtail deforestation as fuel-wood for home consumption and sources of income. Furthermore, the government should set up air surveillance to periodically carry out surveillance of the reserves in order to enable the detection of criminal activities and encroachers in the forests, halting it on time. Moreover, military barracks should be established around the forest with proper patrols in the forest in order to evade the insurgents from the forest.

**Lawal Ibraheem** (PhD)
*CFA Governing Council*

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# Development of Environmental Product Declaration (EPD) for three tropical wood products

*Environmental Product Declaration evaluation of meranti*

The International Tropical Timber Organisation (ITTO) worked on the Environmental Product Declaration (EPD) of three tropical timber products: *meranti* plywood (Indonesia/Malaysia), *ipe* and *cumaru* decking (Brazil) and *khaya* sawntimber (Ghana). Many fundamental issues were uncovered in this work which presented an opportunity for ITTO and other organisations to support more work on EPDs.

EPD is defined in ISO 14025 as quantified environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function, typically in business-to-business communications. EPDs are gaining market momentum as a marketing tool that communicates the environmental performance of a product.

The significance of EPD to tropical timber products is the recent global movement towards "green building" which is essentially environmentally responsible construction. Without an EPD, it is difficult if not impossible to compete against similar products in the construction industry. In recent years this issue compounded as many countries (eg. UK, USA, Japan, Australia) adopted green building initiatives.

Tropical timber products are at a significant competitive disadvantage without transparent and complete EPD information. The defining of EPD ratings for tropical wood products will help ITTO producer countries meet the environmental, social and economic goals consistent with the ITTO's objective of enhancing international trade in legally harvested tropical timber from sustainably managed forests.

In November 2012, ITTO started work related to EPD and Life Cycle Analysis (LCA) for the above mentioned three tropical timber products. The selected products represent a range of products and specifications from three geographic regions. The work outlined a process for compiling EPDs through development of a Life Cycle Inventory database and comparative LCA reports for three products in line with ISO standards, including carbon footprint assessments based on PAS2030 specification. (Individual summary reports of the work done on each of the three timber products are published in the ITTO Tropical forest Update. Vol 24 Nov 3 2015).

It was thought this was the first serious attempt at EPDs for tropical timber products. And as such, the work was pioneering and challenging with methodological and fundamental issues. Following are some of the bigger lessons learnt:

1. There is a need to have more data collected to improve the validity of the studies' results on *meranti* plywood, *ipe* and *cumaru* decking, and *khaya* sawntimber.
2. The work carried out was all within a mill based on gate-to-gate. All raw materials were assumed to be within the mill entry gate. The potential elements to the EPD were captured up to the exit gate of the mill.
3. The nature of timber industry worldwide is that the logging sites are typically away from the mill sites. Transportation of input logs obviously contribute negatively to EPD ratings and can be substantial if the distance is very far (as exemplified in the Brazilian deckings).
4. Except for one study in Malaysia, there is no work done elsewhere on the LCA of acquisition of raw material (ie. Logging and transportation of logs to the mills).

The way forward in general is to promote more EPD work amongst ITTO members. Product Category Rules (PCRs) need to be defined and clarified for tropical timber products globally. ITTO can be a neutral and credible depositary of EPD information for tropical timber products internationally and should adopt this important role.

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# Not just the tree frogs

I'm Kitty and I work for the charity Cool Earth. Cool Earth is a small charity with a big aim – to halt rainforest destruction. It does this by partnering with indigenous rainforest villages.

As Projects Manager, my job is all about these village partnerships. Whether it's managing our projects or developing new ones, all of it comes down to ensuring our community partners are calling the shots when it comes to their rainforest. I've been at Cool Earth for four years, after applying for an internship as a fresh-faced graduate. What really caught me was Cool Earth's focus on people. Real people, real lives, real homes.

I'm not an ardent green. I don't weep at the fate of the world's tree frogs. And if I'm brutally honest, I find orangutans positively terrifying. This puts me in a very different camp to most of the conservation world. But then again, so is Cool Earth.

*Kitty with a villager in the Cool Earth Ashaninka Partnership project in Peru*

Years of geography at school and a childhood spent watching rainforest documentaries and not once were the world's 50 million rainforest people mentioned. Not once.

Rainforests are not vast empty Edens. They are home to thousands of families that depend upon the forest for everything: food, water, shelter, medicine – their very identity. My friend Macario puts it far more eloquently when he says *"The forest is life for us."* And yet the traditional conservation movement has fenced off rainforest, hoping no people means no destruction. And of course, it hasn't worked.

We've lost half of the world's rainforest. I find this truly astonishing.

We're all familiar with the rhetoric. Rainforests contain most of the world's species, and generate vast amounts of oxygen and fresh water. Plus there's the carbon: rainforests are the world's single biggest "carbon sink", holding as much as fifty percent of the earth's carbon. One single acre of rainforest stores the equivalent $CO_2$ of driving around the world 32 times. And yet, despite these impressive credentials, the rainforests continue to be destroyed. Talk about cutting off the branch you're sitting on.

Cool Earth doesn't go for the doom and gloom predictions that swamp the conservation world. Instead, we focus on putting in place the simple steps that are needed for a village to keep their trees safe. Each project is community-led and owned with villages deciding how funds are spent and driving the process. There are no hoops for them to jump through and no threat to their control. This is what I am most proud of about Cool Earth's model.

When I started here four years ago, our aim was to protect 4,000 acres in five years. We've just celebrated the protection of our 500,000$^{th}$ acre. From Peru to Papua New Guinea – this is what happens when you empower villages to keep their trees safe. This isn't to say that it's all happy camping. Rainforest communities remain some of the world's most vulnerable and marginalised people.

In our Ashaninka Partnership in Peru, a third of all families have lost a child and childbirth is the biggest killer of women and malaria ravages the villages. Losing local partners from preventable conditions is by far the hardest thing to deal with about this job. It is a huge injustice for these incredible people, who spend their lives defending their forest, to die from something that you and I would never have a second thought about.

But this only serves to make me, the rest of the Cool Earth team and our local partners more determined to ensure rainforest protection goes hand in hand with better lives. This year we're working with the Ashaninka to improve access to healthcare – from basic medical training to equipping medical outposts with clean water. Simple steps that really make a lifesaving difference.

Cool Earth believes that local people are the only thing that will keep rainforest standing. They have the most to lose from its destruction, but the most to gain from its protection. I am so proud to be a part of ensuring conservation is all about the local people – not just the tree frogs.

**Kitty Jenkin**
Cool Earth – www.coolearth.com
*(Cool Earth is a partner with the CFA in the Queen's Commonwealth Canopy – queenscommonwealthcanopy.org)*

# Paris Agreement signed. Now what?

A record number of more than 170 nations attended the signing ceremony of the Paris Climate Agreement (PA) at the United Nations headquarters in New York on April 22. The event was a significant one, because despite the fact that countries adopted the text of the Paris Agreement during the COP21 back in December 2015, the Agreement is not yet fully implemented. The PA was a necessary step forward because a country's signature on the agreement initiates the critical domestic process, on which depends its final entry into force.

Countries present at the signing ceremony included major carbon emitters like the U.S., China and India, as well as many tropical forest countries including Indonesia, Papua New Guinea, the Democratic Republic of Congo (DRC) and Brazil.

In order for the Agreement to enter into full force, formal and legal ratification by at least 55 nations comprising 55 percent of man-made greenhouse gas emissions is necessary. One possible feasible scenario, for example, would involve the combined support of China, the U.S., Canada, Russia, India, Indonesia and Brazil (who cumulatively account for more than 55 percent of emissions today).

Signing the Agreement however, should not be confused with the legal requirement of ratification. In many countries, ratification will require domestic political processes within parliaments to occur. In some circumstances, this could take years.

**Walking the talk**

Yet positive prospects have emerged that the deal could become operational prior to the target year of 2020. This stems partially from apparent moves afoot in the U.S. to ratify the Agreement prior to the end of the Obama administration out of concerns that a new Republican administration would be unlikely to push it through. It is important to note that while the U.S. signed the Kyoto Protocol (KP), it was never ratified afterwards.

However, a much slower process is expected within the European Union (EU), which faces serious challenges in terms of ratifying the Agreement early. All EU member states need to go through separate domestic ratification procedures, as well as the allocations of emissions reduction shares. The amount of time that this will take is unknown – possibly up to two years – and raises concerns that the PA will come into force prior to the ratification of the EU. This would leave the EU in the difficult position of only having limited participation entitlements.

Meanwhile, signals from more vulnerable countries have been positive. Several among them have already ratified the PA, with leadership taken by Fiji, the Marshall Islands, Palau and the Maldives. These ratifications have occurred despite controversial calls by some members of civil society for vulnerable countries to hold off on ratification as a means of creating more leverage within ongoing climate negotiations, in particular those related to finance.

While high-level politics played out at the signature ceremony, the climate negotiations themselves continue on. The parties will meet this May in Bonn, Germany, to commence a series of new work programs, complete ongoing work and move towards implementation of the PA.

The pressure to achieve a new climate treaty is now off, and important new and old topics concerning land use and forests are taking center stage. The core message now is implementation.

**Round 1: Post-Paris negotiations**

The first session of the Ad Hoc Working Group on the Paris Agreement (APA 1) will take place from 16–26 May in Bonn, Germany alongside the usual mid-year session of the Subsidiary Bodies to the UNFCCC. Here's a list of important considerations to ensure that this seminal event advances the ambitions and scope of the crucial climate agreement.

1. ***The role of land and forests in achieving the target of below 2 or 1.5 degrees:***

As a result of the PA mitigation goal, negative emissions and land-based sinks are more prominent than ever. This highlights the importance of conserving and enhancing natural forests and other ecosystems, as well as halting deforestation and reducing degradation. More science is needed on the topic, but concerns are being raised concerning land availability, impact on food security and the over-reliance on non-existent negative emissions technologies. How the UNFCCC will address this topic in its efforts to achieve the new long-term goal remains the most significant unknown.

2. ***From INDCs to NDCs:***

One of the most important elements of the process towards implementation of the PA will be the transition from INDCs to NDCs. Around 100 countries have included LULUCF in their INDC and some 40 countries include REDD+. The PA has laid out a process related to INDC 'Information' and 'Features', as the current INDCs are not comparable and thus difficult to measure.

Some guidance has already been provided, but it will be necessary to continue identifying gaps, analyze the content of the INDCs and fill visible gaps. Another important space to watch in terms of consistency of information will be between the INDCs / NDCs and the 'Country Program' being developed to enable countries to access the Green Climate Fund (GCF).

3. ***The Global Stocktake and the 2018 Facilitative Dialogue:***

The Facilitative Dialogue in 2018 is attracting a lot of attention, with high expectations that it will provide a form of review. However, what this all means is rather unclear. The current ambition of the INDCs is widely recognized as too low.

Many hope that the 2018 event will present an occasion where countries can increase their ambition. It is expected that land and forests will be among the topics to be discussed at the Dialogue. Should this be the case, the recent decision at the IPCC for the production of a Special Report concerning the 1.5 degree goal, as well as on land use and food security, will no doubt play an important role in this discussion.

4. ***Land use accounting and transparency:***

The Paris Agreement puts in place a work program that will occur under the Ad Hoc Working Group under the Paris Agreement (APA) to establish a 'common system' of transparency of action and support by 2018, which will include land-use accounting and reporting resulting in a new MRV system.

For many years, criticisms have been raised around the KP LULUCF accounting rules on the basis that they enable developed countries to selectively choose (or hide) their emissions. A comprehensive, land based, all-inclusive approach to accounting is preferred by many. How such an approach can interact with the current rules concerning REDD+ will need to be addressed.

5. ***Human rights and climate change:***

One of the major outcomes of the PA was the inclusion of human rights in its Preamble. Some expect there to be moves made in Bonn by certain countries for the development of a work program related to human rights and climate change.

When the topic is considered together with concerns related to the 'net zero' long-term goal, we can expect important issues concerning land use, migration, rights of indigenous peoples and local communities and food security to form a part of this work. This would open up important new areas of discussion within the UNFCCC that have not been adequately addressed before.

6. ***Operationalizing indigenous knowledge:***

Another possible new work program that is being called for is operationalizing the adaptation Article provisions concerning 'indigenous knowledge'. This topic is crucial to forests and the implementation of REDD+, as well as other mitigation and adaptation actions.

Such a work program would have particular relevance to the work being undertaken at the GCF concerning its REDD+ results-based payments framework, as well the ongoing agriculture work program in the SBSTA that will address adaptation measures and indigenous knowledge systems.

7. ***The Clean Development Mechanism and the Sustainable Development Mechanism and Markets:***

Additional land use activities and the Clean Development Mechanism (CDM) remains on the agenda with a special LULUCF workshop to be organized on the subject in May. It will be equally important to watch the development of these negotiations in the context of the new Sustainable Development Mechanism (SDM) established by the PA. It is expected that the

SDM will replace the CDM, with a wider scope on issues like adaptation mitigation synergies and land use.

Questions as to whether REDD+ will form a part of the SDM and what rules and safeguards will be applied remain. An important discussion will be the way in which the 'ecosystems integrity' provisions in the new Agreement are developed as distinct from 'environmental integrity'. One can also expect the controversial topic of REDD+ offsets to emerge, likely in the context of the recent negotiations within the aviation industry, which will need to avoid undermining the target of 1.5 degrees and phasing out fossil fuels.

8. ***Synergies between mitigation and adaptation***:
Mitigation and adaptation linkages and synergies are included throughout the PA. The most obvious reference is Article 5. The other notable references are contained in the final REDD+ Decisions. Resilience is linked to low emissions development throughout the text and the Preamble seeks to establish that mitigation actions should not compromise rights or undermine ecosystems integrity. The adaptation and mitigation long-term goals (Articles 4 and 7) could be interpreted in a way that ensures actions to achieve one do not undermine the other.

Article 4.7 provides that 'mitigation co-benefits resulting from Parties' adaptation actions can contribute to mitigation outcomes'. Linkages and synergies between adaptation and mitigation are also well established in the GCF. The PA and the GCF have now opened the policy space within the UNFCCC processes for new work on the subject, possibly through the non-markets work program.

9. ***Pre-2020 efforts***:
The technical examination and technical expert processes intended to close the gaps will be ongoing and will continue to focus on thematic areas, including land use. What is achieved pre-2020 will be critical in terms of whether the goal of below 2 or 1.5 degrees can be achieved.

There are a myriad of useful 2020 targets, as well as corporate supply chain zero deforestation commitments to draw from. Other related processes include the Aichi targets under the Convention on Biological Diversity, the Sustainable Development Goals that seek to halt deforestation by 2020, and the Bonn Challenge that seeks to restore 150 million hectares of deforested and degraded lands by 2020.

At COP21 in Paris, it was agreed to strengthen the pre-2020 action in the UNFCCC through such measures such as broader engagement with non-state actors, which includes the private sector and enhanced technological exchanges through mechanisms like the Climate Technology Center Network (CTCN).

10. ***Finance for forests and the Green Climate Fund***:
Mobilising finance for REDD+ implementation has gained traction over recent years as the Framework has edged closer to completion. COP21 confirmed that the GCF would play a central role in the implementation of the Agreement and the Standing Committee on Finance provided direction to the GCF to do more on this topic.

At its 12th Board Meeting in Incheon, South Korea in March, the GCF agreed that it would operationalize its results-based payments system later this year, as well as put in place measures concerning JMA and enhance private sector engagement. The GCF is currently undertaking informal stakeholder consultations on these topics in an effort to develop the appropriate policy frameworks and guidelines. The next phase is expected to occur in Bonn this May.

The political signals provided recently in New York are useful, however, the devil will, as always, be in the details. We can expect a similar situation to the KP and the development of what became the Marrakesh Accords.

Since the climate agreement was reached in Paris at COP21, the impact has been profound. The discourse has shifted towards implementation, and we have moved into a practical discussion addressing responses to how, as opposed to simply what or why.

We now have an understanding of the policy framework in which we must work. We can clearly identify the research needed and should ensure we have a targeted evidence base to support the new policy work required at both the international and the national level.

The upcoming meeting in Bonn this May will be extremely important as it will establish the work programs and define the topics and the mechanics required to implement what is widely considered as 'the agreement that was the best we could get, yet still not good enough'.

The good news is the opportunity to transform the PA into something 'good enough' exists.

**Stephen Leonard**
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*For more information on this topic contact Stephen Leonard at s.leonard@cgiar.org.*
*This research forms part of the CGIAR Research Program on Forests, Trees and Agroforestry.*

# Tanzanian NGO changes lives with outstanding approach to sustainable forestry

Jasper Makala, Director of the Mpingo Conservation & Development Initiative (MCDI) in southern Tanzania, has been shortlisted for a prestigious Whitley Award for his work to bring rural communities together to manage their forests sustainably.

Soil Association Certification's forestry team has worked with Jasper Makala and MCDI since 2007. By certifying schemes like the MCDI's Participatory Forest Management scheme, Soil Association Certification has been pushing the agenda to provide more opportunities for smaller communities to take the reins on managing their own forests.

The Whitley Awards were presented on 27 April 2016 at the Royal Geographical Society in London. The awards offer ongoing support to outstanding nature conservationists in the

*Participatory forest management scheme by the Mpingo Conservation & Development Initiative in Tanzania*

developing world. Jasper Makala is one of seven finalists for the award, which will be presented by HRH The Princess Royal.

Deforestation has seen millions of hectares of Tanzania's virgin forests disappear over the past thirty years, largely due to illegal 'slash and burn' logging practices, which have become commonplace across the country. Valuable hardwood timber, such as the precious mpingo tree, is especially sought after for its use in musical instruments like clarinets, oboes and bagpipes.

The MCDI's work is centered in the Kilwa district of the Lindi region, which is home to some of the last remaining stocks of mpingo hardwoods. Through their Participatory Forest Management scheme, the MCDI puts control of local forests back in the hands of rural communities, who are given full legal ownership of Village Land Forests Reserves.

To combat illegal logging, sustainable forestry is enshrined in Tanzanian law. Communities can reclaim full ownership of their traditional community land, if they can prove that they will maintain and manage the land sustainably. However, due to costs and lack of technical capacity, this is an unattainable dream for many communities.

This is where MCDI comes in. The initiative facilitates community ownership by supervising management of a number of community forests, and assisting in the legal process involved in securing and transferring full ownership of the land back to the community. Certified to FSC standards by Soil Association Certification, it is the first initiative in Africa that operates in this way, putting ownership of 140,000 hectares of forest back in the hands of the Kilwa, Tunduru and Rufiji district's communities.

MCDI's role has been revolutionary for the thousands of people involved. Each community forest is managed by a committee of up to 50 villagers, which employs members of their own community to become trained and skilled timber workers and providing employment opportunities for locals. The committee decides which projects to take on, how to manage them, and what to do with the profits from the timber sold, which go into a common pot. This approach has seen one village using their shared income to build a clinic for a doctor in order to have direct and immediate access to medical care. Other villages have used funds to build schools to provide education to children, or extend their education. Above all, the MCDI's work has given communities a great deal of knowledge about sustainable forestry and left them with a strong sense of pride for the forests and drive to protect them.

Kevin Jones, Head of Forestry at Soil Association Certification, said: *"Jasper Makala and the MCDI have accomplished a remarkable task of growing the sustainable forestry industry while putting control of common resources back in the hands of communities. The dedication and knowledge of the people involved is incredible, and we in the UK could take a lesson from the teamwork required to decide how to protect our natural resources. This is exactly the sort of thing we want to see more of in the future in our work with the Forest Stewardship Council."*

Soil Association Certification is committed to developing access to FSC certification for smallholders and community forests and has worked closely with the FSC Regional Offices in Africa over the past few years to achieve this objective.

**Hayley Coristine**
*The Soil Association*
*soilassociation.org*

# Researchers find dissimilar forests are vital for delivery of ecosystem services

*Pine monoculture from the Alto Tajo National Park site*

A team of ecologists from Royal Holloway, University of London has taken part in a large collaborative EU project to find out what the effects of forest tree species diversity are on ecosystem services. These services, which include timber production, carbon storage, and forest resistance to pests and diseases, are crucial to human well-being.

One of the key novel findings of the project published in the journal *Proceedings of the National Academy of Sciences* of the USA, is the consistently negative impact a similarity in tree species composition across the landscape (biotic homogenization) has on the ability of forests to deliver multiple ecosystem services.

Forests are becoming dominated by a small number of tree species as a result of species extinctions, tree species selection by forest managers, and invasions or planting of exotic species. This process of biotic homogenization is similar to cultural globalization with the global consumer market becoming dominated by the small number of chains (the so-called McDonald's Effect).

Researchers from Royal Holloway's School of Biological Sciences worked collaboratively with 29 other institutions and combined field data from 209 forest plots across six European countries (Germany, Finland, Poland, Romania, Italy and Spain) with computer simulations to study the consequences of both local tree species loss and biotic homogenization on 16 ecosystem functions, including timber production, carbon storage, bird diversity, forest regeneration and resistance to insect and mammalian pests.

The researchers found that while the effects of local tree species loss were highly variable, the effects of biotic homogenization were almost always detrimental for provisioning of multiple ecosystem services. This means that landscapes containing more dissimilar forests provide more ecosystem services than landscapes where all forest patches were dominated by the same tree species. This is because different tree species are needed to provide different services; for example, in Poland, the Norway spruce provides high quality timber whereas hornbeam forests are better at supporting the diversity of attractive plant species in the understorey that may appeal to tourists.

While many studies have investigated the consequences of species loss for human well-being, this is the first study to show the consequences of biotic homogenization for forest ecosystem services.

Professor Julia Koricheva from the School of Biological Sciences at Royal Holloway, whose team contributed measurements of forest resistance to mammalian herbivores, said: "This study shows how important it is to maintain biodiversity in forests not only at the local scale but also at the landscape level".

The findings have implications for forest management and suggest that stopping and reversing the McDonald's Effect in forestry, by planting forests containing a range of dominant species, will encourage the maintenance of ecosystem processes and services that human well-being depends on.

**Royal Holloway, University of London**
*www.royalholloway.ac.uk*

# The Marcus Wallenberg Prize 2016 MWP

**CT scanning of timber to increase the product value**

CT scanning of whole tree logs to identify knots, cracks and rot can increase the value of the sawn products by at least 10 percent. The 2016 Marcus Wallenberg Prize is awarded to Alexander Katsevich and Federico Giudiceandrea for the development of this technology.

Computed tomography, CT, is nowadays invaluable to diagnostic imaging in medicine. The method has also been introduced to many areas of industry. CT is a proven research tool to detect undesired board features in wood. When medical scanners were used in a research project in a sawmill, the output value of the sawn timber products increased dramatically. Industrial realization was however hampered by the slow speed of the process.

**Quicker and safer images**

A high speed X-ray based online scanning machine was built due to the findings of professor Alexander Katsevich, University of Central Florida, USA, and Federico Giudiceandrea, CEO at Microtec, Brixen, Italy. They are awarded the 2016 Marcus Wallenberg Prize of SEK 2 million for the discovery. The non-destructive scanning of round wood has made online optimization of log usage in the sawmilling process possible. Knots, resin pockets, tree rings, cracks and rot can be identified before the timber is sawn. The wood density can also be determined.

The introduction of this new technology marks the beginning of a new era for the sawmill industry. The groundbreaking research and innovative implementation have opened new horizons, facilitating further optimization of the sawing process, says Marcus Wallenberg, chairman of the board of the Marcus Wallenberg Prize.

Computed tomography, CT, is an imaging technology that produces three-dimensional, 3D, representations of objects, based on multiple scans of the object from different directions with penetrating X-ray radiation.

In most modern industrial and medical CT scanners the X-ray is emitted from the source in a cone-beam geometry, and the images will be reconstructed when the object is moved through the beam. Either the object or the detector is turning in spirals through the process.

The algorithms, or data calculations, to obtain the 3D-pictures are approximate in their nature but reliable for small cone angles. Wider cone angles result however in blurring images.

The breakthrough by Alexander Katsevich was to find an exact analytical reconstruction algorithm, which is known today as Katsevich's Algorithm. The algorithm was subsequently further refined not only to solve the cone-beam problem but also to be better suited for situations where fast movement is necessary.

**Payback time in a year**

Federico Giudiceandrea implemented the theoretical findings of Alexander Katsevich with the applications of CT scanning and was ultimately successful in building a prototype, which no one thought would be possible. It has been further developed and marketed worldwide. Wood industries in the US, Chile, Germany and France have invested in CT scanners to make the most of the round wood resource.

The log scanner has an outstanding capacity compared to other CT-scanners. It has a band speed of 120 meters per minute, to keep pace with modern sawing lines. The best medical scanner has a band speed of approx. 3 meters per minute.

In modern sawmills where 3D scanning of the log is used, an approximate of 10 to 15 percent increase in value of the output can be derived. A potential increase of 20 to 25 percent is possible if all the advantages of having access to the internal features of the timber are realized.

An investment in this kind of equipment is likely to have a payback time of not much more than a year for an average-sized sawmill.

The laureates Alexander Katsevich and Federico Giudiceandrea will receive the award from the hand of His Majesty the King of Sweden at a ceremony in Stockholm this October.

**The Laureates**

***Federico Giudiceandrea***

Federico Giudiceandrea was born in 1955. He graduated in electronics from the University of Padua, Italy, in 1980. His academic background is in bi-dimensional signal filtering. This brought him in contact with the field of artificial vision. The year he graduated he also founded the company Microtec with two associates – one an expert in optics, the other an expert in business.

In 1995 the company had developed an X-ray scanner for sawn timber. The company's first X-ray scanner for roundwood came in 2007, and in 2014 came the first multi-scanner for quality assessment of fruit. Dr. Giudiceandrea is the CEO of Microtec. He has received many awards, among others the Schweighofer Prize in 2013.

***Alexander Katsevich***

Alexander Katsevich was born in 1967. He graduated in applied mathematics at Moscow Institute of Oil and Gas in 1988 and got his Ph.D. in mathematics at Kansas State University in 1994. He worked as a research assistant at the Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation of the USSR between 1988 and 1990.

Between 1996 and 2002 he was a Postdoc Fellow at Los Alamos National laboratory. From 1996 to 2008 he was an assistant and then associate professor at the Mathematics Department of University of Central Florida and has since 2008 been a full professor there. His research deals with tomography, Radon transforms, medical imaging, microlocal analysis. He has received several awards, among others the Best paper in Tomography Award at the IXth International Conference on Fully 3D Image in Lindau, Germany, in July 2007.

**The Marcus Wallenberg Prize**

The purpose of the Marcus Wallenberg Prize is to recognize, encourage and stimulate path breaking scientific achievements, which contribute significantly to broadening knowledge and to technical development within the fields of importance to forestry and forest industries.

***Further information***

For further information please contact professor Kaj Rosén, Executive Secretary of the Marcus Wallenberg Foundation,
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Tel +46 (0) 70 6697088
The official citation and prize motivation is published on www.mwp.org

# Bible trees in Israel

*Ancient olives in the Garden of Gethsemane*

Although a tiny country Israel has a reputation for tree planting, notably with pines and eucalypts, and also for expanding its horticulture with orchards and groves of almonds, olives, citrus, apricots and pomegranates. Around sub-tropical Galilee there are even plantations of avocados and bananas and in the desert around Jericho date palms aplenty. But the old Palestine had been in a sorry state. Mark Twain famously lambasted the 'Holy Land' he visited in the 1860s as desolate, denuded and depressing. Further depredations by the waning Ottoman Empire destroyed much of what scraps of forest remained largely to fuel the railways.

This change – the greening of Israel – was brought home to me in March this year. Past visits had been in the dry, hot and dusty early autumn, but in mid March the western sloping hillsides were verdant with crops of barley and wheat, flowers were commonplace, and splashes of brilliant pink were everywhere. I was asked what the latter were just 20 minutes into our coach journey from Tel Aviv airport to the hotel in Jerusalem! It was the Judas trees (*Cercis siliquastrum*) in full blossom. I was helping lead a group to Israel to visit the great biblical sites in Jerusalem and Galilee with an added interest of focusing on trees and shrubs mentioned in the Bible. This arose because of my book, *God's Trees – Trees, Forests and Wood in the Bible* published by DayOne, Leominster.

Israel's tree and shrub planting has not been confined to commercial crops: there has been a re-awakening of interest in the ecology and plants of the promised land 'flowing with milk and honey'. Incidentally the 'honey' probably refers to a sweet sticky 'fluid' from dates rather than from bees, though doubtless the latter were enjoyed too as Samson's famous riddle about honey from the lion's carcass makes clear (Jdg. 14: 12–20). The spies sent out by Moses brought back seven fruits (Deut: 8:8), the fruits of promise, wheat, barley, vines, figs, pomegranates, olive oil and honey. We mention three in this brief note.

There are several biblical gardens and bible-related collections in Israel. A small one in the grounds of St George's Cathedral, Jerusalem was laid out by the late Nigel Hepper, former deputy curator at Kew, and a recently created 'Bible path' in Jerusalem Botanic Garden shows not only many of the plants, shrubs and trees, but has helpful interpretive signage in Hebrew, Arabic and English. In Nazareth there is a first century farm established on an actual first century site and now worked with tools and farming methods from the time of Christ. But most impressive of all, however, is the Neot Kedumim Reserve near Lod where hundreds of hectares have been set aside to show every biblical plant and to demonstrate Old Testament practices from water cisterns to olive presses.

Another joy to the visitor is the impressive network of national parks and nature reserves throughout the country cared for by Israel Nature and National Parks Protection Authority. Many are small, just a few hectares, but, as well as archaeological sites, between them they preserve lush vegetation of Syrian ash, laurel, Atlantic terebinth and Kermes and Tabor oaks on the slopes of Mt Hermon, such as at the Dan Reserve, to semi-desert vegetation of acacias, cordia, Christ-thorn, moringa, and tamarisk in Ein Gedi not so many miles from the famous site of Qumran of Dead Sea Scrolls fame.

*Fine date palm in the grounds of the church of St Anne near the Lion Gate in old Jerusalem.*

One can't spend long in the Mediterranean without seeing olive groves. Many are very old and yet thrive. The ones in the Garden of Gethsemane are around 1000 years old and my even be from stock from those among which Jesus prayed so earnestly; the location on the west side and near the foot of the

Mount of Olives is spot on. Olives, and fruit trees generally, are singled out for special protection in the Old Testament, no doubt for the countless products their fruit and foliage furnish, which underscore the regulations today forbidding the cutting of olive groves.

Another common tree, famously mentioned by Luke in his gospel in the context of the diminutive tax collector, Zaccheus, wanting to see Jesus is the sycomore-fig. Often mis-translated as sycamore, the sycomore-fig is a large tree of the Ficus genus (i.e. nothing to do with maples – Acer) occurring throughout subtropical Africa and the Middle East. In Jericho today you are shown a large tree, much the size of a London plane, which Zaccheus supposedly climbed. It is old but not that old, but the species grows well in and around Jericho, makes a good street tree and Luke's identification of the actual kind of tree climbed tallies perfectly with what we know.

And it is near Jericho, in the Jordan Valley, that we see the great and ever expanding plantations of date palm. Joshua led the Israelites after Moses died and Jericho is the first town they encountered in the 'promised land'. More than 3000 years ago it was known as the 'city of palms', and it still is. Date palms are common in Jerusalem, too, but are more ornamental than fruit producing as the cooler more Mediterranean climate doesn't lead to very sweet dates. There would have been plenty of palm branches to use on the Sunday before Jesus' crucifixion as he rode into Jerusalem down the steep winding road beside the side of the Mount of Olives.

There are many other Biblical trees and shrubs to interest the forester, but for me the abiding impression is that when we can accurately identify the species scripture refers to, the story or passage where they are mentioned accurately chime with their ecology and context. A simple one to conclude with is that King Solomon had to import logs of cedar of Lebanon to build the great temple: no surprise, cedar was never native to Israel.

**Julian Evans**
*Vice-President, CFA*

**REFERENCE**

EVANS, J. 2014. *God's Trees – trees, forests and wood in the Bible.* DayOne, Leominster, UK.

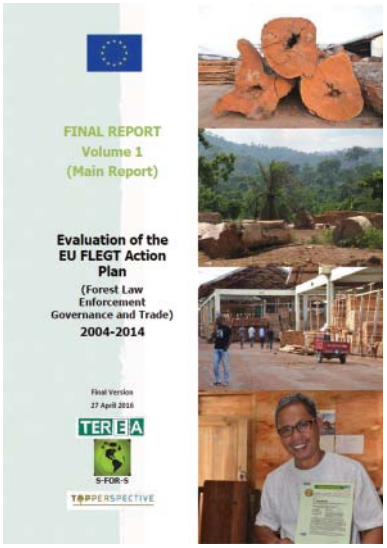
# Publications

## Evaluation of the EU FLEGT Action Plan 2004–2014

**European Union**

An independent evaluation report confirms that the EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan is a relevant and innovative response to the challenge of illegal logging and that the Action Plan has improved forest governance in all target countries.

The report concludes that the EU FLEGT Action Plan has been effective in terms of raising awareness of the problem of illegal logging, contributing to improved forest governance globally and particularly in partner producer countries, and has helped reduce demand for illegal timber in the EU. Read more on the European Commission's site and in a blog post by the European Commissioner for International Cooperation and Development, Neven Mimica.

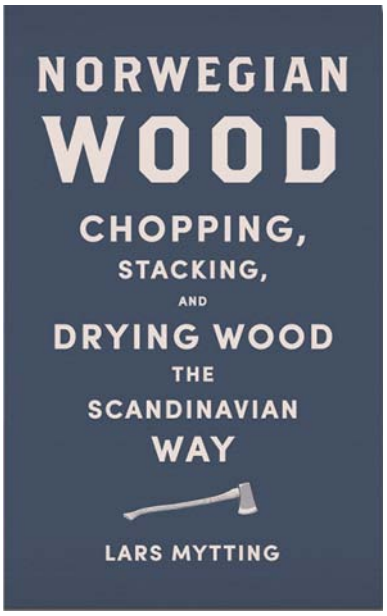



The report's findings and recommendations will guide the European Commission (EC) in improving the efficiency, effectiveness and value-for-money of work undertaken to further implement the EU FLEGT Action Plan. The report will also guide the EC in assessing policies to address the broader drivers of deforestation, and in linking action under FLEGT to the international climate change and Sustainable Development Goals agendas.

Download the report at www.flegt.org/evaluation

# Norwegian Wood: chopping, stacking, and drying wood the Scandinavian way

**Lars Mytting. MacLehose Press, London. 192 pages. £20**




"What's this one about?" I asked our local bookseller, indicating a copy of the book which is the subject of this review. "I'm not absolutely sure", she replied, "but I do know that as fast as I display them they fly off the shelves". I bought a copy and got so much pleasure from it that I decided to write this review to bring it to a wider audience of my English-speaking colleagues.

This book was written by a prize-winning, Norwegian novelist, whose works have been translated into several languages. But it was this one, which distils the experience of many others, not only flew off the shelves in the UK but also in Norway, Sweden and Denmark as well, which "made him a household name in Scandinavia" (I quote the book's cover).

I must confess, however, to a degree of scepticism on buying it; it couldn't surely be that good? Could it possibly be of interest to a professional forester? What relevance has firewood to a chap with gas-fired central heating? Yes, it is that good – at least, I found it totally absorbing bedside reading, and yes, it was of great interest to a professional forester, who has gas-fired central heating! Read on, and I'll try to explain why.

First of all, it is full of fascinating facts. Did you know that: In oil-rich Norway, as much as 25% of domestic energy for heating comes from wood? Or that consumption of firewood today is ten times that of 1976 in both Norway and Denmark? No wonder that the motto of those Norwegians in favour of "intelligent wood burning" seems to be: at last something we need that actually grows on trees!

And it is full of information that was new to me. For example:

- According to the author, Birch (*Betula* but he does not state which species) is the best firewood,. To me, a fast-growing hardwood species is going to be quite wet, but his view is supported by so many others that I must accept his opinion.
- Kindling – the best species are spruce (*Picea*) and aspen (*Populus tremula*).
  - Green pine *(Pinus sylvestris*) is almost impossible to burn, but if it is dry it gives a lot of light.
  - there is no need to split logs from the end, one may lay the wood flat, which can be done on a piece twice the usual length, thus reducing cross-cutting effort.
  - According to an old saying, wood will dry well if there is enough space in the tunnels between the drying logs for a mouse to run through!

There are excellent pictures of log piles, especially one of a round stack 2 m high, built by nuns using ladders! I had not appreciated the importance of good, well-bound stacking of the pile, otherwise it collapses as it dries. The topics covered by the book range from the calorific values of different species to the crucial importance of drying wood before burning. But the latter should develop the why, not just the what. Birch is presently the most popular species for firewood but until the 1950s conifers were as popular as hardwoods.

The book is very well illustrated with excellent colour photographs. However, the author is far from consistent: he uses Imperial measure, not metric, although the metric equivalent is nearly, but not always, given. Occasionally, the statement is only in metric, with no Imperial equivalent (see e.g p. 125–6 discussing the measure of the cord), and liters (*sic*) are quoted on p. 103. He does not use botanical names at all and some terms are not explained – what is alkylate fuel (P. 72) for example, nor does he explain why elm does not split easily? He also states that birch plywood was used to make Mosquito aircraft during World War II (p. 58); I don't think so. If anything it was Norway or Sitka spruce plywood.

Birch and spruce discussed in depth, while Scots pine is said to be a good firewood especially if it has plenty of resin; its heating value is only slightly behind beech (p. 56). There is no mention of hornbeam, which is one of the best it firewood in terms of heating value in England; I've checked and it does occur in Norway

The book is full of quotable quotes. For example, in discussing the physical effort in log splitting (in particular, but also felling, cross-cutting, carrying and stacking) he says *Physical work creates a kind of spiritual peace. . . .The frustrations of the day disappear into the wood, and from there into the stove.* In talking of all the physical activity in firewood preparation he also quotes Henry Royce (of Rolls Royce) who noted*: Each time a material is handled, something is added to its cost, but not necessarily to its value* and the author makes the point that pleasurable as it may be to personally prepare your own domestic energy, it comes at a price – and from the scale of the firewood operations in Norway it is unlikely that Norwegian domestic producers are unaware of: *From the time the tree is felled. . .until the last ash pan is emptied a woodcutter with an annual consumption of 4 cords will have handled 36 metric tons* [tonnes] *of wood. Every additional stage involving unseasoned wood add an extra 1.8 metric tons per cord. . .and 900 kg for every additional stage involving seasoned wood.* He mentions too the fact that stacking is both an aesthetic as well as a practical challenge – see also, my comments above concerning the excellent pictures of log piles.

The translation is good and reads easily, I only noted two mistakes: on p 101, ax should be axis and on P.61, and *Pinus sylvestris* is called Scotch (!) pine.

Apart from my few quibbles above regarding the use of botanical nomenclature and so on, I wholeheartedly recommend this book to members of the Commonwealth Forestry Association.

**Jim Ball**
*President, CFA*

# Pan-European strategy for genetic conservation of forest trees and establishment of a core network of dynamic conservation units

**European Forest Genetic Resources Programme (EUFORGEN) and Biodiversity International**

The diversity of forests, at the level of species and at the level of genetic diversity within species, is an important resource for Europe. Over the past several decades European countries have made considerable efforts to conserve the genetic diversity of tree species. According to the EUFGIS portal, there are more than 3200 genetic conservation units which harbour more than 4000 populations of about 100 tree species. An earlier analysis


of the EUFGIS information revealed significant gaps in the conservation efforts in terms of the species covered and the geographical distribution of the units within the species' ranges. Subsequently, the EUFORGEN Steering Committee established a working group to develop the pan-European genetic conservation strategy for forest trees. The process followed by the working group and its results are presented in this report.

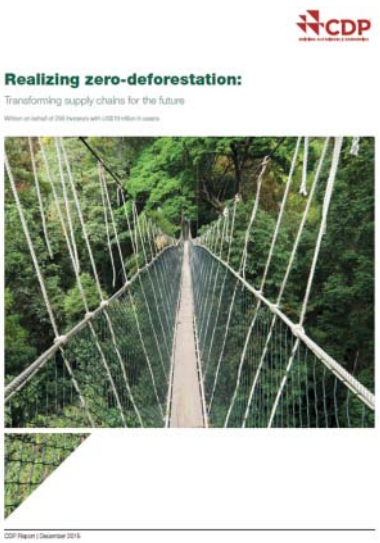
Download at www.euforgen.org/publications/publication/pan-european-strategy-for-genetic-conservation-of-forest-trees-and-establishment-of-a-core-network-o/

# Realizing zero-deforestation: Transforming supply chains for the future

**CPD**

Seven in ten companies have commitments to address deforestation yet few are translating these into meaningful actions, reveals new analysis from CDP, the global non-profit which gathers environmental data on behalf of investors.

*"Realizing zero-deforestation: Transforming supply chains for the future"*, launched at the Global Landscapes Forum in Paris. The findings suggest there is a widespread understanding of the business case for action, with nearly 90% of companies identifying commercial opportunities from addressing deforestation.




However, without relevant procurement strategies and policies, commitments are not being implemented fast enough. Half (50%) the companies with commitments to source certified soy are yet to get any into their supply chains. For palm oil this is the case for over a quarter (26%) of companies. And while over three quarters (77%) of manufacturers and retailers have standards for sourcing commodities identified as among the largest drivers of deforestation, just over a quarter (26%) provide suppliers with training or workshops on this issue.

CDP's global forests report 2015 is produced on behalf of 298 investors with US$19 trillion in assets. It analyzes disclosures from 171 of the world's largest companies – including Cargill, Mars and Unilever – to establish how they are managing four key commodities linked to deforestation: cattle products, palm oil, timber products and soy.

With the vast majority of global deforestation connected to agriculture, these four commodities end up in widely-used products from chocolate to biofuels. Companies are already seeing financial impacts from the production of these commodities, including damage to brand value or higher operating costs from regulatory or reputational risks.

*"Realizing zero-deforestation"* sets out five steps through which buyers can work with suppliers to bring their commitments to life. The report highlights the approaches companies are taking to address barriers, including:

- Asia Pulp & Paper's bottom-up approach of giving suppliers the tools to lead on implementing the company's conservation policy;
- Offering financial support, as Brazilian food processor Marfrig reports doing, to encourage producers to seek certification and pursue sustainable agricultural practices; and
- Working with not just large landowners but also smallholder farmers, as the world's biggest agricultural trader Cargill is doing, to enable them to reap the benefits of developing sustainable land use and agronomic practices.

Download at www.cdp.net/en-US/Pages/events/2015/forests/Global-Forests-Report-2015.aspx

# The oil palm complex: Smallholders, Agribusiness and the State in Indonesia and Malaysia

**Edited by Robert Cramb and John F. McCarthy. NUS Press, 488 pages**


The oil palm industry has transformed rural livelihoods and landscapes across wide swathes of Indonesia and Malaysia, generating wealth along with economic, social, and environmental controversy. Who benefits and who loses from oil palm development? Can oil palm development provide a basis for inclusive and sustainable rural development?

Based on detailed studies of specific communities and plantations and an analysis of the regional political economy of oil palm, this book unpicks the dominant policy narratives, business strategies, models of land acquisition, and labour-processes and presents the oil palm industry in Malaysia and Indonesia as a complex system in which land, labour and capital are closely interconnected. Understanding the oil palm complex is a prerequisite to developing better strategies to harness the oil palm boom for a more equitable and sustainable pattern of rural development.

# Around the World

## Indonesia's largest pulp-for-paper producer risks defaulting on sustainbility commitments due to bad peatland management

In 2013 Asia Pulp and Paper (APP) committed to use plantation fiber instead of clearing natural forests. However, in the same year APP announced the construction of a multi-billion dollar pulp mill in South Sumatra, Indonesia. A report launched today by twelve NGOs, including Wetlands International, shows that there is a high risk that the supply base of the plantation wood fiber for this mill is insecure. This is largely due to the degradation of peatlands which are drained for pulp-for-paper plantations. Drained peatlands cause increased fire risks, land subsidence, carbon emissions, and floods that cause the loss of land productivity. These peatland plantations constitute 77% of the supply base for the mill.

APP has also committed to contribute to Indonesia's target to reduce GHG emissions. The degradation of peatlands in Indonesia presents a huge challenge for Indonesia's commitment to the Paris Climate Agreement that will be signed on Friday. Indonesia is one of the world's largest producers of greenhouse gas emissions, with 50 percent of its emissions from peatland deforestation and drainage.

Peatland drainage makes the area highly prone to fires which, as last years' haze disaster has shown, can grow to catastrophic proportions. It impacts on public health with millions of people inhaling toxic haze, causing respiratory diseases and several deaths. Between January 1 and October 11, 2015, 50% of all "high-confidence" fire hotspots on peatlands identified were in plantations affiliated with APP. Within APP's concessions in South Sumatra, it is estimated that 293,000 ha burned in 2015, including 86,000 ha of planted Acacia trees (26% of planted area in the province). Fires thus directly impact on the active fiber supply base for the pulp mill, reducing its economic viability.

In 2015, Wetlands International called for a National Peatland Strategy to curb future haze disaster. The government has taken significant action including formation of a national Peatland Restoration Agency. So far the response from major peat-based companies to the issues related to peatland management has been insufficient, and some, such as APP are still expanding and enhancing their dependency on unsustainable use of peatlands. The current report exposes the major risks this entails for APP, its investors, the local communities and Indonesia's economy.

Peatland subsidence in drained plantations is caused by compaction and oxidation. The oxidation turns the peat carbon store, developed over thousands of years, into an active source of CO2. Subsidence resulting from the carbon emissions brings

the peat soil down to levels at which drainage is no longer possible. This happens at a rate of 3–5 cm per year after an initial rapid compaction of 75 cm in the first year. On the Kampar peninsula in Indonesia, where APP has many plantations, it has been shown that within the next 25 years almost 25% of the Acacia plantations will experience frequent and prolonged flooding and 67% will be have significant drainage problems – impacting on productivity.

In the shallow peatlands of South Sumatra, where APP has developed most of its plantations for the new mill, subsidence could lead to flooding within 16 years for 2m deep peat and 36 years for 3m deep peat. This will again reduce the viability of these plantations and reduce the economic viability of the planned pulp mill. Millions of hectares of peatlands in Indonesia are being drained for Acacia and palm oil, and will experience irreversible subsidence, related flooding and loss of production. The impacts of this will be disastrous for the viability of the plantations, for the local communities and the Indonesian economy as a whole.

The authors of the current report are highly concerned about the sustainability of APPs expanding operations, and expose the high risks for the required fiber supply of the new giant pulp-for-paper mill developed by APP. Fiber shortage as a result of dependency on peat-based operations could pressure APP to default on its non-deforestation commitment. The need for continued supply will impede the options to change from the current unsustainable business practices to alternative sustainable land-use options for Indonesia's peatlands. In order to avoid the risk of deforestation and increased GHG emissions from drainage, Indonesia's government and private sector will need to consider phasing out drainage-based peatland use, such as the Acacia pulp wood and palm oil concessions, and plan for peatland restoration, including phasing in alternative crops that are adapted to grow on wet peatlands (known as paludiculture).

**wetlands.org**

# Global: Rise in CO2 has 'greened Planet Earth'

Carbon dioxide emissions from industrial society have driven a huge growth in trees and other plants. A new study says that if the extra green leaves prompted by rising CO2 levels were laid in a carpet, it would cover twice the continental USA. Climate sceptics argue the findings show that the extra CO2 is actually benefiting the planet. But the researchers say the fertilisation effect diminishes over time. They warn the positives of CO2 are likely to be outweighed by the negatives.

The lead author, Prof Ranga Myneni from Boston University, told BBC News the extra tree growth would not compensate for global warming, rising sea levels, melting glaciers, ocean acidification, the loss of Arctic sea ice, and the prediction of more severe tropical storms.

The new study is published in the journal *Nature Climate Change* by a team of 32 authors from 24 institutions in eight countries. It is called ***Greening of the Earth and its Drivers***, and it is based on data from the Modis and AVHRR instruments which have been carried on American satellites over the past 33 years. The sensors show significant greening of something between 25% and 50% of the Earth's vegetated land, which in turn is slowing the pace of climate change as the plants are drawing CO2 from the atmosphere. Just 4% of vegetated land has suffered from plant loss.

This is in line with the Gaia thesis promoted by the maverick scientist James Lovelock who proposed that the atmosphere, rocks, seas and plants work together as a self-regulating organism. Mainstream science calls such mechanisms "feedbacks".

The scientists say several factors play a part in the plant boom, including climate change (8%), more nitrogen in the environment (9%), and shifts in land management (4%). But the main factor, they say, is plants using extra CO2 from human society to fertilise their growth (70%).

Harnessing energy from the sun, green leaves grow by using CO2, water, and nutrients from soil. "The greening reported in this study has the ability to fundamentally change the cycling of water and carbon in the climate system," said a lead author Dr Zaichun Zhu, from Peking University, Beijing, China.

The authors note that the beneficial aspect of CO2 fertilisation have previously been cited by contrarians to argue that carbon emissions need not be reduced. Co-author Dr Philippe Ciais, from the Laboratory of Climate and Environmental Sciences in Gif-sur-Yvette, France (also an IPCC author), said: "The fallacy of the contrarian argument is two-fold. First, the many negative aspects of climate change are not acknowledged. Second, studies have shown that plants acclimatise to rising CO2 concentration and the fertilisation effect diminishes over time." Future growth is also limited by other factors, such as lack of water or nutrients.

A co-author Prof Pierre Friedlingstein, from Exeter University, UK, told BBC News that carbon uptake from plants was factored into Intergovernmental Panel on Climate Change (IPCC) models, but was one of the main sources of uncertainty in future climate forecasts.

Warming the Earth releases CO2 by increasing decomposition of soil organic matter, thawing of permafrost, drying of soils, and reduced photosynthesis – potentially leading to tropical vegetation dieback. He said: "Carbon sinks (such as forests, where carbon is stored) would become sources if carbon loss from warming becomes larger than carbon gain from fertilisation.

"But we can't be certain yet when that would happen. Hopefully, the world will follow the Paris agreement objectives and limit warming below 2C."

Nic Lewis, an independent scientist often critical of the IPCC, told BBC News: "The magnitude of the increase in vegetation appears to be considerably larger than suggested by previous studies.

"This suggests that projected atmospheric CO2 levels in IPCC scenarios are significantly too high, which implies that global temperature rises projected by IPCC models are also too

high, even if the climate is as sensitive to CO2 increases as the models imply."

And Prof Judith Curry, the former chair of Earth and atmospheric sciences at the Georgia Institute of Technology, added: "It is inappropriate to dismiss the arguments of the so-called contrarians, since their disagreement with the consensus reflects conflicts of values and a preference for the empirical (i.e. what has been observed) versus the hypothetical (i.e. what is projected from climate models).

"These disagreements are at the heart of the public debate on climate change, and these issues should be debated, not dismissed."

**news.bbc.co.uk**

# Global: Animals vital for preserving carbon-storing forests

Losing animals that disperse seeds of large tree species could decrease the amount of carbon stored in a majority of the world's tropical forests, says a new study. "We found that large-seeded, animal-dispersed tree species attain greater adult sizes, and thus store more carbon than small-seeded animal-dispersed ones," says Mr. Anand Osuri, researcher at the National Centre for Biological Sciences, Bangalore, and lead author of a paper on the study published April in *Nature Communications*.

Forests are important carbon sinks, known to mitigate human-caused climate change. One process that boosts carbon sequestration is seed dispersal, which can be abiotic (wind or water-driven) or biotic (aided by animals). Over-hunting of fauna and subsequent decline in animal populations (defaunation) across many biomes, including tropical forests, can affect these animal-seed dispersal processes, which, in turn, affect survival of plant species and change tree species composition of forests.

Osuri was part of a team of international scientists that scoured through published floras and online databases to obtain information on seed dispersal modes and carbon storage capacities of more than 2,100 tree species across the tropical forests of Africa, Americas, Australia, South Asia and South East Asia.

They simulated varying levels of declines in numbers of large-seeded, animal-dispersed trees—which would be the case if frugivores are lost—and quantified resulting changes in carbon storage across these scenarios. "Changes in carbon storage that you see in response to a loss of animal-seed dispersers are very likely driven by changes in stand volume," Osuri says.

Forests of South Asia, Africa and the Americas—where large-seeded animal dispersed trees dominate—showed significant losses in carbon with declines in numbers of large-seeded tree species, but those in South East Asia and Australia did not—because tropical forests are dominated by abiotically-dispersed tree species which are large and store the most amount of carbon.

"It's interesting that the effect of defaunation is quite variable across the tropics, given the co-evolution of the current suite of dispersers," says Scott Goetz, deputy director and senior scientist, Woods Hole Research Center, Massachusetts.

"The role of climate regulation played by tropical forests will not be as effective if we protect the forests but not the animals which disperse tree seeds," says Osuri, who now plans to examine the effects of defaunation on post-seed dispersal stages such as seed survival and seed establishment, which will also play a role in determining tree composition in a forest.

**AsianScientist.com**

# N. America: Invasive earthworms threaten growth of new trees

An invading horde of earthworms is spreading across the forests of Canada and the northern US, gobbling seeds and altering forest ecosystems as it goes.

Despite their positive reputation for fertilising soil, the worms are not native. The native worms were wiped out by glaciation during the last ice age, tens of thousands of years ago. The invaders are usually from Europe.

We know that worms can alter soils, reduce leaf litter and disrupt microbes, which reduces biodiversity. Now it seems they also eat plant seeds, potentially altering the make-up of forests.

Colin Cassin and Peter Kotanen of the University of Toronto in Mississauga, Canada, caged single earthworms with fine-mesh screen in 54 test plots in a mixed forest in Ontario. They then sowed 15 seeds – marked with UV-fluorescent ink – into each plot. In cages containing worms, more than half of the small seeds had disappeared after two weeks, compared with less than 2 per cent of these seeds from cages with no worms (*Biological Invasions*, doi.org/bd42).

Cassin and Kotanen also used fibreglass-mesh screens to exclude worms from forest plots with a natural store of seeds in the soil. After four weeks, plots with worms had lost 47 per cent of their seeds, with small-seeded species again suffering the steepest losses. "They eat a lot more seeds than we think," says Cassin.

**New Scientist**

# Brazilian soy industry extends moratorium on deforestation indefinitely

The Brazilian soy industry has indefinitely extended a landmark moratorium on rainforest clearing for soybean production.

The agreement, first signed in 2006 after a Greenpeace campaign, had previously been renewed on an annual basis, regularly raising fears among environmentalists that it might not be renewed despite its success in helping curb deforestation for soy production in the Brazilian Amazon. The moratorium became a model for future zero deforestation commitments adopted by cattle, palm oil, and pulp and paper companies.

Greenpeace quickly welcomed the renewal.

"The renewal of the moratorium indefinitely ensures producers and trading companies can continue to rely on forest friendly Amazon soy to keep the doors to the global market open, even in times of environmental and political-economic crisis", said Greenpeace's Paulo Adario in a statement. "The forest thanks us for this commitment. And we, at the Soy Working Group, gain resilience to continue towards a permanent tool that combines production and forests conservation and the protection of the peoples who live in the Amazon."

The new agreement was signed by the Brazilian Ministry, the Soy Working Group (GTS – Grupo de Trabalho da Soja), the Brazilian Association of Vegetable Oils Industry (ABIOVE), Brazil's National Association of Grain Exporters (ANEC), and Greenpeace.

According to Greenpeace, the agreement "guarantees market access only to soy that is free from deforestation, slave labor or threats to indigenous lands."

The group noted that while soy production has expanded by a million hectares in the Brazilian Amazon since the moratorium was signed in July 2006, only 0.8 percent of that expansion occurred in newly deforested areas. Prior to the moratorium, soy was a major driver of deforestation in the region, especially in the states of Mato Grosso and Para.

"This large increase in soy production while respecting the moratorium is proof to the market: producing without destroying the forest is good business", said Adario.

Deforestation in the Brazilian Amazon is down roughly 80 percent as measured on an annual basis since its 2004 peak.

**news.mongabay.com**

# India plans to spend $6 billion on creating new forests

The Narendra Modi government plans to spend a staggering $6.2 billion (Rs41,000 crore) to increase India's green cover. The bill—called the Compensatory Afforestation Fund Bill, 2015—has already been passed by lawmakers in India's lower house this week. The aim of this project is to increase India's forest cover from 21.34% of the total land to 33%. The bill is now waiting to be passed by the upper house, the Rajya Sabha.

This money comes from the fee paid by various private companies and other entities to the Indian government since 2006 for allowing them to set up projects on forest land. The bill, which was introduced in the Lok Sabha last year, proposes that the state governments be provided 90% of the accumulated funds, with the remaining being kept with the central government.

"Our forest cover will dramatically increase and it will result in achieving our target 33% of tree cover and most importantly 2.5 billion tonne of carbon sink as we have indicated in our intended nationally determined contributions (INDC)," India's environment minister, Prakash Javadekar said on May 3.

But experts have their doubts. "I have my reservations about this project," Sreedhar Ramamurthi, an earth scientist and management trustee at NGO Environs Trust, said. "There should be a mechanism to monitor that the funds are used correctly. Many a times, forest officials themselves burn down forests when they are pressed for target completion and complain that their work was lost in fires."

"The setting up of the authority won't have any impact on forest land,"Ajay Kumar Saxena, program manager, forestry, at Centre for Science and Environment (CSE) said. "Already, a lot of forest land has been affected in the past and we can't reverse the damage that has happened."

There are also concerns over how exactly the government will develop forests on alternate land. Since 1980, the environment ministry has approved the diversion of 1.29 million hectares of forestlands for non-forestry purposes, according to a study by CSE.

In a report (pdf) in 2013, India's comptroller and auditor general (CAG) had made a scathing assessment of the environment ministry's failure to grow forests on alternative land, even as it diverted forests areas for infrastructure projects.

In the report, the auditor had said: We noticed serious shortcomings in regulatory issues related to diversion of forest land, the abject failure to promote compensatory afforestation, the unauthorised diversion of forest land in the case of mining and the attendant violation of the environmental regime. To be able to undertake compensatory afforestation on equivalent area of non-forest land, such land needs to be received by the Government. The Ministry's records revealed that against the receivable non-forest land of 1,03,381.91 hectare, 28,086 hectare was received during the period 2006–12 which constituted only 27% of receivable non-forest land. The compensatory afforestation done over the non-forest land received was an abysmal 7,280.84 hectare constituting 7% of the land which ought to have been received.

"There is no clarity on how the government will develop these new forests," added Ramamurthi. "Are you going to throw away people from their land to develop new forests? If so, why did you allow forests to be depleted in the first case? This is a kind of double whammy."

**qz.com**

# Cameroon: Biomass. . . Available Everywhere!

Cameroon has the third largest biomass potential in Sub-Saharan Africa, though it remains underexploited because of lack of technology.

The United Nations Industrial Development Organisation, UNIDO, holds that Cameroon has the largest biomass potential in Sub-Saharan Africa. The country boasts substantial forest biomass potential (in terms of firewood and wood waste) and considerable non-forest biomass (from agricultural residue), which represent the second source of biomass in the country.

"Biomass is available everywhere," explained William Lemnyuy Albun Banye, an Agro-Industrial Engineer and Sub-Director for Waste, Toxic and Hazardous Chemical Management in the Ministry of Environment, Protection of Nature and Sustainable Development. He stated that the country's wood, sawdust and industrial waste were some of the products that can generate energy if well exploited. Cameroon's potential is huge, but few business people are willing to invest. "This sector provides a lot of opportunities for investors," stressed Albun Banye.

The Food and Agriculture Organisation, FAO, says over 20 million hectares of Cameroon land is forested landmass. The country however lost over 4 million hectares of forest cover (at an average rate of 220,000 hectares annually) between 1990 and 2010. The forests contain 2,696 million metric tonnes of carbon in living forest biomass. This covers a wide range of crops generating different quantities of waste from agriculture. Logs from rubber trees, seeds and cake from cotton, parchment bagasse from Robusta coffee, molasses and empty fruit bunches from sugar cane and kernel shells from palm oil, form some of the biomass with economically-recoverable energy.

Although the country has not carried out any commercial production of biofuels, apart from isolated trials by the Cameroon Development Corporation, CDC, the sugar producing company, SOSUCAM, the cotton company, SODECOTON, MAISCAM and SOCAPALM. The country counts bioethanol from sugarcane, biodiesel from oil palm, groundnut and vegetable oil as well as biogas from urban waste, as first generation biofuel types. Combustible and renewable waste comprising solid biomass, liquid biomass, biogas, industrial waste, and municipal waste, all measure up to the country's potential.

The weak link, experts say, is the lack of conversion technology, explained William Lemnyuy Albun Banye. The Ministry of Environment, Protection of Nature and Sustainable Development, has however carried out studies that can be easily accessed by potential investors. Investors at the May 17–18, 2016 International Economic Conference in Yaounde on the theme: "Investing in Cameroon, Land of Attractive Opportunities," now know what awaits them as business openings in the sector.

**AllAfrica.com**

# Europe: Ash tree set for extinction in Europe

The ash tree is likely to be wiped out in Europe, according to a review of the evidence. The trees are being killed off by the fungal disease ash-dieback along with an invasive beetle called the emerald ash borer. According to the research, published in the Journal of Ecology, the British countryside will never look the same again. The paper says that the ash will most likely be "eliminated" in Europe. This could mirror the way Dutch elm disease largely wiped out the elm in the 1980s.

Ash trees are a key part of the treescape of Britain. You don't have to go to the countryside to see them. In and around towns and cities there are 2.2 million. In woodland, only the oak is more common. However, according to a review led by Dr Peter Thomas of Keele University and published in the Journal of Ecology, "between the fungal disease ash dieback and a bright green beetle called the emerald ash borer, it is likely that almost all ash trees in Europe will be wiped out – just as the elm was largely eliminated by Dutch elm disease".

Ash dieback, also known as Chalara, is a disease that was first seen in Eastern Europe in 1992. It now affects more than 2 million sq km, from Scandinavia to Italy. It was identified in England in 2012 in a consignment of imported infected trees. It has since spread from Norfolk and Suffolk to South Wales. Caused by the fungus *Hymenoscyphus fraxineus*, it kills the leaves, then the branches, trunk and eventually the whole tree. It has the potential to destroy 95% of ash trees in the UK.

The emerald ash borer is a bright green beetle that, like ash dieback, is native to Asia. It's not yet in the UK but is spreading west from Moscow at a rate of 25 miles (41 km) a year and is thought to have reached Sweden. The adult beetles feed on ash trees and cause little damage. However the larvae bore under the bark and in to the wood, killing the tree.

According to Dr Thomas: "Our European ash is very susceptible to the beetle. It is only a matter of time before it spreads across the rest of Europe – including Britain – and the beetle is set to become the biggest threat faced by ash in Europe, potentially far more serious than ash dieback."

This won't just change our landscape – it will have a severe impact on biodiversity. 1,000 species are associated with ash or ash woodland, including 12 types of bird, 55 mammals and 239 invertebrates. Dr Thomas said, "Of these, over 100 species of lichens, fungi and insects are dependent upon the ash tree and are likely to decline or become extinct if the ash was gone. Some other trees such as alder, small-leaved lime and rowan can provide homes for some of these species. . . but if the ash went, the British countryside would never look the same again."

One small hope is that some cloned ash trees have shown resistance against the fungus. But that won't protect them against the beetle.

**news.bbc.co.uk**

# Malaysia: Beetle species in Malaysia could potentially destroy palm oil industry within 20 years

A species of beetle illegally brought in across the Thai-Malaysian border has been ravaging the nation's palm trees, and – if left unchecked – can potentially decimate the palm oil industry within just 20 years. The red palm weevil, or *Rhynchophorus ferrugineus*, is a species of beetle that excavates holes in the trunk of palm trees, eventually killing the plant. It infests coconut palms, date palms and oil palms.

According to the Department of Agriculture's (DoA) Plant Biosecurity Division, so far a whopping 465ha of coconut trees are gone, mainly in Terengganu and Kedah.There are 85,799ha of coconut palms in Malaysia. Additionally, 335 date palms have been eaten. So far, said department head Faridah Aini Muhammad, no commercial plantations had been affected, but the weevil's spread was a major cause for concern. "What worries us is that if these beetles do not have access to their main source of food in date palms, they will move to oil palm trees. "There have been reports which are still unconfirmed as yet, but it is a very real concern," she said, adding that research was currently ongoing in several universities across the country. "Research at UKM has shown that even without being forced, the weevil will go to the palm oil fruits and breed inside the tree itself."

The red palm weevil first entered the country when seedlings and date palms were illegally brought in across the border with the beetle in the trunks. Under Malaysia's Plant Quarantine Act, the import of any palms except for research purposes is prohibited. So far, the weevil can be found in five states – Perlis, Kedah, Kelantan, Penang and Terengganu – with the latter being the worst-hit.

"People have been bringing pandan coconut and date palms in for years, but after El Nino recently the weather became more suitable for these palms to flower and fruit, so people wanted to bring it in," said Faridah. However, unknown to most people, the bulk of the date palms smuggled in were ornamental plants that would not fruit.

While Malaysia is home to several other species of palm weevil, the one that has recently entered our shores breeds far quicker and so is more dangerous. "To control its spread, we must spray cypermethrin (an insecticide) every two weeks until the infestation is dead. We have to do preventive spraying as well, including soil drenching (adding diluted chemicals to the base of plants)," said Faridah. The adults are also killed with the use of pheromone traps, which can be used as an early detection method. "If we find beetles in the traps, we know there are probably more," she said.

The DoA has also met with and briefed the Smuggling Prevention Unit (UPP) of the Border Control Agency to look into the matter. The Biosecurity Division has urged Malaysians to contact the DoA if they notice a possible infestation, or spray insecticide themselves. "The first sign will be a wilting crown – the leaves fall into a skirt-like formation around the tree. They will then start dropping." Eventually, the whole trunk will be hollowed out and potentially fall, which is also a risk to the public, as some areas use palms as avenue trees to line roads and pathways, and even around mosques," she said.

Faridah said that while the beetle had appeared in Malaysia in 2010, the situation had worsened due to an increase in smuggling."We have approached nurseries and told them to stop selling these smuggled date palms, but people must stop buying from unreliable sources, and report any potential smuggling to the authorities," she said.

**news.asiaone.com**

# Madagascar: Lemur survival key to stopping forest demise

THE giants of the Madagascan forests, such as koala lemurs, each the size of a gorilla, died out half a millennium ago. But they left in their wake a host of tree species whose habitats are shrinking now they have no animals to disperse their seeds in droppings. With other lemurs critically endangered, swathes of Madagascar's unique flora are living on borrowed time.

Sarah Federman of Yale University and her colleagues have linked lemur extinctions to the precarious future of the island's large-seeded plants.

They found that the disappearance of 17 species of fruit-eating lemurs in the past few centuries has reduced the ability of lemurs to disperse seeds by up to a third. This means many of the island's plants have lost their primary means of propagation.

The team discovered this by looking at the teeth and jaws of the extinct lemurs, to work out their diet. The giant lemurs ate large fruit with large seeds, which they then excreted widely across the island. With the big lemurs gone, some plants are in real trouble because their seeds are too big for other animals to eat (*PNAS*, DOI: 10/1073/pnas.1523825113).

Others are in danger – many trees are now dependent on the two largest surviving lemurs that are "unique and irreplaceable," says Federman. Both are also critically endangered. The affected trees include most of the 33 species of *Canarium* hardwoods dominating the island's forests. So, conserving lemurs should be an urgent priority, says Federman.

"This study is of utmost importance," says Christoph Schwitzer of Bristol Zoo, UK, a member of the IUCN specialist group for primates. "It shows that protecting lemurs means protecting Madagascar's forest ecosystems."

**New Scientist**

# Kenya: Twenty million trees for Kenya's forests

The International Tree Foundation's #20milliontrees campaign – for the planting of 20 million trees in Kenya's forests – is now officially underway, following successful launch ceremonies in London and Embu county, Kenya. The Kenya launch was held in May in a spirit of celebration, with singing, dancing, poetry recitals – and the symbolic planting of the first 100 trees. More than 450 people attended the launch, including representatives of national and regional government, the Kenya Forest Service, members of local community groups and children from nearby village schools.

This follows the successful London launch at the Royal Institution in March, when the campaign was officially inaugurated by Kenya's High Commissioner to the UK, Mr Lazarus Amayo. This is our most ambitious campaign yet in our 92-year history and we're now aiming to raise £4m for the planting of 20 million trees.

The aim of the campaign is plant a total of 20 million trees in and around Kenya's highland forests, dubbed "Water Towers" because of their vital role in conserving the country's rivers, lakes and drinking water. The initiative will also help combat climate change, protect forest habitats for rare birds and mammals – while improving food security for some of Africa's most vulnerable people: Around a quarter of the trees cultivated will be planted on surrounding farmland – to provide food and resources, stabilise soils and increase crop yields.

Kenya's forest cover became severely depleted during the 1970s and 1980s through illegal activities such as timber harvesting or charcoal burning. Only seven per cent of the country's land is covered by trees – which equates to 67 trees per person, compared with a global average of 420. Many upland forests have been destroyed or severely degraded.

The campaign forms part of a wider strategy by the Kenyan government to meet reforestation targets under the COP21 Paris Climate Summit and the UN's new Sustainable Development Goals.

It will be led by local community organisations and volunteer smallholder farmers, who will set up tree nurseries, transport and plant the trees. As well as restoring primary forest with indigenous trees, the farmers will plant trees on their own land to restore soil fertility, provide shade for other crops, and produce fruits, nuts and medicines.

Phase one of the campaign is being spearheaded by MKEC, working in co-operation with the Kenya Forest Service, which has set aside suitable degraded land for planting on the slopes of Mount Kenya Forest. They will receive expert technical advice from Botanical Gardens Conservation International and Kenya Forestry Research Institute.

The other Water Towers being targeted are the Aberdares, Mount Elgon, the Cherangani Hills, and the Mau Complex – as well as Kakamega Forest, Kenya's only rainforest.

Transporting millions of seedlings to deforested areas will be a huge task. The sites will also need to be visited regularly and monitored to ensure appropriate tree care and protection. Each tree planted will save an estimated 20kg of carbon each year – so that 20 million trees will save 400 thousand tonnes of carbon every year.

**internationaltreefoundation.org**

# Malaysia records cumulative exports of tropical timber

Malaysia exported a cumulative total of over one million cubic meters of certified tropical timber to 49 destinations all over Asia Pacific, Middle East, Europe, South Africa, United States and Canada as at December 2015.

Of the total, an estimated 868,332 cubic meters or 82.93 per cent were exported to Europe with five per cent of the total volume exported to Germany.

The Malaysian Timber Certification Council (MTCC) recently mounted a working visit to Germany, among others, to promote the offtake of quality, certified tropical timber from Malaysia.

The six-day working visit, led by MTCC Chief Executive Officer Yong Teng Koon, enabled Malaysia and Germany to dialogue about key milestones of sustainable forest management practices and forest certification to promote the uptake of programme for the endorsement of forest certification (PEFC) certified timber from Malaysia.

"Currently, only 10 per cent of the world's forests have been certified, of which 1.0 per cent comprised tropical forests.

"This shows that concerted efforts are needed to encourage and promote sustainable forest management of the world forests, in particular tropical forest.

"In this regard, the acceptance of PEFC certified timber from Malaysia in the public procurement policies by the various states in Germany will definitely be a significant step in the right direction," said Yong.

The Malaysian Timber Certification Scheme has been accepted under the national timber procurement policies of Germany, he added.

**DailyExpres.com.my**

# Scotland needs more trees: Confor manifesto for Holyrood election

The Scottish Government must plant more trees to secure the future of Scotland's £1 billion forestry and timber industry, according to the sector's leading trade body. In a five-point forestry action plan ahead of the Holyrood elections, Confor issues a rallying cry for new planting – and warns the target of 100,000 hectares of new woodland in Scotland in the decade to 2022 is in serious danger of being missed.

Confor's manifesto Forestry and Timber: Growing a Resilient Scotland calculates that the original target of 10,000 hectares (ha) of annual planting over a decade now needs to be increased to 13,000ha annually to reach 100,000ha by 2022.

First Minister Nicola Sturgeon pledged to hit the target in a major speech in late 2015, saying: "We are committed to increase planting rates even further so that we plant 100,000 hectares of trees in the decade to 2022. That would be equivalent to 200 million new trees."

Stuart Goodall, Chief Executive of Confor, welcomed the commitment and said: "Planting underpins everything – if we can hit these targets, very substantial economic, environmental and social benefits will flow from that. If we don't, we are in danger of falling into the 'timber gap' – a long-term drop-off in supply which could damage confidence, reduce investment and jeopardise jobs and businesses."

A report in late 2015 showed that the forestry and timber sector in Scotland is now worth £1 billion and supports well over 25,000 direct jobs with employee numbers rising dramatically during the economic downturn – a period of strong timber supplies due to historic planting.

The manifesto lists the significant opportunities of meeting planting targets and following through on the action plan:

- JOBS AND GROWTH: Confidence in future supplies will protect jobs and investment like the £95m invested by Norbord this year in its Highland site
- CLIMATE CHANGE: Planting trees soaks up carbon and wood products lock up carbon, making a major contribution to the Scottish Government's world-leading climate change targets
- REDUCING FLOOD RISKS: A growing body of research shows tree planting in the uplands can reduce downstream floods by up to 20 per cent. Confor produced a 2016 discussion paper on the subject.
- BETTER LAND USE: Integrating new woodland with sheep farming makes better economic and environmental sense for Scotland's uplands, shown in a detailed independent report on the Eskdalemuir area in southern Scotland.

The five steps to deliver the range of opportunities listed in the Confor manifesto are:

- PLANT MORE PRODUCTIVE WOODLANDS: The Scottish Government should plant 13,000ha of new woodland annually to 2022 to meet its target, with at least 8–9,000 ha of productive woodland to provide timber for businesses in the future.
- IMPROVE THE FORESTRY APPLICATIONS SYSTEM: Confor wants further improvements to the Forestry Grant Scheme to speed up the approval process and remove unnecessary complexity – to make applications simpler and drive up planting.
- STIMULATE MARKETS FOR TIMBER AND WOOD: Wood is by far the best and most sustainable building material for the environment. Confor wants a 'Wood Equal' policy so it is given detailed consideration in all public building projects.
- RESTOCK PUBLIC FORESTS: The Scottish Government manages 478,000ha of forest (an area slightly bigger than the entire Scottish Borders region – 432,000 ha) but budget pressures are limiting restocking and investment is needed to ensure this happens during the next parliamentary term.
- CONTINUE TO SUPPORT TIMBER TRANSPORT: Confor welcomes the recent commitment to future funding of almost £3m per year but it is vital that this continues to take more timber off minor roads by creating forest roads and moving it by water – and planning when there is no alternative to public roads.

Stuart Goodall concluded: "These action points are all very much achievable and do not require large sums of money – and if the Scottish Government follows through on them, the economic, environmental and social rewards will be very substantial for our rural communities."

The manifesto will be handed to all delegates at Confor's Scottish conference on March 22nd, Forestry and Timber: Scotland's Hidden Success Story and distributed to all political parties to share with their Holyrood election candidates.

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