

# CFA Newsletter



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## Contents:

### Association news

- Regional Awards in Australia

### Forest Scenes

- On care for our common home
- Forestry career outlook in Zimbabwe
- Pine martens recover in the UK
- Model Forest and traditional plants
- First Nations and herbicide use in Canada
- Forests delivered by courier
- The Charter of the Forest
- Two interesting trees
- Forestry governance in Brazil

### Publications

- Forestry for rural development
- Measurements for estimating carbon stocks
- Technical considerations for Forest Reference Emission Level
- Understanding long-term impacts in the forest sector
- The context of natural forest management
- Making forest conservation benefit local communities

### Around the World

## The Forest Act and devolution in Kenya: do local communities have a standing?



*David Kuria has mobilized members of local communities through KENVO to set up various conservation initiatives. Here he is explaining the value of tree planting to the Kenya Army at a tree planting event.*

In the last decade, Kenya has seen rapid changes in policies that govern management of the forest sector. In 2005, the country enacted Forest Act 2005 that recognized local communities as important stakeholders in management of forest. The Forest Act introduced participatory forest management, through the engagement of local communities, established the Kenya Forest Service (KFS), and enabled the formation of community institutions (Community Forest Associations, CFAs). Communities were expected to develop Participatory Forest Management Plans and Agreements which are fundamental to outlining how the forest is to be used, what roles and rights communities have, and the responsibilities of each stakeholder.

At Kikuyu Escarpment Forests all forest stations have been successful in developing these plans through the assistance of the Kijabe Environment Volunteers, KENVO. However, implementation of CFAs management plans and agreements is not sufficient for conservation of biodiversity in this area owing to the capacity and resources needed to implement these plans. Most actions outlined in the plans lay unimplemented. Furthermore, some activities such as overgrazing, poaching and illegal collection of fuelwood and other forest products are critical threats to the ecosystem.

The implementation is harbored by lack of capacity, failure to influence county decisions, lack of clarity between devolved and central government and lack of income. As a country, Kenya

### **CFA Newsletter**

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The views expressed are not necessarily those of the CFA.

does not have any experience in the running of County Governments. The level of stakeholder engagement in the running of County Governments remains a new area to many stakeholders.

Failure of the County Government to enact environmentally friendly policies will lead to poor development even in areas where natural resources are known to earn revenues. Policy failures, corruption, poor governance, poor involvement of communities in decision making, lack of transparency and accountability by the central government have in the past contributed to poor development at the local level and massive exploitation of natural resources.

### **So what has KENVO done?**

To give the local communities some voices in the management of our forests and other natural resources, KENVO has undertaken a number of activities. To begin with we conducted research and surveys in an around the Kikuyu Escarpment landscape to understand the issues and develop solutions. Poverty emerged as a key issue to be addressed in order to attain conservation and livelihoods objectives.

We recognized that tackling the entire spectrum of poverty-related problems affecting the local community in the Kikuyu Escarpment landscape was a difficult and complex undertaking. In our small way, we at KENVO started to demonstrate that non-consumptive use of the forest is both desirable and feasible in this landscape, and that the local community stood to benefit from such activities in the long term. In this regard, we developed a two-pronged programmatic approach: conservation and livelihoods, and environmental education and youth exchange. Our activities include the following.

### **Forest restoration**

One of our core activities has been running a forest restoration programme since 2000. The scheme has used private

sponsorship to support tree nurseries tended by volunteers. To date, UNEP and a number of private companies have been the main sponsors of this initiative, funding the planting of a total of 200 hectares with a mix of indigenous trees.

In order to retain the value of the forest and protect it, we have advanced the concept of participatory forest management (PFM) and empowered CFAs in monitoring and policing illegal activities.

### **Ecotourism**

Currently we are helping local communities to exploit the ecotourism potential of the forests. These forests offer excellent opportunity for tourism services, including nature walks, bird-watching and camping. We have a special programme for local schools in Lari Sub County, which trains students in basic birdwatching skills, establishing and managing tree nurseries, guided nature and forest walks, park visits and hikes in the forest, among many nature-based activities. The County Government of Kiambu, Kenya Wildlife Services and the Kenya Forest Services are our partners in this venture.

Other income-generating activities that we have initiated include beekeeping, commercial tree nurseries, bottling of natural forest water, fish farming and intensive household agriculture. We are working with more than 3000 farmers through their committees to implement these income-generating activities.

We have supported establishment of biogas units at households level.

### **Community outreach**

The PFM arrangements at the Kikuyu Escapement have enabled KENVO to articulate the communities' issues at the highest level and, more importantly, to ease communication between communities and central government as well as County Government.

### **Exchange programme**

KENVO is involved in various exchange programmes. At the local level, we facilitate peer learning and exchange visits for community groups – particularly those made up of local farmers. Internationally, we take part in an ongoing CWY programme, which is a trilateral exchange programme between Kenya (KENVO), Tanzania (*Ushirika wa ki Kristo wa Vijana Tanzania – UVIKIUTA*) and Canada (CWY). More than 500 young people have participated in this programme and have either visited Canada or Tanzania. Locally, more than 3000 youths have been reached and benefited from training in leadership skills; an impressive achievement in a rural setting.

**David Kuria**

Executive Director of Kijabe Environment Volunteers (KENVO)



*Kuria School awareness campaign activity*

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# Association news

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## Regional Awards presented in Australia



*Michael Bleby, CFA Regional Coordinator for South-East Asia and the Pacific, introduces Geraint Richards, Head Forester for The Duchy of Cornwall.*



*Michael Bleby, Andrew McEwen, Don Gilmour and Bob Newman (CFA Vice-President)*

**T**wo CFA Regional Awards were presented on 14<sup>th</sup> April, at the ANZIF Conference in Creswick, Victoria, by visiting CFA member from the UK, Geraint Richards – The Duchy of Cornwall’s Head Forester. For Australia, the Regional Award was presented to Don Gilmour, and for New Zealand, the award went to Andrew McEwen.

**Andrew McEwen** began his professional career as a mensuration scientist at the New Zealand Forest Research Institute, Rotorua, where he played a key role during the introduction of computer based forest management systems and later led the mensuration research group. Subsequently, he was pivotal in the installation of computer networks across the New Zealand Forest Service.

In the 1980’s the NZ Government undertook major restructuring which led to the eventual privatisation of the publicly owned Forest estate. During this period Andrew made a significant contribution to the processes of structural reform, reorganisation, legal arrangements, policy development and implementation of the revised arrangements.

His work for the Crown associated with the privatisation of the plantation Forest estate continued, and his endeavours extended to the various treaties, agreements, legal and legislative arrangements, licences and land transfers, which followed.

He has taken on leadership roles in the adoption of Forestry Standards in NZ, and more recently, the development of Forest Certification in NZ through the introduction PEFC.

An extensive list of papers and publications attests to his professional activity and experience in NZ, which has extended Internationally with presentations in China, USA, UK, Australia and South Africa where his expertise in privatisation matters was particularly sought. In 2014 his colleagues in NZ saw fit to recognise his work through the prestigious Kirk Medal Award.

Andrew’s leadership and passion for the Forestry profession has been demonstrated through his active membership of the

NZ Institute of Forestry and for a considerable term as its President. His involvement continues as Chairman of the Institute’s Foundation.

**Don Gilmour** has played an exceptional role in providing strategic and practical guidance to Forestry and Natural Resource Management programs in Australia and in many developing countries throughout Asia, the Pacific, Africa and Latin America.

Initially as a researcher in North Queensland, and subsequently as Principal of the Forestry Training Centre at Gympie, Don’s professional life led to work in Nepal where he was team leader for the Nepal Australia Forestry Project for nine years. Subsequently, through his involvement in leadership roles within the IUCN (International Union for Conservation of Nature), his influence in policy development, strategic and operational resource management, has clearly led to his work having an impact globally.

He is also a founding member and Chairman of RECOFTC – the Centre for People and Forests in Thailand, an International training organization that focuses on capacity building for Community Forestry in the Asia Pacific region. His work in all these endeavours, has been characterised by an ability to successfully engage with communities and empower them to develop strategies to restore and rehabilitate degraded forest ecosystems, which in turn has contributed to the alleviation of poverty, and the development of locally based conservation programs.

The Commonwealth Forestry Association congratulates both Andrew and Don on their awards, in the knowledge that their work and careers have made outstanding contributions to forestry in this and other regions of the globe.

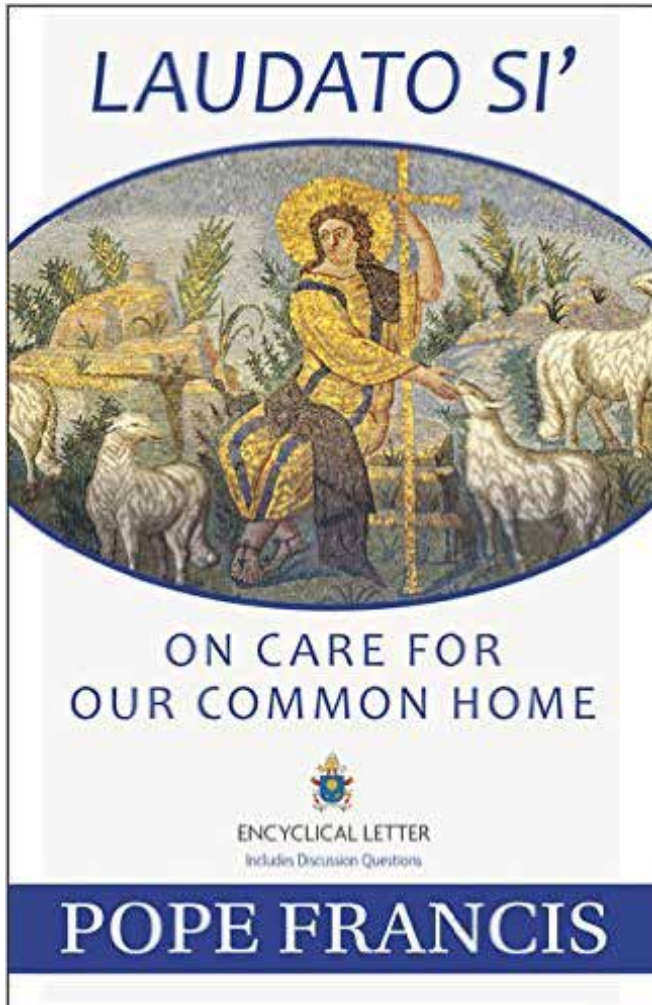
**Michael Bleby**  
CFA Regional Coordinator

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# Forest Scenes

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## On care for our common home



*Laudato si' is the second encyclical of Pope Francis*

I'm probably right in thinking that this is the first review of a Papal Encyclical in the CFA Newsletter. Not surprising, since one would not expect matters of faith to be directly relevant to practical forestry. But bookstores show that increasing numbers of authors argue that one's belief should be considered as part of secular work – for example, in management and development – and this document on the Catholic Church's contribution to the environmental and climate change debate gives many examples that link forestry and faith.

**Laudato Si'** is the common (Italian) title of the 184pp. encyclical which means *Praise be to you*, and is the first line of a canticle by St. Francis that praises God with all of his creation. The subtitle is *On Care for Our Common Home*. If foresters were to choose a patron saint for their profession, I'm sure many would choose St. Francis. The document stands out as being very readable in its English form (a welcome relief from

other denser encyclicals), and is logically and clearly ordered into a preface, six chapters and sub-headings, as follows:

**Ch.1 What is happening to our common home** (pollution and climate change; the issue of water; loss of biodiversity; decline in the quality of human life and the breakdown of society; global inequality; weak responses; a variety of opinions).

**Ch.2 The gospel of creation** (the light offered by faith; the wisdom of the biblical accounts; the mystery of the universe; the message of each creature in the harmony of creation; a universal communion; the common destination of goods; the gaze of Jesus).

**Ch.3 The human roots of the ecological crisis** (technology, creativity and power; the globalisation of the technocratic paradigm; the crisis and effects of modern anthropocentrism).

**Ch.4 Integral ecology** (environmental, economic and social ecology; cultural ecology; ecology of daily life; the principle of the common good; justice between the generations).

**Ch.5 Lines of approach and action** (dialogue on the environment in the international community; dialogue for new national and local policies; dialogue and transparency in decision making; politics and economy in dialogue for human fulfilment; religions in dialogue with science).

**Ch.6 Ecological education and spirituality** (towards a new lifestyle; education for the covenant between humanity and the environment; ecological conversion; joy and peace; civic and political love; sacramental signs and the celebration of rest; the trinity and the relationship between creatures; queen of all creation; beyond the sun).

For some who are not Christian, nor of any faith for that matter, the preface, chapters 2 and 6 have some theological ideas and terminology that may be unusual and off-putting. However, as Pope Francis remarks, his document is addressed to all people of goodwill, and... *"I am well aware that in the areas of politics and philosophy there are those who firmly reject the idea of a Creator, or consider it irrelevant... Nonetheless, science and religion, with their distinctive approaches to understanding reality, can enter into an intense dialogue fruitful for both"*. I think he's correct.

It's soon clear in the body of the text that the document had been written by a team who are experts in their fields, and much reads like excerpts from high quality briefing papers. Each paragraph (there are 246 of them) is numbered for ease of reference, and there is a detailed table of contents at the end. There are some 172 references, both scientific and theological, throughout the text. Official online, PDF and printed versions can be found via: <https://laudatosi.com/watch>.

It would be difficult to summarise the content with regard to specific forestry matters, but I would suggest that the Encyclical should be essential reading for all concerned with the environment, conservation and forest management, and so – get a copy and read it all (I did in one afternoon). A quick search of the text (in the PDF document) returned some 15 results for "forest" covering all the issues one would expect, and I'll quote one passage to give a flavour and act as a bait:

“39. The replacement of virgin forest with plantations of trees, usually monocultures, is rarely adequately analyzed. Yet this can seriously compromise a biodiversity which the new species being introduced does not accommodate. Similarly, wetlands converted into cultivated land lose the enormous biodiversity which they formerly hosted. In some coastal areas the disappearance of ecosystems sustained by mangrove swamps is a source of serious concern.”

In conclusion, this document is a very valuable addition to the briefing related to the environment and climate change. It is both broad ranging in scope (secular and spiritual) and in scale (national and local) and there are many practical suggestions as to how our individual efforts can help. It's a breath of fresh air (surely good for climate change!) and I was inspired by it – I hope you will be too.

**A. Marcus J. Robbins**  
Treasurer, CFA

## Forestry career outlook in Zimbabwe

In the past two decades, the number of accredited forestry institutions in Zimbabwe doubled. The drive was to provide access to relevant, functional and qualitative oriented forestry education to meet the needs of the country and the SADC region at large. In spite of the seemingly consistent enrolment statistics and huge progress made in forestry educational outcomes, more than 80% of forestry graduates join the ranks of unemployment. In an effort to improve the unemployment woes, some leading forestry institutions like Zimbabwe College of Forestry and the Forest Industries Training Centre have stepped up by providing a curriculum tailored towards sustained employment creation and entrepreneurship. Nevertheless, transition from forestry institutions to work remains a major challenge, such that close to 85% of young graduates end up either unemployed or underemployed in the informal sector. Unemployment rate in Zimbabwe is

estimated to be between 80-85%. Presently, the growth of forestry employment prospects is far below the number of forestry graduates, mainly because of a dwindling economy which has resulted in an absence of commensurate job opportunities. This is further worsened by lack of fiscal opportunities such as loans or grants to start-up or expand businesses, hence a small number of the graduates migrate to neighbouring countries like South Africa and Mozambique in search of jobs. While all these look like global problems, Zimbabwean forestry graduates have had more than their fair share of all these challenges in the last decade. If the industry is not in a position to intercept graduates this leaves many young forestry students and graduates wondering about taking forestry as a career especially in this unreceptive environment.

**Phillip Muyambo**

## Pine marten recovery, restoration and relevance for forestry in Britain and Ireland



*Pine marten (credit: Edward Delaney)*

The pine marten, *Martes martes*, is a medium-sized, arboreal mustelid found throughout mainland Europe, where it is predominantly associated with mature forested habitat (Mitchell-Jones *et al.* 1999). Pine martens were once common and widespread in Britain, (Maroo and Yalden 2000) however, during the 18<sup>th</sup> and 19<sup>th</sup> centuries, the population decreased significantly due to persecution and long-term declines in habitat. By 1915 pine martens were extinct in most of southern Britain, with remnant populations restricted to the north-west highlands in Scotland, and small upland areas of northern England and Wales (Langley and Yalden 1977). In Ireland, the pine marten underwent a similar major reduction in range and number during this period, and for the same reasons (O'Sullivan 1983).

Since the mid-20th century, the Scottish pine marten population has been increasing and recovering its range south and eastwards (Croose *et al.* 2014), and in Ireland too the species' fortune has had a turnaround (O'Mahony *et al.* 2012). Pine marten recovery in both Ireland and Scotland is attributed to two main factors: a reduction in persecution following legal protection in the 1980s, and increases in forest cover.

As the pine marten population recolonised the Irish midlands there were anecdotal reports of the disappearance of grey



*Pine marten (credit: Colin Smith)*



*Caledonian pine wood in the Scottish Highlands (credit: Lizzie Croose)*

squirrels coupled with re-colonisation by red squirrels following several decades of absence. Subsequent research (Sheehy and Lawton 2014) confirmed a population crash of grey squirrels in approximately 9,000 km<sup>2</sup> of the species' former distribution in the Irish midlands, and the study suggested that pine marten abundance may be a critical factor. This is also reflected in parts of Scotland where pine martens are spreading, coupled with the return of red squirrels after an absence of several years or decades (H. Denman pers. comm.).

In England and Wales forest cover has also increased and forest management is changing, with trends towards the use of more native broadleaved species and lower impact silvicultural systems such as continuous cover forest management. These developments in forest management should be beneficial for pine martens in terms of habitat, increased food availability and breeding locations. However, there has been no discernible recovery of pine martens in England and Wales, where the species still remains very rare or absent altogether (Birks and Messenger 2010).

The Vincent Wildlife Trust (VWT) has been carrying out research and surveys of the pine marten for thirty years. There is now a consensus that intervention is urgently needed to prevent extinction and to restore viable populations of pine martens to their historical range in England and Wales. At the beginning of 2014, work began on the VWT's Pine Marten Recovery Project. The long-term objectives of the project are to help restore pine martens throughout England and Wales where conditions are suitable. A detailed feasibility study was carried out to determine if and where it would be appropriate to use translocations as part of the conservation strategy for this species (MacPherson *et al.* 2014). Modelling was used to identify regions with large amounts of suitable habitat, based on environmental variables that are correlated with pine marten presence elsewhere in the UK and in Ireland. The results suggest that central Wales is highly suitable for pine marten translocations because of the large area of well-connected woodland habitat, low risk of mortality and high potential carrying capacity for pine marten. There is recent, DNA confirmed, evidence of pine martens persisting in this region (in 2007 and 2012), so translocations here will constitute population reinforcement, rather than a reintroduction.

An initial two year pilot reinforcement is planned to commence in autumn of this year. Healthy, adult pine martens will

be translocated from robust populations in Scotland, to increase both the numbers and genetic diversity of the marten population in Wales. The animals will be monitored and studied intensively for a long period following release, which will provide a huge amount of information to inform subsequent reintroductions elsewhere. Work has begun collecting baseline data to enable long-term monitoring of potential impacts from pine marten releases on other species present, including grey squirrels.

There is more woodland in the UK now than there has been for centuries and the return of the pine marten, whether through the natural recovery seen in Ireland and Scotland, or by reinforcement/reintroduction as proposed in Wales and England, has potential benefits for forestry. Pine martens are a native component of our woodland ecosystems that has been lost from most of southern Britain, so the biodiversity benefits of restoring viable populations here are high. It is recognised that diverse forests provide a range of benefits and are more resilient to changing environmental conditions (UK Forestry Commission 2011), and many commercial forest management plans now aim to increase structural and species diversity to promote sustainability of forest ecosystems. The pine marten can be considered a flagship woodland species, and a viable population of pine martens will be a good indicator of more naturally structured and biodiverse forests.

**Dr Jenny MacPherson**

The Vincent Wildlife Trust, 3-4 Bronsil Courtyard, Eastnor, Ledbury, Herefordshire

**Huw Denman**

SelectFor, Y Winllan, Brechfa, Carmarthenshire

## REFERENCES

- BIRKS, J.D.S., MESSENGER, J., 2010. Evidence of Pine Martens in England and Wales 1996-2007. The Vincent Wildlife Trust, Ledbury.
- LANGLEY, P.J.W., YALDEN, D.W., 1977. The decline of the rarer carnivores in Great Britain during the nineteenth century. *Mammal Review* 7, 95-116.
- MACPHERSON, J.L., CROOSE, E., BAVIN, D., O'MAHONY, D., SOMPER, J., BUTTRISS, N., 2014. Feasibility assessment for reinforcing pine marten numbers in England and Wales. The Vincent Wildlife Trust, Ledbury.

MAROO, S., YALDEN, D., 2000. The mesolithic mammal fauna of Great Britain. *Mammal Review* 30, 243–248.

MITCHELL-JONES, A.J., AMORI, G., BOGDANOWICZ, W., KRYSZTOFEK, B., REIJNDERS, P., SPITZENBERGER, F., STUBBE, M., THISSEN, J., VOHRALIK, V., ZIMA, J., 1999. The atlas of European mammals. Academic Press Inc., San Diego.

O'SULLIVAN, P.J., 1983. The distribution of the Pine marten (*Martes martes*) in the Republic of Ireland. *Mammal Review* 13, 39–44.

O'MAHONY, D., O'REILLY, C., TURNER, P., 2012. Pine marten (*Martes martes*) distribution and abundance in Ireland: A cross-jurisdictional

analysis using non-invasive genetic survey techniques. *Mammalian Biology-Zeitschrift für Säugetierkunde* 77, 351–357.

SHEEHY, E., LAWTON, C., 2014. Population crash in an invasive species following the recovery of a native predator: the case of the American grey squirrel and the European pine marten in Ireland. *Biodiversity and Conservation* 23, 753–774.

UK Forestry Commission, 2011. The UK Forestry Standard: the Government's approach to sustainable forestry, In Edinburgh: Forestry Commission.

## Lac-Saint-Jean Model Forest publishes guide book on traditional Aboriginal medicinal plants



Participants in the Lac-Saint-Jean Model Forest discuss the project

Since time immemorial, plants have served people around the world for food, shelter, transportation and healing purposes. Today, the boreal forest is still a source of many products we need for survival.

The Lac-Saint-Jean Model Forest is located in the heart of the great Canadian boreal forest in Eastern Canada. It operates under a unique and innovative partnership in which Aboriginal and non-Aboriginal participants have equal responsibility. The region is home to the Innu community of Mashteuiatsh, one of the largest Aboriginal groups in Quebec and made up of nine First Nations, including the Pekuakami.

The Model Forest recently published a guidebook, *Savoirs des Pekuakamiulnuatsh sur les plantes médicinales* (Pekuakami First Nation knowledge on medicinal plants), which documents Aboriginal traditional knowledge with respect to cultural and medicinal practices related to the use of plants by the Pekuakami First Nation.

The guidebook highlights 27 plants in the region. The project meets an urgent need to document traditional knowledge and practices that are at risk of disappearing. It also helps to ensure access and transmission of the traditional knowledge of Aboriginal peoples.

The project originally began as research for a Master's thesis by Géraldine Laurendeau (who studied Ethnology at Laval University in Quebec) for the *Association du Parc Sacré*, a non-profit organization that works to collect and disseminate traditional knowledge of medicinal plants in the region. In her thesis, she reveals:



*Savoirs des Pekuakamiulnuatsh sur les plantes médicinales* (Pekuakami First Nation knowledge on medicinal plants)

*Knowledge on the healing properties of Native Plants has been passed down from generation to generation for hundreds of years, and often acquired through a long process of trial and error. The use of pine gum and spruce to treat cuts, burns, abscesses and to make potions against coughs are practices still in use today in Pekuakamiulnuatsh, as revealed by interviews with elders.*

Ms. Laurendeau began the research in 2010 using interviews and plant identification excursions in the forest carried out with

the participation of traditional knowledge bearers and community elders.

In June 2013, the Lac Saint-Jean Model Forest organized a symposium titled, *Traditional Knowledge and Indigenous Territory*. The event, which was attended by over 200 people from across North America, offered an opportunity to enrich relationships between researchers, professionals and community members interested in documenting traditional knowledge and practices.

The research team collected information on 84 plant species and, in addition to the guidebook, developed a database with more detailed information on each plant. 1000 copies of the guidebook were published. Serge Harvey, General Manager of the Lac-Saint-Jean Model Forest, explains, “We will distribute 500 books, free, to community members. The profits from the sale of the remaining books will go to the Mashteuiatsh Native Museum in Mashteuiatsh, Québec to cover the costs of holding the collection of associated archives and making the database available to the community.”

Through research, experimentation and communication, the Lac-Saint Jean Model Forest is committed to developing tools,

knowledge and skills to enable communities to promote and integrate new practices in the development of the region.

#### For More Information:

- *Sacrées Plantes*: A video documentary outlining the project (in French): <https://www.youtube.com/watch?v=oss-IRxQdIk>
- Lac-Saint-Jean Model Forest website: <http://www.foretmodeledulacsaintjean.ca/en/index/>
- Mashteuiatsh Native Museum website (in French): <http://www.museeilnu.ca/>
- Association du Parc Sacré Facebook page: <https://www.facebook.com/pages/Association-du-Parc-Sacr%C3%A9-Kanatakulietsh-Uapikun/222091441217343>

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## Understanding First Nations perspectives on the use of herbicides in forestry in northeastern Ontario, Canada<sup>1</sup>



*The Chapleau River (northeastern Ontario) on an April morning*

A beautiful picture to many of us but to Lark Ritchie, Chapleau Cree, “it shows the activities that happened here, there are memories of my grandfather, my father, my brothers, and friends... and within the range of this one photo, there are many stories... I can tell you stories about almost every piece of land and water you can see... There is something about that first trip on the water, of rounding familiar bends, of re-acknowledging the beaver houses, and the old campgrounds, of comparing the water-levels to other years, and re-entering the new season, familiar, yet totally new” (excerpt from <http://www.kamazooie.com/profiles/blogs/a-re-post-from-my-old-geocities-website-the-music-of-spring>). The land, the natural environment and all it contains, is home. Photo by Lark Ritchie

In Ontario, Canada aerial application of registered herbicides in forestry (glyphosate is the most commonly used) is a standard silvicultural practice as an effective tool for vegetation management which, when used properly, are safe from both negative ecological and human health impacts (Swift and Bell 2011). However, the use of chemical herbicides for silvicultural purposes has been met with opposition from many First Nations communities who feel that there are negative effects of herbicides on human and ecological health. Since First Nations in Canada hold particular rights in relation to forested lands as specified under the Canadian Constitution, traditional title, negotiated treaties, and legal decisions, consultation and accommodation of First Nations must be considered a fundamental building block for sustainable forest management in Ontario (Stevenson and Webb 2003).

First Nation peoples holding traditional worldviews have added reasons for opposition to herbicides based upon their worldview and perception of land as home (Kayahara and Armstrong 2015). A first step toward reconciling the two opposing positions on herbicide use in forestry should be to improve the understanding of First Nation perspectives concerning herbicide use among forest practitioners<sup>2</sup>. Without this understanding it

<sup>1</sup> This article is a summary of Kayahara, G.J. and C.L. Armstrong. 2015. Understanding First Nations rights and perspectives on the use of herbicides in forestry: a case study from northeastern Ontario. *Forestry Chronicle* 91 (2): 126–140. Copies of the paper, which includes a full list of references, can be obtained from the authors Gordon Kayahara [gordon.kayahara@ontario.ca](mailto:gordon.kayahara@ontario.ca) and Carly Armstrong [carlyarmstrong@trentu.ca](mailto:carlyarmstrong@trentu.ca)

<sup>2</sup> By “forest practitioners” we are referring to anyone involved with any aspect of herbicide spraying from chemical manufacturers, to government regulators, to forest managers, to field foresters applying herbicides for vegetation management.



will be difficult for forest practitioners in Canada to claim that the use of herbicides is based upon a fully informed decision.

### Land as home

To forest practitioners, herbicide spraying is thought to occur in relatively remote, uninhabited areas away from anyone's home. Whereas to First Nations living in communities, the land encompasses not only the physical ground beneath a person's feet but also the air, water, vegetation, fauna, and the associated relations among and within. A substantial number of First Nations people rely on the land for food stuffs obtained through hunting, fishing, and gathering, and these staples may then be shared within their communities (LeBlanc *et al.* 2011; Wyatt *et al.* 2011). Land also provides people with a place of reference to remind them who they are and provides substance to life's experiences and how to relate to all things (Fixico 2009); specific places, locations, and the ancestral stories associated with them are viewed as integral to the present and future (McLeod 2007). Thus one's relationship with the land is really a relationship with home and an integral part of one's whole existence. Under this conception of land and home, herbicide spraying is viewed by First Nation community members that outsiders are "*spraying on top of us*."<sup>3</sup>

Despite historical attempts by the Canadian government to replace the First Nation traditional worldview with the prevailing European worldview of the time through the imposition of residential schools upon First Nation children (Milloy 1999; TRCC 2015), the traditional way of life still remains strong. The photo above shows four sacred plants, tobacco, sage, sweetgrass and cedar, and the sacred pipe. Many First Nations communities feel that their unique relationship and attachment to wild plants for food, medicine, and ceremonial purposes are insufficiently recognized and protected (Mitchell 1998; Wyatt *et al.* 2011). Under traditional teachings, herbicide spraying is seen to go against the teachings of responsibility and reciprocity. "*This inherent responsibility to care for the land is inherited with the gift of land and life from the Creator. Fish, trees, plants, berries ... signed sort of a covenant that they would give to the humans to help them to live but they [humans] had to manage things in a good way, so all will not disappear. How can the plants and animals, birds, fish take care*



<sup>3</sup> Lark Ritchie, Chapleau Cree First Nation, quoted in Kayahara and Armstrong (2015).

*of us when the humans have taken everything for profit?*" Archie Nolan, Traditional Elder, Missanabie Cree First Nation (quoted in Kayahara and Armstrong 2015). Photo by Archie Nolan.

### The First Nation traditional worldview

For those holding a traditional First Nation worldview<sup>4</sup>, much opposition to chemical herbicides can be related to the incongruity of the practice with this worldview. First, traditional First Nations feel a special responsibility to continue caring for the land, generation after generation, the stewardship principle reflecting a spiritual connection with the land (Alfred 2009). There is a sense of responsibility that the land will take care of humans but in turn humans have to ensure the land is cared for, a covenant of "reciprocity" (Kimmerer 2014). Using herbicides in forestry without reference to spiritual connections is seen as an affront to responsibility for taking care of and respecting relationships with all things, and an affront to the understanding of reciprocity. Disrupting the natural processes of an inherited gift is seen as an extreme devaluation of nature (Alfred 2009) and considered irresponsible. While it is one thing to kill for survival, killing without reverence is seen as a spiritual mistake (Laduke 1999).

This forest plantation was treated with an aerial application of glyphosate as a vegetation management objective of killing the overtopping trembling aspen (*Populus tremuloides*) and releasing the spruce (*Picea* spp.). First Nations following traditional beliefs oppose this practice. Nature, far from being sacred, is reduced to a commodity object to be controlled using herbicides. "*Life begins with the Creator; therefore all life forms must be respected equally. Herbicide application goes against the hoop of life by deeming certain life forms as "weeds" which are then killed by chemicals to make way for commodity production of conifer species.*" – Archie Nolan, Traditional Elder, Missanabie Cree First Nation (quoted in Kayahara and Armstrong 2015). Photo by Rongzhou Man.

Second, traditional First Nations do not necessarily feel that science is wrong but that the western materialistic worldview



<sup>4</sup> The term "traditional" can be misleading, because it may imply that the culture is somehow static, caught in the past. Like other cultures, First Nations cultures change through time, except that there is a colonial history of a systematic imposition of outside beliefs. As such the term "traditional" in context of this paper refers to a pre-contact-based worldview additionally shaped by post-contact influences.

that science operates under is too narrow. Within a western materialistic worldview, herbicide safety is judged only on physical effects, using scientific experimentation. Within the traditional First Nation worldview, herbicide objections are based upon a combination of the physical and metaphysical to achieve a balanced relationship with the land (Bird 2005, 2007; Fixico 2009). Gaining knowledge within a traditional First Nation worldview involves observing and analyzing everything holistically using mind, spirit, emotion, and body (Regan 2010), the four realms of the medicine wheel<sup>5</sup>. Concerns over herbicide use by First Nation people holding a traditional worldview base their opposition to herbicides on all four realms in a cumulative synthesis of “becoming” nature (Watson and Huntington 2008).

First Nations object to the presumption that they are expected to accept the primacy of western science on herbicides, to the exclusion of their own knowledge, experiences, and concerns. This imposition is seen as disrespectful, invalidating or dismissive of their core belief system. Rather, there needs to be a realization that both ways of gaining knowledge should be accorded respect

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<sup>5</sup> This balance can be expressed through the Medicine Wheel representing the alignment and continuous interaction of the physical, mental, spiritual, and emotional aspects of human nature that must be cultivated within us and used to make decisions.

and treated on equal-footing, and both are actually complementary (Cheveau et al. 2008; Uprety et al. 2012).

### **First Nation worldview as a source of diversity**

First Nation opposition to the use of herbicides in forestry is not necessarily about wanting to return to a past life but rather largely about needing a better attitude towards the earth. Traditional First Nation perspectives offer us a way of moving towards greater balance and harmony (Laduke 1999; Atleo 2004, 2011). Thus First Nation opposition to herbicide use should not be seen as sources of disagreement or conflict, an impediment to “progress”, but rather as sources of diversity and enrichment based upon the spirit to share and co-exist in peace.

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## **Forests delivered by courier**



*BioCarbon Quadcopter*

**B**ack in September 2013, I reported that aerial survey drones had come to Oxford (*Wings over Wytbam*), concluding with comments on the burgeoning technology of quadcopters. The use of these small hovering aircraft – typically with four rotors (hence the name) – is developing even quicker than expected. Now, a new company, based in the university city, is planning to take full advantage of them to combat deforestation, not only by carrying out aerial surveys, but also actually planting trees, and then monitoring their establishment.

In May, I had the opportunity to meet CEO Lauren Fletcher of BioCarbon Engineering over coffee in a café full of chattering

students, and he explained in detail what his multi-disciplinary team is expecting to achieve. It was certainly a wide ranging vision, as their motto suggests “We’re going to change the world, one billion trees at a time”. Although this might sound a wild claim, I came away from our encounter impressed at the thought and expertise that has gone into this project so far. This is a technology to watch with great interest.

The use of unmanned aerial vehicles (UAVs) to carry out surveys is becoming well tried and tested. The UAVs used over Wytbam were conventional winged aircraft which have limitations in having to fly forwards all the time, at an altitude free from obstructions. Hovering drones bring many advantages. They can get up close and stationary, and fly around or through things, backwards if needed, with great precision, using a range of orientation, altitude, and GPS sensors. On the downside, flight times are limited by battery life. Thus the detailed pre and post planting surveys envisaged by BioEngineering are the (relatively) easy part.

What’s much more difficult is to do the physical tree planting using the same drone. Airborne seeding or planting is not new. But with conventional aircraft or helicopters it is very much a scatter-gun approach, tending to be imprecise, expensive and with low survival rates. In theory, small multicopters can change all this. To that end, BioCarbon Engineering are testing out an onboard compressed-air planting gun that fires biodegradable nutrient-filled pellets containing pregerminated seeds surrounded by water absorbing gel. The quadcopter takes aim, after final selection of a suitable spot, from a height of a few metres, embedding the pellet up to several centimetres into the ground. Success of this is key to the whole venture.

Any practicing forester will immediately realise that there are many variables to contend with here which will determine if such sowing/planting will be successful – species, seed type and size, pellet design, soil type, vegetation cover, topography, moisture, etc. But it appears from preliminary lab tests that the technique can be effective and efficient. Survival rates up to 70%, at 15% of the cost of conventional methods are estimated. With a planned planting rate of 10 pellets per minute, this would certainly speed up planting, particularly on inaccessible sites. At the moment, the UAVs being tested have a capacity for 500 pellets, before needing to be recharged (pellets, compressed air and battery). If “swarms” of several self-regulating drones are used, then productivity can be even higher.

The potential constraints don't stop at the technical, of course. Lauren Fletcher, unprompted, raised many of the wider issues that any modern forester involved in re and afforestation would query. What about the variety of species to be used – not just for monoculture using eucalyptus or pines? What about the social dimension of tree planting in rural communities? And the political and security issues of flying such machines? The list is long, but it appears that the BioCarbon team are aware and are taking them into consideration as they try, test and eventually transfer the technology.

One objection is that it's far too advanced and not appropriate for use in developing countries, where there is most need for ecosystem restoration. But in its defence, I can think of two major responses to this. One is that the technology is ubiquitous, cheap, and should be easily maintained. The electronics are found in all smart phones. And these same phones have revolutionised communication, banking, social networking etc. for rural communities in developing countries. Perhaps quadcopter technology will do the same for physical transport and delivery in remote areas, as it is doing elsewhere.

So – this technology may seem far-fetched, and many “Yes, but...” objections can and have been raised. But if it is to work,

the range of expertise covered by Lauren Fletcher and his multidisciplinary team (they embrace space engineering, environmental policy, global governance, business management, as well as forestry) stand the best chance of making it a practical reality. Certainly other people think so. Their project was short-listed in the top three proposals for the recent UAE Drones-for-Good competition in Dubai, and they have won a Skoll Venture Award for social-entrepreneurship. More recently, they won the grand prize in the global start-up competition Hello Tomorrow Challenge, and an award from Foundation.org/CISCO. As well as such grants, they expect to generate their own income as they move into consultancy and implementation.

Fletcher (who worked with NASA) bashfully admitted that he had his “Aha!” moment for this project when younger and reading a sci-fi story. In it tree-eating aliens had reforested the whole Arabian peninsula using machine gun planters! It's not the first time that science fiction has become fact! As we know, drone technology has developed from military use and is viewed with suspicion in many quarters. Let's hope that this new venture will create support and be successful in adding to the peace-time arsenal of weapons at our disposal to combat ecosystem degradation and climate change.

You can follow progress on BioCarbon's website at <http://www.biocarbonengineering.com/>, and also on Facebook: <https://www.facebook.com/biocarbonengineering> and Twitter <https://twitter.com/biocarboneng>. Lauren and his team are keen to build up their links to the forestry profession (as they are doing here with the Oxford Centre for Tropical Forests and their associates), and learn from all our experiences. So follow them on their sites – they will welcome feedback (of the constructive kind). Lab testing is currently underway, and full field testing will start from September onwards. I, for one, look forward to seeing delivery of the forests!

**A Marcus J Robbins**  
Treasurer, CFA

## The Charter of the Forest

Most of us have heard of the Magna Carta, that “Great Charter” which England's barons forced their oppressive King John to sign. It is often quoted as forming the basis for the liberty of the citizens of England and it formed one of the foundation documents of the Constitution of the USA in 1776. Some of us may even know that the 800<sup>th</sup> anniversary of the signing of the Magna Carta falls in June 2015. But in fact, apart from the laws concerning *Habeas Corpus*, which defined how long any person could be kept in custody without being sent for trial nearly all of the other provisions of the Magna Carta dealt with the rights of the barons – not those of the common man.

The Charter of the Forest (*Carta de Foresta*) on the other hand, provided some real rights, privileges and protection for the common man, especially against the erosion of those rights of access to forest land that had been practised by William the Conqueror and his descendants (William II, Henry I, Stephen, Henry II, Richard I, and John) and increasingly by the aristocracy. The Charter of the Forest was sealed in November 1217 by the young King Henry III and by William Marshal, 1<sup>st</sup> Earl of

Pembroke who was acting as regent to the king. It was complementary and a companion document to the Magna Carta, which aimed to redress some of the Anglo-Norman provisions which had been illegally extended and abused by William I's son Rufus.

The provisions of the Charter of the Forest required the King to “disafforest” – that is, give up his possession of forest land, not deforest it. The forest land might or might not have trees standing on it; it could have been heath. But the main thing was that commoners had access to the royal private lands, because in those days in England, as in many developing countries today, forests were the main source of woodfuel for domestic cooking and heating and for industries. Besides the collection of firewood (*estover*) there were also rights of *pannage*, or pasture for pigs, *agistment*, grazing for domestic animals and *turbary*, the cutting of peat or turf for fuel. The right of access for these functions is still important to people in developing countries who live near government reserved forests today.

The Charter repealed the death penalty for killing deer for venison, and the penalty of mutilation as a lesser punishment,

although transgressors were still liable to a fine or imprisonment. Verderers' Courts were established to enforce the provisions of the Charter, and these courts still exist today in the New Forest in southern England, the Forest of Dean in south Wales and in Epping Forest which lies north-west of London. The verderers, whose name comes from the Norman *vert* (green), dealt, and still deal, with minor offences and day-to-day administration of their respective forests, although nowadays their role has changed to take account of the National Park status of the New Forest and the presence of fallow deer in the Forest of Dean.

The provisions of the Charter applied only to England and Wales until 1707 when the Act of Union between England and Scotland introduced the rights north of the border. In fact, the Charter was the statute that remained in force longer than any

other in England, from 1217 until 1971, when its provisions were superseded by the Wild Creatures and Forest Laws Act.

### Acknowledgements

My attention was drawn to the Charter of the Forest by a recent letter in the correspondence columns of the UK-based weekly *The Economist*; before that I was quite unaware of its existence. My article was then drawn largely from the relevant entry in Wikipedia, to which grateful acknowledgement is made.

**Jim Ball**  
CFA President

## Two interesting trees

I recently came across two interesting trees: the first, while travelling in southern England, the Tolpuddle sycamore, under which the predecessors of the trades union movement sat, the second a South African *Combretum* from the bark of which a new anti-cancer drug has been prepared.

### The Tolpuddle Sycamore

Tolpuddle is a picturesque village with many thatched cottages in the county of Dorset on the River Piddle, which has become globally famous because of the story of the Tolpuddle Martyrs.



*Tolpuddle Martyrs sycamore*

It was under a sycamore tree in 1834 that six farm labourers led by a Methodist lay preacher George Loveless met to form a union in an effort to resist further reductions in their wages. The situation arose because of the gradual lowering of agricultural wages in the 1830s caused by the surplus of labour at a time when mechanisation was beginning to have an impact on agricultural working practices. In Dorset farmers did not have to compete with the higher wages paid to workers in London and in the northern towns experiencing the Industrial Revolution and the Martyrs refused to work for less than 10 shillings a week – although by this time wages had been reduced to seven shillings a week and were due to be further reduced to six shillings. Although trade unions had been legal for the past ten years, they were arrested taken to Dorchester where they were tried for administering a secret oath found guilty and transported to Australia to serve a seven year sentence. But there was such a public outcry at the injustice of the sentence with a massive demonstration in London and an 800,000 strong petition delivered to Parliament that in 1839 the men were granted a free pardon to return to England. Each July thousands of people come to Tolpuddle to celebrate trade unionism and to remember the sacrifice made by the six farm workers of the village.

The sycamore, which is believed to be more than 300 years old and is the property of the National Trust, still stands and as can be seen from the photo is still in good health. In 2014 a pollarding of the branches was carried out, to encourage new, more vigorous growth which, it is hoped, will permit the tree to live for another 200 years at least.

### A new anti-cancer drug, from a South African *Combretum*

*Combretum caffrum*, the South African bushwillow, has recently featured in an article in the Economist of 11th July 2015, in which it is reported that one of the isomers of combretastatin A-4 may be very effective at preventing the division of cancerous cells.

How it works is a little complicated. Uncontrolled cell replication is the underlying cause of cancer, and cell replication occurs after “microtubules” (themselves parts of the internal skeleton of the cell) form themselves into a spindle, thus permitting the cell’s chromosomes to split into two new bundles. Thus any drug that can interfere with the formation of tubules in cells is

of great interest to oncologists and indeed a number of chemicals are already known that can do this – but they interfere with the formation of tubules in healthy cells as well as unhealthy ones. Two German chemists, Drs Oliver Thorn-Seshold and Dirk Trainer, have been working on drugs that can be switched on or off using light, and thus by pointing a light at the diseased point would ensure that the drug was released only where it could act. Unfortunately, once released the drug can either be controlled nor recalled.

So the researchers looked for a tubule destroyer that was light-sensitive and could be switched on or off. They found it in the bark of the South African bushwillow in the form of a group of chemicals called combretastatins, which themselves likely protect the tree from pests or diseases.

Specifically they have looked at two of the isomers of combretastatin A-4, only one of which is effective in disrupting tubule activity, and that by replacing two of the C-atoms with N-atoms they could convert one isomer to the other by using a blue light beam.

Now it remains to be seen whether the laboratory tests can be transformed into an actual treatment for cancer. Doubtless if it proves successful the chemicals will be synthesised, rather than being collected from trees in the field, but the work is yet another reminder of the importance of plant species as sources of medical drugs.

**Jim Ball**  
CFA President

## Forestry governance in Brazil – 1912–2015: a brief history

**D**ue to its intertropical location allied to its great territorial extension Brazil is endowed with a great diversity of forestry resources that ranges from tropical rainforest to sub-tropical forest. These forest resources cover about 54.4% of its territory. Along the Brazilian history the governance of these resources has been focused on a juridical protection through an expansive legislation in order to orient and regulate the use of these resources. This tendency can be traced to the early stage of the Brazilian colonization when the Portuguese Crown issued the “Brazilianwood Ordinance” in 1605 and a similar pattern is still present, at present, when legal pieces continue to be issued. However, it is fair to assume that despite of such concern it per se has been unable to stimulate an actual forest policy. A deep discussion of this legislation is fair beyond the scope of this paper.

Allied to concern to promote a juridical protection the Brazilian Government has look for a governance model through the creation, extinction, incorporation and division of governmental organizations. It is fair to assume that this process has been linked to political and economic contexts. It is interesting to note that these organizations have been sometime focused on a particular species as it is the case, for example, of the Rubber Development Superintendence (SDB) that was in charge of the policy in general of the rubber tree (*Hevea brasiliensis*) or National Pinus Institute (INP) that used to be in charge of the policy in general of the Brazilian Pinus (*Araucaria angustifolia*). Other time these organizations have been focused on the forest resource as a whole as it is the case, for example, of the Brazilian Forestry Development Institute (IBDF) and the

Brazilian Forestry Service (SFB). At present it has been a mixed of organizations, such as Environment and Renewable Natural Resources Brazilian Institute (IBAMA) that is in charge of forest resources as well as the environment as a whole and on the other hand the Brazilian Forestry Service (SFB) that is in charge specifically on forest resources. In short, it is fair to infer that the Brazilian Governance of its forest resources is a complex matter and that up to now it has been unable to develop or establish an organizational model able to promote an actual forestry development that encompasses preservation and economic use of its forest resources. It has noted in the last decades a move from a utilitarian use of the forest resources to a preservation emphasis and, unfortunately, it has been unable to find an equilibrium point between these two extremes. In fact this is the great challenge to be overcome.

Finally it should be taking into account that from 1988 with the issue of the new Federal Constitution it is in course a process of decentralization that transfer to States and Municipalities the governance of their own forest resources. As such, local legislation and institutions have been established in order to assume the duties under this new legal context. So, it is important to call attention that the table below refers only to Federal Institutions that were established and extinguished along the years.

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# Publications

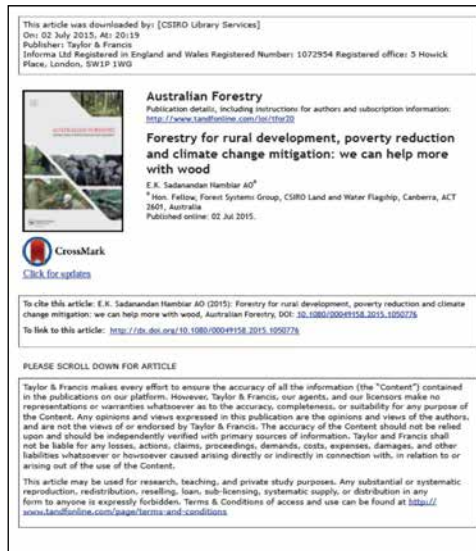
## Forestry for rural development, poverty reduction and climate change mitigation: we can help more with wood

Paper by E.K. Sadanandan Nambiar

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**F**orests are a renewable resource and wood is a valuable and sustainably useable product that contributes to national economies.

This value from the forests can be realised in harmony with the functions of forests in the global carbon cycle and as long-term carbon repositories as well as providing other environmental values. This important understanding is missed or ignored in many global forestry forums. After more than two decades of so-called 'pro-poor' forestry policies backed by large amounts of research preferentially targeted to advance non-timber forest products and payment for ecosystem services including Reducing Emissions from Deforestation and Forest Degradation, it is difficult to find evidence to back any contention that in any tropical region they have advanced the economic status of forest-dependent or rural communities enabling them to come out of poverty in an enduring way. It is argued here that the sustainable management of native and planted forests,



including wood production and processing in rural regions, and greater use of wood products by all of us, can play a much greater role than has been recognised so far for dealing with two major interrelated global challenges. These are poverty reduction in rural forest landscapes, notably in the subtropics and tropics, and to make modest contributions to climate change mitigation globally, especially by recognising the roles of both forests and wood products in the carbon cycle. It is time for a revised narration in the global agenda to raise the potential role of forests as a sustainably manageable resource, free from overzealous calls for forest conservation, but with a more balanced and holistic recognition of the contributions

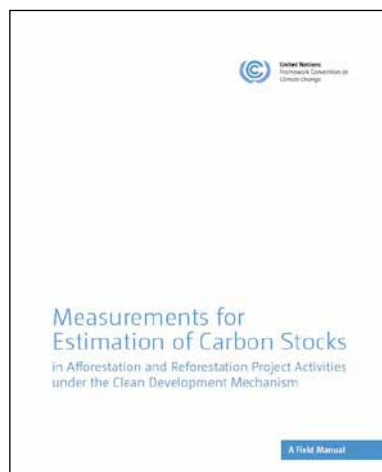
that forests, forestry and the wood-products sector can make to economic and social development. This should be brought effectively into the deliberations of the forthcoming UN Sustainable Development Goals. This would require efforts by the UN and other bodies to bring the private and public sectors into symbiotic partnerships, not as opposing forces as has often been the case.

For copies of the paper contact the author at Sadu.Nambiar@csiro.au

## Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism: A Field Manual

UNFCCC

**A** new publication titled *Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism: A Field Manual* has been published on the UNFCCC website. This manual is intended to serve as a guide for conducting measurements for estimation of carbon stocks in afforestation and reforestation project activities under the clean development mechanism. The manual brings together comprehensive guidance on forest inventory designs and field measurement procedures. Use of the manual will facilitate the task of



developing standard operating procedures for field measurement of carbon stocks during monitoring of A/R CDM project activities.

The manual is not a regulatory document and does not contain any new requirement beyond the requirements prescribed in the approved CDM methodologies and tools. Instead, the manual provides guidance on meeting the requirements prescribed in the methodologies and tools while enhancing consistency and quality in monitoring reports of registered project activities.

This is the second UNFCCC manual on A/R CDM project activities. The first A/R CDM manual titled *Afforestation and Reforestation Projects under the Clean Development Mechanism: A Reference Manual* was published in 2014. The earlier manual

aims to assist project participants in the development and registration of A/R CDM project design documents.

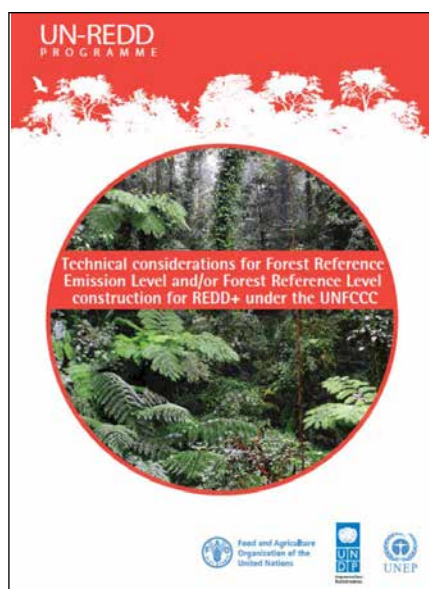
Download the document at [http://unfccc.int/resource/docs/publications/cdm\\_afforestation\\_field-manual\\_web.pdf](http://unfccc.int/resource/docs/publications/cdm_afforestation_field-manual_web.pdf)

## Technical considerations for Forest Reference Emission Level and/or Forest Reference Level construction for REDD+ under the UNFCCC

FAO/UNDP/UNEP

The UN-REDD Programme is pleased to announce the release of a new publication: *Technical considerations for Forest Reference Emission Level and/or Forest Reference Level construction for REDD+ under the UNFCCC*.

The aim of this publication is to support countries seeking to develop a REDD+ Forest Reference Emission Level and/or Forest Reference Level (FREL/FRL)



under the UNFCCC with additional technical knowledge. The document provides a structural overview of UNFCCC requirements for FREL/FRL construction, summarizing UNFCCC guidance and translating it into elements needed for FREL/FRL construction. A description of possible advantages and risks associated with different options for each of these elements is added to provide some practical considerations to FREL/FRL construction.

The publication can be downloaded at <http://www.unredd.net>

## Understanding Long-Term Impacts in the Forest Sector: Predictive Proxy Indicators

PROFOR

Worldwide, an estimated 1.3 billion people – the majority of whom subsist on less than \$1.25 per day – depend directly on forests for their livelihoods. Therefore, it would seem clear that programs to restore and maintain forests must also contribute to poverty alleviation. But is this true, and if so, how do we know?

On one hand, there is increasing demand for better evidence on program effectiveness, including in the forestry sector. On the other hand, many programs – particularly those focused on natural resource-based development – can only be assessed properly by looking at long-term outcomes. As a result, there is a mismatch between the urgency with which global poverty and deforestation issues need to be addressed, and the time that it takes to get results.



To help close this knowledge gap, a World Bank team received PROFOR funding to develop a set of Predictive Proxy Indicators (PPIs) – measures of progress made while a project or policy is still ongoing, but that provide a forecast for a longer-term impact. PPIs are often used in other fields: for example, education level is widely used as a predictor for future earnings. But use of PPIs is a new development for the forestry sector, with the potential not just to measure the impacts of forestry programs on poverty reduction and economic growth, but also on other important development outcomes, such as biodiversity conservation, climate change mitigation and adaptation, and good governance.

Download the report at [http://www.profor.info/sites/profor.info/files/publication/PROFOR\\_WrkingPaper\\_PPI.pdf](http://www.profor.info/sites/profor.info/files/publication/PROFOR_WrkingPaper_PPI.pdf)

# The context of natural forest management and FSC certification in Indonesia

CIFOR

Management decisions on appropriate practices and policies regarding tropical forests often need to be made in spite of innumerable uncertainties and complexities. Among the uncertainties are the lack of formalization of lessons learned regarding the impacts of previous programs and projects.

Beyond the challenges of generating the proper information on these impacts, there are other difficulties that relate with how to socialize the information and knowledge gained so that change is transformational



and enduring. The main complexities lie in understanding the interactions of social-ecological systems at different scales and how they varied through time in response to policy and other processes.

This volume is part of a broad research effort to develop an independent evaluation of certification impacts with stakeholder input, which focuses on FSC certification of natural tropical forests.

Download free at [http://www.cifor.org/publications/pdf\\_files/OccPapers/OP-126.pdf](http://www.cifor.org/publications/pdf_files/OccPapers/OP-126.pdf)

# Making forest conservation benefit local communities: participatory forest management in Ethiopia

Farm Africa

A new report released by international development charity Farm Africa shows promising results for the Participatory Forest Management (PFM) approach to forest management that emphasises joint partnerships between local forest communities and government.

Farm Africa's report, *Making forest conservation benefit local communities: participatory forest management in Ethiopia*, outlines how PFM is proving successful in giving local people an economic incentive to sustainably manage and protect forests.

Satellite imagery from Chilimo, Ethiopia, where Farm Africa's first PFM pilot was launched 20 years ago, confirms that not only has deforestation been halted, but forest condition has actually been restored. Farm Africa introduced PFM to replace command and control approaches to protecting forests and rangelands, which failed to control deforestation and habitat destruction. Instead of trying to protect forests by keeping people out or encouraging them to do other activities, PFM encourages local communities to manage forests sustainably and profitably by setting up forest-friendly businesses.



Dr. Mulugeta Lemenih, Farm Africa's Head of Forestry and one of the report's authors, commented: "In the PFM model, forests are now actively managed, rather than protected, and communities are granted legal rights to produce and market forest products on a sustainable basis." Claire Allan, Farm Africa's Head of Programme Quality & Impact and co-author of the report, added: "Finding ways to make forests pay is a win-win situation. Not only do local communities reap dividends from profitable forest-based enterprises such as producing honey, mushrooms, raffia and wild coffee, but millions more people are protected from the devastating impacts of forest loss, such as loss of biodiversity, increased carbon emissions and a reduced water supply in lowland areas."

Today less than 4% of Ethiopia's land is forested, compared to around 30% at the end of the 19<sup>th</sup> century. Global land use changes, including deforestation, contribute nearly one tenth of global greenhouse gas emissions. Providing incentives to halt deforestation, as PFM does, is an important part of the global climate change agreement.

*Making forest conservation benefit local communities: participatory forest management in Ethiopia*, is available to download from <http://www.farmafrica.org/pfm>.



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# Around the World

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## Bhutan breaks Guinness record for tree planting

A team of 100 volunteers in Bhutan has set a new world record by planting 49,672 trees in one hour. They smashed the previous record by almost 10,000 trees. It had been set by an Indian team three years ago.

Bhutan's planters gathered in the capital, Thimphu, for their feat, which Guinness World Records confirmed. The government of the mountainous Himalayan kingdom lays great emphasis on protecting the environment. Bhutan has more than 75% forest cover.

"The whole country is happy. Our world record shows that Bhutan's young generation wants a clean and green future. We will never compromise on that," tree planting event organiser Karma Tshering said.

The Buddhist nation of just over 700,000 people is sandwiched between India and China. It has tried hard to protect itself from the influence of the outside world, only permitting television and the internet just over a decade ago.

The tree record was welcomed by many on social media platforms in Bhutan. The official Twitter account of Guinness World Records retweeted the Bhutanese achievement.

Mr Tshering said that he and other volunteers planned the event in part because former King Jigme Singye Wangchuck

loves the environment and "we respect him for that". "He is marking his 60th birthday in 2015 and we thought what can be a better gift than planting so many trees in his honour?" Mr Tshering explained.

The team practised for more than a week – Sherub Dorji, one of the volunteers, said that helped build physical strength and also planting technique. The health of Bhutan's environment is one of the key indicators of the country's famed Gross National Happiness index. Senior Bhutanese journalist Namgay Zam says team members planted an average of eight trees each per minute on steep and unfriendly terrain.

"I was blown away," she said. "And we have our result: Almost 10,000 more than India's previous record of 40,885 trees in 2012. I am so proud of our planters."

Mr Tshering says he is confident the saplings will be looked after well because the volunteers have promised to look after them until they become bigger. Species planted include indigenous ones such as Blue Pine and Cypress. "We have pledged to work in groups for at least six years. I can't wait to see a forest in the area," Mr Dorji said.

**bbc.co.uk**

## Brazil's resettlement of farmers has driven Amazon deforestation

Smallholder farmers resettled to rainforests by the Brazilian government have played an unrecognised role in deforestation there – something researchers worry is continuing unabated.

Brazilian president Dilma Rousseff boasted in Washington DC last month that her government had reduced annual forest loss by two-thirds in the past decade, and would end it altogether by 2030.

Yet while overall deforestation has fallen, Brazilian researchers today reveal that the country's officials are still organising the large-scale migration of poor farmers who have been wrecking the rainforest.

While the government has clamped down on illegal forest clearance by big landowners running cattle ranches and soya farms, its social resettlement schemes to allocate land to the rural poor are doing more damage than previously estimated.

The researchers looked at four decades of satellite images of forest cover around the homes of more than a million migrants in some 1900 Amazon settlements established by the government's National Institute for Colonization and Agrarian Reform (INCRA) since 1970. They found "irrefutable evidence of rapid deforestation" after the settlers arrived.

Within the settlement areas, which cover roughly the size of the UK, half the trees have been lost, says lead author Maurício Schneider, a researcher at the Chamber of Deputies, the lower house of the National Congress in Brasilia. The resettlement areas cover 5.3 per cent of the Brazilian Amazon, but have been responsible for 13.5 per cent of deforestation since 1970.

"Agrarian settlements have been widely hailed as a socially responsible strategy to allocate land to the rural poor," says Schneider. "But INCRA's policy of giving settlers just a few hectares forces them to convert every inch of land to agriculture. Our research shows that the result is severe deforestation at the taxpayer's expense."

INCRA officials, who were unavailable for comment ahead of the paper's publication, have often argued that deforestation occurs before settlers arrive. But Schneider says the findings refute this.

Charles Clement of Brazil's National Institute of Amazonian Research in Manaus, says: "INCRA abandons the settlers as soon as they arrive. They seldom get guidance about how to manage Amazonian forests, so they try to practise the farming methods they grew up with. But they soon discover that the soils cannot sustain these methods, which leads them to carry out more deforestation."

Overall, Amazon deforestation is much reduced from a decade ago, says Schneider. But he and co-author Carlos Peres, of the University of East Anglia in Norwich, worry that the deforestation from resettled smallholder farmers will go on unabated. "The enforcement of environmental legislation tends to turn a blind eye to smallholders," says Peres.

Even though INCRA launched a green settlement programme aimed at curbing illegal deforestation by settlers in 2012, its effectiveness is yet to be assessed, Schneider says. To really address the problem, he adds, the government should stop moving people into forested areas. One solution would

be to switch settlement schemes from existing forests to former forests that are now degraded pastures.

Much of the Amazon forest has regrown after being cleared before European colonists arrived, but we should not bet on forest recovery this time round. "Pre-Columbian farming methods left soils more resilient and they included trees, so forest species could return rapidly to the plots," says Clement. "None of these conditions hold in modern farming."

newscientist.com

## DRC: 'Chaos' in Congo's logging sector

Little of the timber from the Democratic Republic of Congo that finds its way onto international markets can be considered legal, according to a pair of advocacy organizations that recently investigated the forestry sector in the country.

In rebuttal, the logging industry in DRC and the government itself have argued that, if anything, timber is still a largely untapped resource that should grow to fuel the impoverished country's development. According to data from the UN Food and Agriculture Organization (FAO) accessed through Global Forest Watch, the forestry sector was worth around \$85 million to DRC's economy, or about 0.6 percent of gross domestic product (GDP), in 2011.

Global Witness and Greenpeace published separate reports in the past month detailing the weak forestry oversight that, they contend, allows companies to shirk their social responsibilities to communities, harvest timber beyond the quotas set by their permits if they have them in the first place, and avoid paying taxes to the government, even as they ship the bulk of their harvest abroad to China, the U.S., and the EU.

A massive central African country roughly the size of the United States east of the Mississippi River, DRC is second only to Brazil in the area of the world's tropical forests – around 7 percent – it contains. And yet, the officials in charge of protecting those vast resources aren't doing their jobs, said Raoul Monsembula, coordinator of Greenpeace Africa's DRC program.

"The biggest problem is that the administration is not working at all," Monsembula told mongabay.com. "The logging companies know that and are doing what they want, as corruption is the norm now."

That corruption manifests itself as payments from logging companies to turn a blind eye to permit violations, underreporting how much wood they've cut, and not sticking to contracts signed with local communities, write the authors of the Greenpeace report, "Trading in Chaos." The results of third-party monitoring in Congo support these conclusions, said Essylot Lubala, coordinator of the monitoring group in DRC known by its French name, Observatoire de la Gouvernance Forestière, which is funded by the EU.

"The illegalities found in the forest sector and in other sectors stem from weak governance in general," Lubala told mongabay.com in an email. "This means that government officials in the DRC must make an effort to actually implement the laws that exist."

The Global Witness publication tabulated independent monitoring reports from 2011 to 2014 and found that all 28 visits to industrial logging concessions in DRC turned up questionable practices. However, Lubala did say that accreditation schemes, such as those set forth by the Forest Stewardship Council, have potential. "Increasingly we find that companies whose concessions are engaged in forest certification are beginning to make noteworthy efforts," Lubala said.

SODEFOR, a subsidiary of Norsudtimber based in Liechtenstein, is the largest timber company in DRC, operating around 2.3 million hectares – an area larger than Belize or the U.S. state of New Jersey. Spokesperson Filomena Amaral said that the company has "always complied" with forestry laws in DRC. (It is not a member of the Forest Stewardship Council.) Furthermore, Amaral said that government officials would have sanctioned SODEFOR had it broken the law.

Mongabay.com's request for comment from two other companies mentioned in the reports, Cotrefor and Siforco, went unanswered.

Amaral refuted the Global Witness claim that SODEFOR harvests timber without permission, saying, "It is unimaginable that the Congolese State allows a company to operate without a permit."

Global Witness was also critical of the harvest by SODEFOR and other companies of a highly valued species of tree called Afrormosia (*Pericopsis elata*), listed as a protected species by the Convention on International Trade in Endangered Species (CITES) and Endangered by the International Union for the Conservation of Nature. Also known as African Teak, it's commonly used to build boats and furniture, as well as for flooring. "Yes, SODEFOR sells Afrormosia, which is a protected species but the trade of which is not prohibited," Amaral told mongabay.com. "CITES sets standards that regulate its trade and that we respect."

But Global Witness points out that DRC has been banned from selling any CITES-protected species stemming from the country's problems with the illegal trade of natural resources including ivory, documented by the UN and the International Criminal Police Organization.

Global Witness and Greenpeace also found that many companies, including SODEFOR, don't regularly pay their taxes. Prior research by Global Witness found that in 2012 less than 10 percent of forestry taxes that should have been paid actually were. "Logging companies have been getting away with

illegalities that have cost the DRC millions of dollars in lost taxes, as well as endangering the forest,” said Alexandra Pardal, campaign leader at Global Witness.

“While the forestry sector ought to be a significant source of income for the DRC government, enabling money to be spent on improved governance and enforcement, in practice tax avoidance is rampant, with the connivance of the authorities,” wrote the authors of the Greenpeace report.

SODEFOR maintains that it has always met its tax obligations.

In February 2015, DRC’s Minister of the Environment and Sustainable Development Bienvenu Liyota said tackling illegal timber exploitation in Congo would be one of his priorities as minister. But both Liyota and the country’s logging advocacy organization, la Fédération des Industriels du Bois (FIB), said that Global Witness and Greenpeace had exaggerated outlier cases of illegality in industrial logging.

And, in the recent statements, both parties argued that timber harvests should increase dramatically. “DRC’s forests remain largely undervalued,” producing less than five percent of the volume of timber that Congo’s forests were capable of over the past 10 years, according to FIB. “The forestry sector constitutes an opportunity to help DRC to develop and its people to get out of the extreme poverty,” wrote FIB President Gabriel Mola Motya in a response to the report released on June 23.

But depending on the government to police the sector won’t work, Greenpeace’s Monsembula said. To see any change, he

believes the consumer countries must employ the laws against illegal imports in their own countries. After China, the EU is the largest buyer of DRC’s timber, with France importing more than 26,000 metric tons in 2013 and 2014.

“For those exports to occur there must be traders willing to trade in timber of illegal, or at least dubious, origin, and governments in importing countries unable to implement and enforce EU and international laws to prevent those transactions,” Monsembula said in a press release.

The Greenpeace report points out that, although the EU Timber Law (EUTR) requiring timber operators and traders to verify the source of their timber has been in place for several years, complementary French legislation allowing enforcement didn’t pass until late 2014. The report states that no inspections have occurred in France.

“I think it has to begin in those countries because if they became more demanding about which timber they buy, that will help us,” Monsembula said.

Global Witness’s Pardal echoed his sentiments: “Our figures show that the well-documented impunity in the logging sector has not deterred European timber traders from importing timber from DRC. We are asking EU member states – and in particular France – to apply the EU Timber Regulation [EUTR] and to investigate these imports.”

[news.mongabay.com](http://news.mongabay.com)

## Global: Wildfire seasons are longer almost everywhere on Earth

**W**ildfire seasons all over the planet are lasting longer than they have in the past and burning wider swaths of land, and Earth’s changing climate is to blame, according to a new report.

Ecologist and fire scientist Matt Jolly and his colleagues say the average duration of annual wildfire seasons lengthened almost 20 percent between 1979 and 2013, and the amount of land vulnerable to burning almost doubled. The team published its results in the journal *Nature Communications*.

The phenomenon isn’t just happening in areas such as the Western United States. Wildfires are burning for a longer period of time on every continent except Australia and Antarctica, the report said. Forests and grasslands in Africa are burning more, and the fire season in South American tropical forests is more than a month longer than it used to be. Fires are also getting worse across the Eastern U.S. coastal plain, and they increased the most in the Northern Rocky Mountain region.

The study also shows that the length of the wildfire season correlates closely with changes in temperature, humidity, rainfall, and other climate indicators. Wildfire seasons tend to fall in hotter and drier times of the year, when vegetation is vulnerable to burning. Causes vary: Lightning is a frequent cause of wildfires in remote wilderness areas, but the National Parks Service says that up to 90 percent of wildfires in the United States are caused by people.

When they occur naturally, wildfires are not necessarily a problem; occasionally scorching a section of land allows new plants to grow, which can provide fresh food sources for wildlife. But wildland fires are increasingly destructive and costly in terms of lives and property, requiring substantial investments in wildfire suppression. “Recently, there has been a surge of extremely destructive fires with corresponding social disruptions and substantial economic costs,” the researchers wrote in their paper.

Fighting wildfires on federal land costs the United States \$1.7 billion a year, according to figures cited in the paper. Canada spends about \$1 billion annually suppressing fires on its public land. But those numbers likely do not account for all of the ancillary costs around fighting wildfires, according to the study’s authors. “When all components are considered, including preparedness/suppression costs and economic losses, these total costs are substantially higher,” the researchers wrote. For example, Australia spent nearly \$10 billion – 1.3 percent of its total GDP – suppressing dangerous wildfires in 2005, according to the report.

The report also notes that wildfires may be pumping even more carbon into the atmosphere, furthering the very changes in climate that are producing more wildfires.

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

# Global: The forest path to an ambitious climate deal

Later this year, global leaders will make important decisions about some of the planet's toughest challenges. If the world wants a climate deal and new development agenda that's good for the economy, for the poor, and for businesses, the path forward needs to include forests.

In September, governments will set goals for eliminating extreme poverty by 2030, having first agreed on ways to mobilise the investments needed to succeed. Then, this December in Paris, nations will agree a potentially far-reaching climate change pact. This pact will stitch together various country-level action plans through 2025 or 2030. In parallel, companies will also announce new climate goals. These pledges will show that both the public and private sectors are doing more than ever before.

Yet, collectively these pledges will fall short of what the world needs to keep global warming to less than 2° C, a threshold that scientists and governments have agreed is critical to avoid catastrophic consequences for hundreds of millions of people. To strengthen the Paris agreement global leaders should look to the world's forests.

At the UN Secretary-General's Climate Summit in September 2014, over 175 countries, companies and organisations representing indigenous peoples, signed the New York Declaration on Forests – committing to cutting global natural forest loss in half by 2020, and ending it entirely by 2030, while also increasing forest restoration.

A critical mass of tropical forest nations and global agricultural companies strongly endorsed these ambitious goals for the first time. And advanced economies committed to providing large-scale economic incentives to help make dramatic progress possible. Once implemented, according to the UN, achieving these goals will cut between 4.5 and 8.8 billion tons of carbon pollution per year by 2030 – about the same as ending all climate pollution from every car in the world. And doing so is more cost-effective than other climate solutions, with many benefits for the 1.6 billion people who depend on forests for their livelihoods.

Several developing countries are leading the way. Brazil has reduced forest loss in the Amazon by more than 75 per cent, all while increasing agricultural productivity and rural incomes for the poor. These results came about through strengthening policies and implementing better governance, with leadership from within government, as well as the private sector and civil society.

Late last year Peru committed to end deforestation by 2021, in partnership with Norway and Germany. Colombia recently unveiled plans for one of the largest protected areas in the world, committing to restore 1 million hectares of forested area and to reach net zero deforestation in the Amazon region by 2020. Last year, fourteen of the world's leading forest countries, including Colombia and Peru, pledged to come forward with ambitious forest goals before Paris and challenged industrialized economies to deliver on their 2014 commitment to create real economic incentives for action.

The private sector is also leading. In 2010, the Consumer Goods Forum brought together companies with over

US\$3 trillion in annual revenues, pledging to eliminate deforestation from their supply chains by 2020. Consumer companies like Unilever, Nestlé, McDonalds and major agricultural commodity traders like Wilmar, Cargill and Archer Daniels Midland, have committed to implement that pledge.

Over the past eighteen months alone the share of global trade in palm oil covered by corporate zero deforestation commitments has grown from 5% to around 90%. Since agriculture accounts for over 70% of tropical deforestation, these commitments have the potential for enormous impact – but this of course depends on them being fully implemented, and companies across the supply chain must play their part. Doing so is good for business because it secures our license to operate, future-proofs our supply and mitigates risk in a world of finite resources. It means doing the right thing by the planet and being able to serve consumers in decades to come.

But forest countries, local communities and companies cannot succeed alone. Now developed countries must fulfill their commitment to create economic incentives for action. Forest nations willing to do more than their fair share to solve the climate crisis should be rewarded through results-based payments. In Paris, developed nations should make good on their 2014 pledges to provide economic incentives by committing to financing 2 billion tons of emission reductions per year from tropical forests by 2020. The 2015 New Climate Economy report from the Global Commission on Economy and Climate, of which I am a Commissioner, also argues for scaled up international flows for REDD+ beyond 2020, with the aim of financing a further 1 billion tons of emissions reductions per year from 2020 and beyond.

These funds should finance place-based partnerships to increase agricultural output and rural incomes by intensifying agricultural production and restoring productivity to environmentally degraded lands – rather than by expanding agriculture at the expense of forests, forest-dependent communities and the climate.

China and India, both significant importers of forest-risk commodities, should also start to wield their buying power. They can send an important signal that the biggest and fastest-growing markets for palm, soy and other commodities want and expect them to be sustainably sourced. Through these investments and signals the world can feed its growing population, end extreme poverty, protect forests and tackle climate change in the most efficient and equitable way possible.

So far forest partnerships are not featuring prominently in climate discussions heading into Paris. The talks are focusing on what each country can do by itself, instead of also looking at what more we can do by working together. This is a miscalculation. It ignores pro-growth, low-cost opportunities for action, and exacerbates the risk that many developing countries will not have enough at stake for an ambitious deal on climate. Fortunately, there's still time to turn this around. The world can and should take the forest path to an ambitious climate deal.

**[huffingtonpost.com](http://huffingtonpost.com)**

# Guyana: Iconic timber species overharvested, near commercial extinction

**G**uyana's greenheart, purpleheart and more recently, wamara and itikiboroballi species are overharvested and are extinct or approaching commercial extinction in accessible forests, according to forestry expert Janette Bulkan, despite denials by the Guyana Forestry Commission (GFC).

"The ratio of their log volumes to total log volumes far exceeds the ratio of the volumes of the standing trees in the forest to total forest volume," Bulkan wrote in a recent letter to Stabroek News. Bulkan said that it has been evident for years that the GFC's casual approach to the required conservation of individual species among Guyana's 1000+ tree species has been allowing "massive over-harvesting" of the commercially-preferred timbers.

She pointed to log export data which showed that there is a tremendous concentration for the export market on a very limited number of tree species.

The forestry expert noted that for the years 2012–2014, the GFC's Forest Sector Information Report (FSIR) confirms this concentration. In 2012, the top three species for log production were greenheart, wamara and purpleheart and the top ten species accounted for 76 per cent of total log production, she pointed out.

The GFC has acknowledged that only a limited number of species are being harvested by the entire forest sector concessionaires. "But in the same breath, it must be mentioned that the current logging intensity of Guyana is only about 30 % of the Annual Allowable Harvest- as such there is no current threat of over-harvesting to any commercial species," the agency said in a response to another letter by Bulkan.

Citing figures, Bulkan had pointed out that in 2013, the top class 1 timber was wamara, with no information about greenheart or purpleheart. In the last published FSIR, for January-June 2014, wamara and greenheart were the top two timbers and purpleheart was fifth in log production.

Bulkan said that the figures show two marked trends: firstly, the trend of forest degradation is evident in the rise and fall in exports of commercially desirable timbers.

Secondly, the greenheart, purpleheart, wamara and itikiboroballi species together comprised more than 50 per cent of total log exports in all but one year (2004), and more than two-thirds of all log exports between 2007 and 2010, she said.

"The remarkably large difference between the declared FOB prices for logs exported from Guyana compared with the declared CIF prices for the same or similar timbers landed in China and India is conventionally a signal of transfer pricing.

This practice involves incorrect Customs declarations. In addition, taxes for our excellent timbers are notably much less than for equivalent timbers in Malaysia," she said.

Harvesting is excessive and unsustainable, pricing is wrong and taxes are too low, Bulkan declared.

She said that corroboration about Customs fraud is in the report on 'Illicit financial flows from developing countries: 2003–2012,' from the Washington-based Global Financial Integrity. These flows are estimated for Guyana at US\$84 million in 2003, rising almost continuously to US\$440 million in 2012, she noted, while adding that around half of the illicit flows (US\$ 1464 million for 2003–2012) are attributed to export under-invoicing.

The GFC has said that it is finalising work on implementing a 'harvesting by species quota,' based on the inventory data. "Pilot inventories in concessions are enumerating trees using the GPS, and accurate geo-referenced species stock maps are being generated. This will allow for the phased introduction of a harvesting regime that is based on species quota," the agency said.

Bulkan, in response, said a simple comparison between the proportions of volumes of preferred commercial timbers harvested and exported to total all-species volumes harvested and exported and the proportions of volumes of preferred commercial timbers standing in the forest to the volumes of all timbers standing in the forest shows that there remains a huge bias in favour of stripping out the preferred timbers.

"These slow-growing species do not grow fast enough in natural regeneration to replace the current rates of extracted volumes. The GFC conducts no post-harvest silviculture to increase the growth rates of the next cohort of crop trees of these species, and there is no research anyway which suggests that silvicultural treatment would be effective at financially reasonable cost. Nor does the GFC practise restoration by planting these preferred timbers. Currently, therefore, the GFC's own data indicate that the preferred species are heading towards commercial extinction through massive over-harvesting. Even the GFC should be able to appreciate that this is not sustainable forest management as understood in any text book," she declared.

Chinese and Indian companies export a significant amount of logs and, according to Bulkan, "the Asian log exporters will continue to cream Guyana's fragile forests of commercially desirable species until the last tree is harvested."

**stabroeknews.com**

# India: How community rights under the Forest Rights Act could transform the lives of millions of forest dwellers

Reaching Bilapaka in the buffer area of the Similipal Tiger Reserve in Mayurbhanj district of north-eastern Odisha is not easy even in the best of times. So a day after heavy rains which made our visit to the village seem like nothing more than a dream that may not come to pass, we set off from Jashipur, the nearest town, under clear skies on a 90-minute journey (it usually takes about half the time), periodically during which we encounter massive boulders on what is an apology for a road next to a gushing river.

When we finally get to Bilapaka, we are greeted by vast swathes of paddy fields bordered by the woods, with houses at an elevation in the middle exhibiting a sense of equanimity that belies the far-reaching development that occurred about four months ago. The villagers, belonging to Bathudi and Kolha tribes, finally got back in April what, till a few years ago, they could not even imagine: the right to manage and conserve the part of the forest that falls within the traditional boundaries of their village, and the right to use and sell minor forest produce like tendu (a leaf used to make beedis), bamboo, honey and medicinal plants.

Bilapaka, with a population of 480, was one of the 44 villages in the core and buffer areas of the tiger reserve whose community forest resource rights, better known as community forest rights (CFR), were recognised in April, under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, better known as the Forest Rights Act (FRA).

Maheshwar Naik does not need much prodding to talk about CFR. A short man with a chiselled torso, Naik is the president of the forest rights committee, elected by the gram sabha of the village, the body vested with CFR. At least a third of the committee members has to be women. "Before FRA, the government tried to displace us but we didn't move; now they can't do anything," says Naik, with a half-smoked beedi stuck in his lungi. It's been nearly two years between the village filing its CFR claims and getting the recognition.

Budhurai Soren, from Sanasinai village, which is outside the tiger reserve, is glad that there will be no more penalties for 'encroachment'. "The old men in our village have for years been engaged in forest protection, reporting poachers to the forest department, but once we get CFR we can handle it ourselves,"

he tells us at the tahsildar's office in Jashipur where he and people from a bunch of other villages have come to collect their individual forest rights (IFR) titles.

Sanasinai has completed its CFR claim process and is awaiting the final papers. Indigenous peoples across the world have a history of protecting forests before governments came into the picture. Odisha, for instance, reportedly had 17,000 village forest protection committees even before FRA.

Considered one of the most landmark pieces of legislation enacted during the United Progressive Alliance's 10-year rule, FRA looks to set right the injustices suffered by India's tribals and other forest-inhabiting communities during the time of British rule and in independent India. Tribals had been living in and conserving forests, while at the same time depending on them for their livelihood for centuries, but the British started regulating forests in the second half of the 19th century.

The Forest Charter of 1855 made timber a state property and 10 years later, the first Indian Forest Act was enacted, followed by two more, in 1878 and 1927. These sought to take over forests to exploit their commercial potential and, as a result, put paid to the locals' dependence on them. The 1878 Act divided forests into reserved forests, protected forests and village forests.

Reserved forests were the most restricted category, with the government enjoying proprietary rights over them and most uses of the forest by locals were prohibited unless specifically permitted. The government had ownership rights over protected forests too, but most uses by locals were allowed unless prohibited. Village forests, on the other hand, were those where the government assigned the local community powers to manage the forest, but this provision was not made much use of.

The government also turned several protected forests into reserved forests just so it could control them entirely. Tushar Dash of Vasundhara, a Bhubaneswar-based non-governmental organisation, says 90% of reserved forests were so declared by the British without any due process for settlement of rights. The government's exclusionist approach to forests continued in independent India. The Forest Policy of 1952 wanted a third of the country to be brought under forest or tree cover.

[economictimes.indiatimes.com](http://economictimes.indiatimes.com)

## Pakistan: Forests a major line of defence against negative climate change

Federal Minister for Climate Change Mushahidullah Khan recently said that forests are a first major line of defence against negative impacts of climate change, particularly floods, droughts, groundwater depletion and sea intrusion. The climate change minister said that depriving the earth of tree cover means exposing the planet and the life it harbours to irreversible damages.

"However, all efforts aiming at tackling climate change and its negative impacts will definitely fail if deforestation continues,"

he warned during his keynote address to the inaugural ceremony of the Monsoon Tree Plantation 2015 at the Bani Gala Reserved Forests. "All of us must understand that without trees/forests earth and the life on it is at risk of vanishing, he emphasised.

Mushahidullah further said, "Conserving and protecting the existing forests and increasing tree cover in the country is at the heart of all activities of the Ministry of Climate Change. I would leave no stone unturned in increasing country's tree cover from current less than five percent to 12 percent in next few years."

However, he said, the long-term goal of national forest policy, which is being finalised, is to increase tree cover up to 25 per cent of the total landmass of the country.

He urged all governmental and non-governmental sectors to join the ministry's efforts to save country's existing forests and "boost the tree cover to make the planet sustainable for us and our coming generations". He told the participants that forests play major role as far as coping with the vagaries of climate change is concerned besides holding the potential to slow down and stabilise climate change, which has become increasingly erratic because of shrinking forest cover globally.

The minister said that one major role played by the forests is to remove carbon dioxide from the air. If carbon dioxide increases in the atmosphere, it can severely alter the earth's climate. Forests also provide a home for many plants and animals that can live nowhere else, he highlighted.

Mushahidullah said, "The forests currently contribute about one-sixth of global carbon emissions. They react sensitively to a changing climate. When conserved and managed in a sustainable way, trees produce wood as an alternative to fossil fuels."

And more importantly, he said, they have the promising ability to absorb about one-tenth of climate-altering carbon emissions projected for the first half of this century into their biomass, soils and products and store them.

He said that forests help conserve and enrich the environment in several ways. For instance, by soaking up large amount of rainfall, forest soils prevent the rapid runoff of water that can cause erosion and flash flooding. Besides, rain is filtered as it passes through the soil and becomes ground water.

The minister further said that almost all water ultimately feeds from forest rivers and lakes and from forest-derived water tables. The forest provides shelter for wildlife, recreation and aesthetic renewal for people, and irreplaceable supplies of oxygen and soil nutrients. Deforestation, particularly in the tropical rain forests, has become a major environmental concern as it can destabilise the earth's temperature, humidity, and carbon dioxide levels.

**dailytimes.com.pk**

## Sweden: New study shows that paper is better than plastic

**I**VL Swedish Environmental Research Institute has concluded a comparative study on the environmental performance of different packaging solutions. The study compares the lifecycles of plastic products versus corresponding paper products from BillerudKorsnäs. The results show that paper has considerably more favorable environmental qualities than plastic, such as 50-70% lower greenhouse gas emissions.

IVL's study looks at the entire product lifecycle, from material production up until it is thrown away or recycled. Although the transportation and packaging production of plastic products emits less greenhouse gas, the results show that the overall product lifecycle of paper products give rise to far less emissions. Material production of both paper and plastic packaging is the most energy intense part of production. But according to the study, which has been verified by Bureau Veritas, plastic production emits far more greenhouse gas than paper production.

"The results of the study challenge a common misconception that the production of paper packaging is more energy consuming and environmentally detrimental than the production of plastic packaging. An important reason why the production of the tested BillerudKorsnäs packaging materials emits less greenhouse gas is that their process is almost entirely run

on renewable energy. Another reason is that the total energy consumption for production of these products is lower", says Lena Dahlgren, project manager, IVL.

### Plastic littering a concern for the European Union

The EU parliament has recently introduced measures that will limit the use of plastic bags in Europe. The aim is to decrease their use from 200 plastic bags per person and year to 90 plastic bags per person and year before the end of 2019. Each member country will be free to decide how this goal will be achieved, but a possible solution might be to increase the use of paper bags.

"BillerudKorsnäs welcomes the EU initiative to deal with Europe's littering problems. Paper and board packaging are not the only solutions. It is important to reduce littering, regardless of material. But given a choice between plastic and paper, we believe that our products can contribute to solutions against both plastic littering as well as climate change, two of our times largest sustainability challenges", says Henrik Essén, SVP Communication and Sustainability, BillerudKorsnäs.

**cision.com**

## Turkey: Special forests for beekeeping increasing nationwide

**A**s part of the project "Bal Ormanı Eylem Planı" (Forest Action Plan for Honey Production) carried out for the development of beekeeping and forest protection, 233 special forests for honey production were established in 64 provinces, so far. According to the General Directorate of Forestry, the main aim of the project is to protect forests, avoid possible problems on beekeeping fields and increase the income of beekeepers

between 2013 and 2017. The forests spread across an area of 30.843 hectares. The trees, which were planted by the end of June, are suitable for the region's climate and honey production. A total of 270 honey production forests, which are planned to be established soon, will contribute to decrease the migration and avoid possible problems in forests, prevent erosion, protect biological diversity with the help of pollination and the country's economy.

With the forestation, erosion control, pasture improvements and production and maintenance projects, it will be possible to support protecting and developing flora available for beekeeping and also introducing regulations necessary for migratory beekeeping. Bahri Yilmaz, the President of Turkey's Beekeepers Union, said in his statement to the Anadolu Agency that the Forest Action Plan for Honey Production project will provide big benefits to beekeeping. Yilmaz said that thanks to the project, not only new forest areas will be created but also current forest areas will be rehabilitated. Yilmaz continued, "Many trees such as locust, chestnut and linden trees, which help bees to produce honey, are planted in Central Anatolia, Black Sea and Marmara

regions and current production areas are regulated. Important opportunities for the industry's future are provided to migratory beekeepers, especially regarding accommodation." Yilmaz said, "As we know, bees are essential for pollination. That is why, they balance the nature."

Turkey is already the world's second-largest honey producer after China, which produces approximately 90,000 tons of honey annually, according to the report by the Food and Agriculture Organization (FAO) and 56,000 professional beekeepers have 5.9 million beehives across the country.

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

## Uganda: NFA, CSOs clash over forest dependent communities

There was a clash between National Forest Authority (NFA) and members of the Civil Society Organizations over the legality of communities settling in and around forest reserves.

While presenting their draft report titled; "*Social Protection of Forest Dependent Communities*" at a validation workshop in Kampala on Wednesday, the lead researcher, Ssanyu Ntongo said their findings show that majority of people living in and around forests were Forest Dependent Communities (FDC) who also need social protection to improve their livelihoods like other vulnerable groups instead of being evicted.

The study was done by Development Research and Training (DRT) in collaboration with Food and Agricultural Organisation (FAO) between March and April early this year. It was done among 322 households in 29 villages, in five selected districts of Kalangala, Kaabong, Hoima, Hoima and Kisoro known to have a forest cover with possible communities living inside or adjacent to the forests.

Ntongo highlighted the IK group in Timu forest (Kaabong), cattle keepers in Kasagala Central forest reserve (Nakasongola), Batwa group around Bwindi forest, and communities surrounding Hoima, Kisoro and Kalanagala among others, saying majority of the people thrive on forests.

She noted that groups like the IK in Kaboong have lived inside the forest for centuries and entirely depend on forests. "Other groups like those in Wabisi-Wajala and Kasagala forest reserves in Nakasongola have lived there for over 50 years having migrated from Lango. Such people have nowhere to go if evicted," she added.

According to the study some areas like in Hoima forests have been invaded by several immigrants especially from Kigezi and West Nile for settlement and agriculture. She noted that despite the eviction of Batwa in Kisoro and restriction access for other community members, forests remain important facilitators of livelihoods. Community member still access bamboo sticks, climbing bean sticks, honey and herbs of which they add value and sell to tourists. Charcoal burning was mainly sighted in Nakasongola while fishing was evident as the main activity in Kalangala.

She said in many of the areas people are isolated and live in perpetual fear of being evicted especially in Kalangala, Nakasongola, Hoima and Kisoro. "These people also face confrontations and victimisation by NFA officials. In communities that live in forests and on hills, they don't have access to social amenities like schools, hospitals among others," she added.

Research shows that in many areas, children have to walk eight kilometer to the nearest health center and about 35kilometer to the nearest UPE school. Other problems faced by the communities include wildlife attacks, cattle raids and cross boarder conflicts and extreme weather conditions among others.

Ntongo said there is need for social protection policy to address risks and vulnerabilities of forest dependent communities that are being evicted. In his response, the director of cooperate affairs NFA, Paul Musamali dismissed the research findings, saying most people are living in forests illegally. "We know the indigenious communities and we have our programs like Collaborative Forestry Management (CFM) where we work with communities to restore and preserve forests and we provide alternative livelihood initiatives," he added.

He said 92,000 hectares of forest are destroyed every year. Musamali said so far 29, 762 hectares are under restoration through CFM. "We shall continue to work with communities but we shall continue to evict illegal encroachers in order to protect the forests," he added.

Annet Kandole, of Care International in Uganda, said there is need to first check the legality of the people living in forests before taking any action. "We need to understand who is a forest dependant because some encroachers are politically motivated. Some of those people have where they come from like those who were evicted on Matiri forest reserve," she added.

The acting director social protection in the ministry of gender, Fred Onduri said they have already come up with a Social Protection Policy and would make sure that forest dependants are catered for. "But many of people in forests are encroachers and not dependents. We have to be careful," he said.

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