

# CFA Newsletter



No.57

June 2012

ISSN 1750-6417

## Contents:

### Association news

- A royal meeting
- Members' information
- Stephen Midgley
- Calling all photographers

### Forest scenes

- Sustainable forestry at the crossroads in Australia
- Electronic newsletter on Climate Change and Forestry
- Preservation, sustainability or wise forest management
- Marcus Wallenberg Prize
- News from Guyana
- Criteria for good REDD+ activities

### Publications

- Forest peoples: Numbers across the world
- Teak resource assessment

### Review

- There's honey in the forest and Uganda diaries

### Around the World



## RIO+20

### United Nations Conference on Sustainable Development

#### A background to Rio+20 – the UN Conference on Sustainable Development

The UN Conference on Sustainable Development at Rio de Janeiro in June 2012 comes two decades after the UN Conference on Environment and Development in the same city in 1992 and four decades after the first such event, the UN Conference on the Human Environment at Stockholm in 1972. These mega-events now with tens of thousands of highly opinionated participants generate tremendous heat in discussions and consume vast amounts of forest products as paper. Whether they are cost-efficient is always an open question, but I suggest that they are cost-effective. That is, they generate or accelerate forward momentum in some aspects of the human condition or they provide extensive publicity for developments which can be adapted or adopted beyond the sites of origin, both on a scale that the originators could not generate by themselves.

There is of course tremendous competition to get ideas and news onto the agendas of these mega-events and into the main background papers. At the time of writing it is not certain which ideas will be at the forefront at Rio de Janeiro this year. So here I am mentioning some of the notions which were first broadly

accepted at such events in the past 40 years and which are now part of public discourse and practice in all but a few repressive regimes.

It is only right to record that one of the early products of the United Nations was the universal declaration of human rights (UDHR) in 1948, approved after the atrocities of the second world war. The UDHR established that there was a globally acceptable forum for developing and endorsing such globally applicable principles. Stockholm 1972 introduced the precautionary principle, that inadequacy of science-based knowledge could not be an excuse for failing to take prior measures against environmental damage and degradation. 1972 was also the year of publication of the Club of Rome's report 'Limits to Growth' which reminded us that Earth could not sustain unlimited exploitation of the resources of a small planet using then-available technology.

The 1987 Montreal Protocol of the Vienna Convention for the Protection of the Ozone Layer was the treaty to phase out the production and use of manufactured halogenated hydrocarbons which damaged the stratospheric ozone layer. This layer is important in preventing solar ultraviolet-B radiation from reaching the earth's surface and causing skin cancers and damage to crops and marine phytoplankton. The Montreal Protocol has been successful because there are

#### CFA Newsletter

is the newsletter of the Commonwealth Forestry Association

Editor: Alan Pottinger

Contact: The Crib, Dinchope, Craven Arms, Shropshire SY7 9JJ, UK

Tel: + 44 (0) 1588 672868

Email: [cfa@cfa-international.org](mailto:cfa@cfa-international.org)

Web: [www.cfa-international.org](http://www.cfa-international.org)

The views expressed are not necessarily those of the CFA.

alternative chemicals for use as refrigerants, solvents and foam blowing agents; because there were only a few manufacturers; and because infractions were easy to pinpoint and penalize.

The relative simplicity of the Montreal Protocol, which has been revised seven times as experience and knowledge have improved, stimulated hope that other environmental problems could be resolved. Increasing deforestation in the tropics and forest recovery in temperate zones, summarized and increasingly well publicised by FAO in the global forest resource assessments, led to initial work by NGOs on standards for forest certification in the late 1980s. Certification offered the prospect of a market-linked mechanism which could reward good forest stewardship, if not by a 'green premium' in price then at least by offering more stable and long-term markets to producers.

In the mid-1980s, FAO, UN Development Programme and the World Resources Institute launched the Tropical Forest Action Plan (TFAP), an attempt to use more open and transparent multi-stakeholder planning to bring forested tropical countries into mainstream economic planning and forest management. Central planners in most countries were not enthused about changes in whole government systems promoted by reform-minded lumberjacks. The worthy aims of TFAP were defeated by conservative politicians and civil servants who did not relish public questioning or scrutiny. Inter-sectoral coordination and cooperation need higher-level political sponsorship than a forest sector can usually secure on its own.

The UN Commission on Environment and Development (the Brundtland Commission) pointed out the moral obligation to provide for future generations while satisfying the needs of the present, and noted the vast disparity in the ecological footprint of the wealthy Northern countries compared with the poverty-stricken Southern countries. The Brundtland report in 1987 publicised the reality that the geological accident of abundant natural resources did not assure human development when governance was weak; work from the early 1990s showed that the 'resource curse' may apply to forest-rich countries as much as to oil-rich countries.

The Earth Summit in 1992 was thus backed by 20 years of warnings of increasing environmental over-exploitation but some hope that problems were technically soluble. 150 participant governments agreed that biodiversity was important for sustainable life and signed the Convention on Biological Diversity (CBD) at Rio. The CBD was one of the supporting instruments for Agenda'21, a compendium of possible activities to provide for a more sustainable future and including a chapter (number 11) on forests. In some countries, Agenda'21 has been the most durable and relevant outcome from the Earth Summit, with local planning for sustainable development being translated down to and implemented at village level. Not so in all countries, notably in those where central government is frightened of allowing decision-making by ordinary citizens.

Any idea that the Montreal Protocol might be adapted to forest management was defeated at Rio by the insistence of some countries on sovereignty over national forest resources and their opposition to a Convention like the CBD. Instead, after tortuous negotiations, we ended with the 'Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests' (NLBF). The unmusical sound of this title is an indication of the difficulty of reconciling wildly different points of view about global and national rights and responsibilities for forest management. Three organizational structures followed under the UN Commission on Sustainable Development – the Intergovernmental Panel on Forests, the Intergovernmental Forum on Forests, and the UN Forum on Forests (UNFF). The seventh session of UNFF delivered a further 'Non-legally Binding Instrument on All Types of Forests' in December 2007. One needs to be a strong optimist to see much sign of progress between 1992 and 2007.

However, during these 15 years there have been extensive studies of the causes of deforestation (conclusion? – local factors are important as well as national levels of poverty and the influence of globalised trade in forest products, as well as many other factors). And perhaps most importantly the IPF/IFF/UNFF process has secured a right for non-government organisations to speak on their own account in plenary sessions and not as members of national government delegations. That may not sound like much but it is a first in the status-conscious United Nations system.

These international meetings of course come at a price. Larger and richer countries can afford to send delegates to each session, where inter-delegation relationships can be established and productive partnerships developed. Smaller countries may struggle to attend even some of the sessions, it is often difficult to send the same person or persons each time, international training in how to negotiate at international meetings is almost non-existent, and travel sponsorship is precarious. It is not surprising that some tropical country foresters feel more at home in the International Tropical Timber Council where there is no persistent NGO questioning about weak forest governance and unsustainable logging and trade.

In addition and more recently, flowing from the UN Framework Convention on Climate Change, also a product of the Earth Summit in 1992, the management of forest carbon offers a new and tremendous opportunity for sustainable funding of non-commercial forest management. How important is REDD+ in the context of Rio+20 we will explore in the next edition of the CFA Newsletter.

**John Palmer**

Forest Management Trust,  
2724 West Cortez St., Chicago, IL 60622-3419, USA

---

# Association news

---

## A royal meeting

The annual Commonwealth Day celebrations on March 12th culminated in a Reception at Marlborough House in London, hosted by Her Majesty Queen Elizabeth II. In attendance were the Commonwealth Secretary General, Mr. Kamallesh Sharma, senior diplomats and representatives of the Commonwealth's many associations. **Miss Celia Nalwadda** attended on our behalf and managed to have a brief chat with Her Majesty in amongst enjoying the cultural celebrations. Celia is a Ugandan and recent CFA Youth Officer who is currently studying in the UK for her MSc in Land Management (Natural Resource Management) at Cranfield University, courtesy of the Marshal Papworth scholarship.



Celia arrives at Marlborough House

## A request for members' information

To assist us in keeping our records up to date we would be grateful if members would be kind enough to send us their CVs to [cfa@cfa-international.org](mailto:cfa@cfa-international.org). Don't worry, we will keep them safe and sound and will not pass them on to any third party.

## Stephen Midgley wins ACT Forester of the Year



CFA member, Stephen Midgley, who has developed successful Australian-Asian forest development partnerships was announced ACT Forester of the Year at a World Forestry Day dinner in Canberra. Stephen runs his own consulting business, Salwood Asia Pacific Pty Ltd, which offers a professional commitment to partnerships between Asian and Australian forest industries and organisations through a range of services relating to the commercial plantation use of Australian trees, forest industries and rural development.

He had a long and successful career with CSIRO where he was leader of a major team specialising in the domestication and utilisation of Australia's trees, mainly eucalypts and acacias, both in Australia and in other countries. In his acceptance speech to the ACT Division, he highlighted the important role that Australian acacias are playing in the economies of communities in rural Vietnam and to the lives of people. The employment offered through acacia-related forestry activities and the return of \$300 million in royalties to acacia smallholders makes a great deal of difference to rural livelihoods and helps to alleviate poverty. Australian forestry scientists can be justifiably proud of this contribution.

## Calling all photographers

**Y**ou might have noticed that we have a new-look website at [cfa-international.org](http://cfa-international.org) and we want to use it to showcase forestry around the Commonwealth. That means that we would like to invite all members to

send us photos showing forestry in your country – whether it's tree planting, natural forests, industrial uses of wood let us know what is going on in your country. Photos can be sent to [cfa@cfa-international.org](mailto:cfa@cfa-international.org) and we will post them on our website.

## Correction

**I**n the March 2012 issue we published an article entitled *Cameroon government cracks down on illegal logging*. Since publication a new Director of Forestry, Mr Mfou Mfou Bruno as been appointed to

replace Mr Samuel Ebia. Also the correct name of the Director of the Centre de Promotion du Bois is Jules Paulin Essono.

---

## Forest Scenes

---

### Sustainable forestry at the crossroads in Australia



*High conservation value Eucalypt forest in Tasmania*

**A**ustralian forestry is guided by the National Forest Policy Statement (1992) and the Plantations for Australia: The 2020 Vision (1997). These two policy documents have provided the basis for sustainable forest management in Australia for the past 20 years. Each of the main areas of productive native forest was the subject of a Regional Forest Agreement process in the late 1990s to establish which areas could be available for timber production and which areas would be set aside for conservation using a set of scientifically based criteria and taking into account public comment. While the area of native forests available for timber production was being decreased, governments and industry adopted a target of trebling the area of plantations to 3 million hectares by 2020.

Recently, the Australian media has carried much coverage about a new agreement for the management of Tasmania's forests, which have been the subject of ongoing campaigns for further protection of sites of high conservation since the 1980s. This agreement follows the 2005 Tasmanian Community Forestry Agreement and the 1997 Tasmanian Regional Forest Agreement. Following these two agreements 45% of Tasmania's native forests (over 1.12 million ha) were reserved. In essence this new agreement, would add a further 430,000 hectares to conservation reserves, drop the annual sustainable yield of sawlogs from 300,000 m<sup>3</sup> to 155,000 m<sup>3</sup>, provide compensation to forest industry workers and give support for the development of a plantations-based pulp mill in northern Tasmania. While this new agreement was lauded by Federal and State political leaders as ending the long standing conflict and providing certainty for Tasmania's forests and forest industry when it was released in August 2011, it quickly fell into uncertainty and counter claims from various parties to the point when in March 2012 various conservation groups and the peak Tasmanian forest industry group were withdrawing from the process. An independent verification group recommended 428,000 hectares be permanently reserved from the ENGO nominated candidate areas of 572,000 hectares, but this was not adequate for the conservation groups, including the Greens political party - which currently holds the balance of power in the Federal parliament.

While Australian forestry is much more than Tasmania, these apparently unresolvable issues threaten the basis for long-term sustainability of the Australian forest industries. Planning for the development of a new pulp mill in northern Tasmania began in 2004. Gunns Ltd. propose to build a \$2.3 billion elemental chlorine free pulp mill that could produce up to 1.1ADt of pulp for domestic and international markets. The pulp mill proposal was finally given Federal government environmental approval

in March 2011, but as yet the finance has not been secured to commence construction of the mill and opposition to the mill from environment groups continues. One of the outcomes from the 2005 Tasmanian Community Forest Agreement was the development of value-adding veneer mills drawing wood resources from regrowth forests the products from which had previously been exported as woodchips. The environment movement had long campaigned against export woodchipping in Tasmania so it is quite surprising that in 2012 they mounted an international campaign to undermine the markets for the veneer products from these two new mills, in an effort to stop harvesting of regrowth native forests which they were now deeming to have high conservation significance. Clearly there seems to be a long way to go yet before there is a durable, sustainable and balanced outcome for the Tasmanian forest sector.



*Harvesting mature Radiata pine plantation in the ACT*

Unfortunately plantation forestry in Australia is also suffering difficulties at present. Under the 2020 Vision about 90,000 hectares of new plantations need to be established annually to reach the 3 million hectare target by 2020. The mechanism for achieving this has been private sector investment using the Managed Investment Scheme (MIS) arrangement, whereby lots of investors are parcelled together and the plantations are managed by plantation management companies. With the collapse of two of the largest MIS arrangements in 2008-09, investment in new plantations has fallen dramatically with only 23,000 hectares being established in 2010. Timbercorp had over 120,000 hectares of forestry and horticultural assets managed on behalf of 18,500 investors while Great Southern managed 179,000 hectares of plantations on behalf of 47,000 investors. With the liquidation of these two companies, the private investors trees were all sold to larger investors for “fire sale” prices and as a result investor confidence in this sector has disappeared. The need for additional investment in plantations is still there if Australian forest industries are to have a sustainable future and therefore an overhaul of the MIS policy mechanism is needed.

Forestry Research and Development is languishing in Australia, as Ric Sinclair pointed out in the March 2012 CFA Newsletter. Over a 20 year period, the number of forestry research scientists employed outside the university sector has fallen by almost 60%, with a big drop in the past three years, which coincides with big drop in investment in new plantations. In Australia, most forestry research is funded either via Forest and Wood Products Australia (funded equally by government and industry levies) or the Forestry Cooperative Research Centre (funded by the Federal Government and industry). In September 2011, the Federal Government announced that the bid for \$23 million to support a new \$80 million forestry research program over 5 years had not been successful. When the current forestry CRC concludes this will mean that annual investment in forestry research will fall to about \$11 million a year for an industry that contributes \$23 billion a year to the Australian economy (approx 0.7% of GDP). Despite current uncertainties, forestry in Australia still has a steady need for forestry professionals, and the ongoing negative media attention doesn't make it any easier to attract students to study Forest Science. This is reflected to some degree in continued low numbers in our tertiary institutions, and forest owners having to recruit from elsewhere to supplement our locally trained foresters.



*Closed loop pulp mill, drawing resources from plantations and recycled paper in NSW*

Australian forestry has a long and proud history and over the years has established policies and systems to achieve sustainable forest management that many other countries have viewed with envy. Yet it now seems that the future of forestry in Australia is facing a number of very great challenges. There is however some cause for optimism with the recent publication of the House of Representatives Standing Committee on Agriculture, Resources, Fisheries and Forestry report<sup>1</sup> “Seeing the Forest through the Trees” after a lengthy consultative inquiry into the future of the Australian forest industry. The report examines some of the issues discussed above and makes 19 recommendations including some on assessment of wood demand and supply, the role of wood products in climate change mitigation, renewal of Regional Forest Agreements, plantation management incentives and research and development. What remains to be seen now is how the Australian Government responds to this inquiry report and whether the various government, industry and environmental stakeholders can agree on revised policies and strategies to ensure the sustainable future of Australian forestry.

**Submitted by CFA members from Australia**

<sup>1</sup> <http://www.aphgov.au/house/committee/arff/forestry/report.htm>

# Electronic Newsletter on Climate Change and Forestry

**A**re you having trouble keeping up with forest-related developments in UNFCCC? Are you wondering what the research community is doing on forests and climate change? Are you at a loss to find forest-relevant information among the mass of climate change information?

If so, you may find CLIM-FO-L to be helpful. This electronic newsletter is published monthly in English by the FAO Forest and Climate Change Team. It covers:

- The latest news from the international press from the UNFCCC negotiations, and related discussions;
- Forthcoming events and meetings (the January 2012 issue listed 16 relevant meetings!)
- Research articles
- A listing of publications, reports and other media releases
- Jobs
- Announcements

The Newsletter is free of charge. To subscribe, send an e-mail to: CLIM-FO-Owner@fao.org with the message SUBSCRIBE CLIM-FO-L but leaving the subject line blank.

Clim-Fo-L welcomes subscribers' contributions of news, articles, publications and announcements of events. Once on the list, you can make a contribution by contacting: clim-fo-owner@fao.org

While you're about it, take a look at the FAO Forest and Climate Change website. It's regularly updated in three languages (English, French and Spanish) with news on the latest FAO forestry and climate change activities. You can also use it to check for back numbers of the newsletter. See <http://www.fao.org/forestry/climatechange>

**Jim Ball**  
CFA President

## Preservation, sustainability, or wise forest management, that is the question

**W**hether 'tis Nobler in the mind to suffer The Slings and Arrows of outrageous Fortune, Or to take Arms against a Sea of troubles, And by opposing end them: to die, to sleep No more; and by a sleep, to say we end The heart-ache, and the thousand Natural shocks That Flesh is heir to?"

*William Shakespeare, of the woodland community around Stratford on Avon and the all English Oak Globe Theatre.*

Or in parlance of today, should we do nothing and suffer ignorance and criticism or get going and do something about the state of our woodlands in England or anywhere else in the world and about governmental and public understanding of the inadequacies of our woodlands and their real potential.

### **What inadequacies and what potential have they, anyway?**

*Inadequacies:* Historically, mankind has been dependent on woodlands to provide fuel, shelter for animals, structure of buildings, and resources as diverse as paper and medicines. Useable, valuable wood derives from many tree species for a multitude of purposes. From the densest of commercially available wood, such as greenheart, to the lightest, balsa, there are significant examples of practical use in all periods of recorded history, and in current use today. From the days of Britain's emergence in civilizing communities to the present day, timber, in so many forms, has played a major role.

However, now, our population of diverse origins, which has grown up with urban mindset, and less and less appreciation of natural resources or their practical values, has allowed a careless attitude to woodland management. Even our rural communities no longer need to pollard trees or grow coppice for fuel or

obtain curved shapes for roof beams. So much of our natural woodland is left with the greater majority of trees of strange and distorted shapes, at best forming natural sculptures. The result of neglect is inadequate management of many of our forests and woodlands and neglect to harness their potential to provide employment and use for either rural or urban communities. So many woodlands are simply not managed at all, probably with the excuse that it is "in the interest of wildlife, bugs, bees and birds," "bio diversity", or "preservation." It is an uncomfortable truth that our woodlands, with the exception of plantation woodlands, either owned by us all, through the Forestry Commission, or other enlightened woodland owners, compared to those in other European countries, are extremely badly neglected or managed, with so little purpose or use, except for shooting pheasants and the like, that they are worse than the terrifying forest in "Snow White and The Seven Dwarfs."

*What, then is the Potential?:* The opportunity we have now to bring about change of attitudes and action is probably greater in our global, starkly unbalanced financial straits, than before, because now is a time for reassessing everything. Unemployment rising, funding sources limited, young people unsure of their futures and early retirement or redundancy among a widely experienced older generation, calls for new ideas and application of time and effort in areas previously ignored. Woodlands offer that opportunity with potential rewards.

### **Where does that change of outlook and action begin?**

All forms of appreciation of a need to change emerge among the younger generation, and the energy to achieve change is there. Leading the young into areas of opportunity is an immensely valuable role for an older generation.

In the case of woodlands, leading the young to understand the values of trees, woodlands and forests and the products of them all, can lead on to wise management and consequent productive values.

**If you agree, so far, with this proposition, how do we proceed?**

**The Forest Education Initiative** ([www.foresteducation.org.uk](http://www.foresteducation.org.uk)) emerged from educational work by **Epping Forest Centenary Trust** ([www.efct.info](http://www.efct.info)) on woodland or environmental awareness and conservation in Epping Forest, — 8,000 acres of woodland and natural open space on the doorstep of London, owned by the City of London, as conservators. Thousands of children from local schools, scout groups, children with learning difficulties or other disadvantages have gone through the woodland appreciation stage to undertake conservation work. All that in areas of neglect, or invasive species, and in pools, ponds and lakes around the Forest, clearing discarded household products, fallen trees, weeds which have crept surreptitiously into the Forest.

From that programme for young people came the idea of a **Forest Education Initiative**, ([www.foresteducation.org.uk](http://www.foresteducation.org.uk)) which was launched with the considerably assistance of Dr. David Bellamy in 1992. Now there are over 80 groups or “clusters” of local environmental and educational organizations in England, Scotland and Wales getting together, as almost never before, to see how to work together to bring more young people into woodlands, -- to learn about everything from team spirit, wildlife, nature, communication, mathematics, art, and music, out of the classroom, where the setting is natural, normal, fascinating, and wholly conducive to learning, so much more so than in the classroom with their bums on seats.

But Forest Education Initiative (FEI) has gone further, in adopting and promulgating the Scandinavian idea of **“Forest Schools,”** first introduced here by Bridgewater College in Somerset. This concept trains teachers from primary and secondary schools in the principles and practice of the “Outdoor Classroom.” FEI contacts the schools, encourages the programme of Forest School training, now available in eight colleges and growing, and locates the safe woodland sites for the schools to use as a base for their normal course work. This leads straight into woodland appreciation, with opportunity for the FEI

Clusters to add conservation work by school groups to their programmes, working with families and clubs or local associations. That, by bringing young people into woodlands for their own benefit in doing something thoroughly useful by improving the management of their local woodlands. The beneficiaries of this include the woodland owners, wildlife in the woods, the teachers and leaders and, above all, those who put their interest and effort into woodland conservation.

**What of the products of our woodlands?** Every non plantation forest, or woodland comprises a mixture of species, some of immediate value, such as our deciduous English oaks, chestnut, ash, beech, walnut, and other fruit trees, hornbeam, lime, and sycamore and, of course a wide variety of coniferous species. Clearly, outlets for all of that are needed so that not only employment can grow around the conservation work in the woodlands, but in extraction, conversion and use in building structures, general carpentry, joinery, flooring, furniture, farm equipment, fencing, works of art, boats, toys, and so on and so forth. Employment of those who never wanted to or were given no opportunity to go to university, those who may no longer have steady employment, and those who have retired from or become redundant, can turn their minds to these practical applications locally.

So, another potential is in encouraging the opportunities to learn Hand Skills for Life, both among the young as it used to be taught in all schools but also for adults of all ages. Another role for skilled craftsmen everywhere and for schools and colleges to bring back into their curricula. – especially now that schools can decide on ways of broadening the education they offer. Enough of this revelation of opportunity. Everyone of you who has read this article this far will know what to do to help get this Initiative from the opportunity stage to practical application wherever you are. Have a go, if you are not already doing as much or much more already. “Forests are Forever,” and forest products are the most environmentally appropriate material in the world for so many uses, with a degree of sustainability that surpasses all else. Another slogan to keep in mind: “There is No Timber without Trees.” -- from well managed woodlands and forests.

**Terence Mallinson**

President, The Forest Education Initiative  
Chairman, Epping Forest Centenary Trust

## The Marcus Wallenberg prize awarded to Finn

**T**he 2012 Marcus Wallenberg Prize, which recognizes a single research breakthrough by one scientist or a small group of collaborating scientists that will have a significant effect on the forestry and forest products industries, has been awarded to Mr. Mika Severi Viljanmaa, for his ground-breaking development of metal belt calendering technology resulting in better paper print surfaces with less fibre materials and higher production efficiency. The invention also paves the way for applications in pressing and drying with the

opportunity of becoming a wider platform technology expected to substantially enhance production efficiency, competitiveness and sustainability of paper and board making.

The Prize will be presented by His Majesty, The King of Sweden, at a ceremony in Stockholm on 1 October, 2012. On 2 October, a symposium will be arranged around the subject of the Prize-winning research and its impact on the forest products industries. For more information about the Marcus Wallenberg Prize, please visit [www.mwp.org](http://www.mwp.org)

# News from Guyana

In my last report (CFA Newsletter number 56, March 2011, pages 9-10) I commented on the background to the failed log export policy which came into effect in January 2009. Discussions are continuing on a revision of that policy, with no common ground between enterprises trading logs to Asia and enterprises processing timber for the domestic market. In support of the discussions, the Guyana Forestry Commission (GFC) has conducted more surveys of local demand to show which timbers appear to be logged in surplus of local demand and for which timbers there appears to be a deficit in supply in relation to demand. The GFC unfortunately fails to make clear other purposes for a log export policy, which might include:

- a. conservation and better management of the rapidly dwindling stocks of the commercially most desirable timbers from the natural tropical rainforest.
- b. rationalization of local demand, such that government procurement offices do not continue to specify the use of large sizes of prime timbers for purposes which could be satisfied by smaller dimensions and lesser used species. These same offices should also pay more attention to the national building code (1999) which has a whole chapter on specification of hardwoods. Like many government documents in Guyana, this code is little known and not easy to obtain. A meeting in September 2011 concluded that the shortage of local lumber alleged through much of 2011 was really a shortage of the best quality of the best timbers; there was plenty of smaller sizes and lesser quality timber.
- c. attention to the National Development Strategy (NDS, 1995-7) and National Forest Policy (NFP, 1997, and supporting National Forest Plan 2001) which promote in-country processing and value-adding in the forest sector. There are no national policies – that is, debated and endorsed by the National Assembly (parliament) – which support log export. The NFP was slightly revised in 2011 but the draft revision has not yet been debated in the National Assembly. The NFP also mentions the additional employment, skills development and value addition through in-country processing of forest products.
- d. an explanation of valuation of natural resources and the right of governments, on behalf of citizens, to capture as revenue a fair share of the profits from exploitation of these resources. In relation to log exports, this could include a system for splitting the excess profits from exporting unprocessed logs between the log exporter and the Treasury.

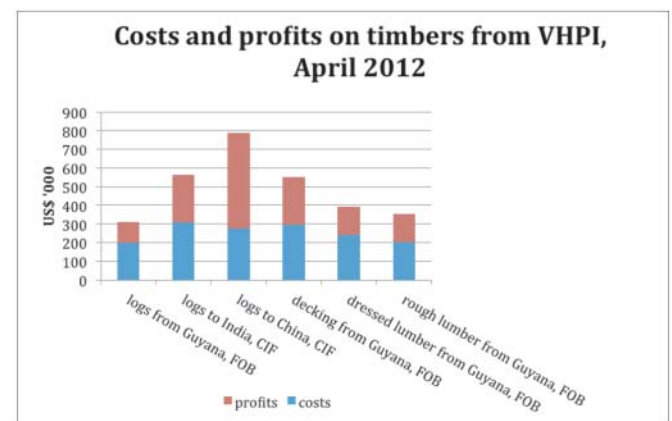
The reluctance of the GFC to mention these matters appears to be related to the long period of regulatory capture by log traders. The World Bank noted as far back as 1993 that the GFC was a perfect example of the capture theory of regulation, whereby the regulatory body is controlled by the industry it is supposed to regulate (Colchester, M. 1997, *Guyana: fragile frontier*, page 102, quoting *Stabroek News* 29 October 1993).

The data sparsely released by the GFC do not provide support for its conclusion that the log export policy has curtailed some exports. The export commission (tax) on unprocessed logs and squared timber is set far too low (a maximum of 12 per cent of declared FOB value) to influence log buyers, in relation

to the huge profits on log exports to Asia. Where there appears to be a decline in production of some species, it could be argued that this is evidence for 'peak timber', a decline induced by decades of selective over-harvesting. But the GFC does not release data to compare the pre-harvest inventory with the production records. Piecing together data for the popular hardwood purpleheart (*Peltogyne venosa*), which grows naturally in clumps, the average stocking in primary forest is 0.5–1.0 m<sup>3</sup>/ha out of an average commercial stocking of 100 m<sup>3</sup>/ha. In contrast, the proportion of purpleheart in the output is up to 13 per cent, so perhaps a 25-fold or greater selective over-cutting, as well as an extraordinary over-representation in the proportion of log exports, up to 36 per cent by volume.

Again in support of the log export discussions, the GFC revised and expanded in January 2012 its useful 2006-7 analysis of relative profitabilities of different kinds of product. Perhaps because of the regulatory capture, it did not draw attention to the profits from log export. Building on the GFC analysis, one can see that the costs and profits from preparing timber decking in Guyana for export are almost the same as the costs and profits of logs exported from Guyana to India, where they can be turned into value-added products -

Product	FOB or CIF	Costs US\$/m <sup>3</sup> of log	Profits US\$/m <sup>3</sup> of log
Logs from Guyana to India	FOB Guyana	160	90
Logs from Guyana to India	CIF India	244	206
Logs from Guyana to China	CIF China	220	410
Decking from Guyana	FOB Guyana	237	206
Dressed sawnwood from Guyana	FOB Guyana	192	122
Rough sawnwood from Guyana	FOB Guyana	161	121



The commercial advantage to export logs is clear when the Government of Guyana fails to use regulation and fiscal measures to make the implementation of national policies for in-country timber processing commercially feasible.

Who gains from the present situation? Obviously the log exporters, although they are lobbying hard for reduction or elimination of the log export commission (tax). But also and not obviously the GFC, which has added over US\$ 1 million from this tax to its income per year, and that income is not paid into the national Treasury.

**Janette Bulkan**  
CFA Governing Council



# Criteria for good REDD+ activities that focus on poverty reduction and development



Tolulope Daramola

Forest carbon projects focusing on conservation and restoration of degraded lands across a range of developing countries have helped us to understand how forest ecosystems can generate both global and local benefits. REDD+ is a mechanism designed to reduce emissions from deforestation and forest degradation, predominantly in the developing tropical countries and providing alternative source of livelihood to leverage the dependency on forest.

The fundamental of the challenges facing the developing countries can be linked to extreme poverty and hunger. Although there has been drastic reduction in the global poverty rate, Africa hasn't seen much progress in terms of the absolute numbers of poor people compare to China. See fig.1 below. Poverty in Africa is predominantly rural where most of the world forests are situated. More than 70% of the African poor people live in rural areas and depend on agriculture for food and livelihood, yet development assistance to agriculture is decreasing (Rural poverty portal 2012). Agriculture alone accounts for 29% of the gross domestic product (GDP) in developing countries and provides jobs for 65% of their populations (CTA 2011). But yet agriculture has failed to receive the attention it deserves in the climate change policy arena. REDDplus became a major focus of recent negotiations but there is no work programme for agriculture as there is for various other issues under the UNFCCC (CTA 2011).

Placing a greater emphasis on agriculture in negotiations on climate change, as in the development of national policies, will ensure that agriculture fully contributes to efforts to adapt and mitigate without undermining food production and the fight against poverty (Hailu, and Campbell 2011). REDDplus needs to be positioned in a way that it does not threaten food security. Establishing agricultural work program within REDD framework

activity would put agriculture at the heart of climate change negotiations and policy making, ensuring that it makes a full contribution to both adaptation and mitigation without threatening food production and poverty alleviation.

To ensure sustainability and risk reduction for investors and buyers, REDD must be design in a way that will work for the poor (PEP 2008). The local communities have the right to be fully involved in the project implementation and understand fully the economic benefits of project implementation. In addition, not undermining their right of fare equity in benefit sharing accruing from REDD project. Lack of upfront capital to pre-fund REDD project could impair REDD from meeting the local needs. Depending on whom bears the costs for meeting standards and covering upfront costs, these factor could significantly reduce the potential of REDD to benefit the poor. To overcome these issues, alternative financing sources to cover upfront costs will need to be explored at different levels.

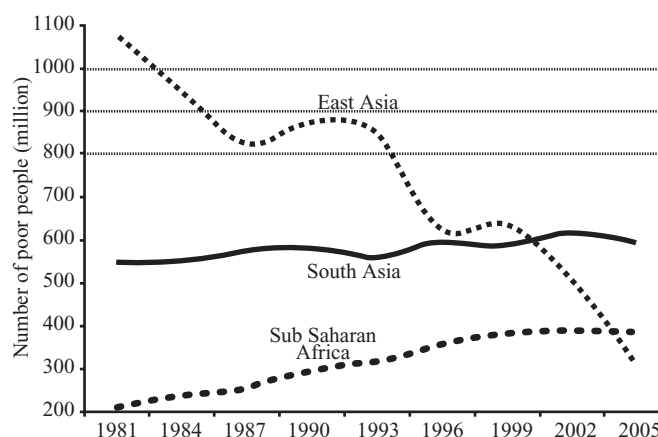


FIGURE 1 *The World Bank poverty estimates 2009*

The community involvement and transparency is an imperative factor for the success of REDD project. REDD should be founded on Free, Prior and Informed Consent, designed in active participation with affected local communities, and conserve biodiversity (FEI 2011). The report of the Friends of the Earth International in 2011 faulted the first big REDD project in 'Central Kalimantan area of Indonesia'<sup>1</sup>. The project was reported to have violated the right of the indigenous people. Similar story was recently voiced by the Indigenous Peoples Confederation of Honduras (CONPAH) in a strong statement about the lack of consultation related to REDD+ by the Honduras government, and calling for the withdrawal of the draft REDD Readiness it submitted to the Forest Carbon Partnership Facility.

<sup>1</sup> The Kalimantan Forests and Climate Partnership (KFCP) is a bilateral forests and climate agreement between the Governments of Indonesia and Australia, that was first announced in 2007. It is intended to produce carbon offsets by reducing emissions from deforestation and land degradation.

The potential of REDD project in alleviating poverty and contributing to a sustainable development can be attributed to an approach designed on a transparency and equity principles. Though there are still many pilot REDDplus project in the pipeline, significant efforts have already been invested in REDD at the national and international level (CIFOR 2010). To implement REDD successfully, similar attention now needs to be given to how to translate REDD into action on the ground that would significantly affect the lives of the local communities in a positive way. REDD offers a critical opportunity to enhance the well being of forest dependent communities, it is more likely to be successful if they are build on, rather than conflict with, the interests of local communities and indigenous groups (CIFOR 2010).

**Tolulope M. Daramola**

CFA Governing Council and Global Change Management,  
Faculty of Forest and Environmental Management. Eberswalde  
University for Sustainable Development, Eberswalde, Germany.  
Email: t.daramola@yahoo.com

## REFERENCES

- CGIAR - Farming's climate-smart future. 2011. Placing agriculture at the heart of climate change policy [http://ccafs.cgiar.org/sites/default/files/assets/docs/farmings\\_climate-smart\\_future.pdf](http://ccafs.cgiar.org/sites/default/files/assets/docs/farmings_climate-smart_future.pdf).
- CIFOR. REDD, forest governance and rural livelihoods - The emerging agenda. [http://ccafs.cgiar.org/sites/default/files/pdf/REDD\\_Wollenberg\\_2010.pdf](http://ccafs.cgiar.org/sites/default/files/pdf/REDD_Wollenberg_2010.pdf)
- Climate Connections <http://climate-connections.org/2012/02/28/honduras-world-bank-redd-project-not-consulting-indigenous-peoples/>.
- Friends of the Earth International. 2011. Australia's carbon offset project in central Kalimantan. <http://www.foei.org/en/resources/publications/pdfs/2011/in-the-redd-australias-carbon-offset-project-in-central-kalimantan>.
- German NGO forum on environment and development (2011): policy paper on REDDplus. Limiting climate change, promoting biodiversity, protecting human rights, ensuring financing [http://unfccc.int/files/methods\\_science/redd/submissions/application/pdf/redd\\_20120602\\_german-ngo-forum.pdf](http://unfccc.int/files/methods_science/redd/submissions/application/pdf/redd_20120602_german-ngo-forum.pdf).
- PESKETT, L., HUBERMAN, D., BOWEN-JONES, E., EDWARDS, G. AND J. BROWN (2008): Poverty Environment Partnership (PEP) Report (2008): Making REDD work for the Poor. <http://www.odi.org.uk/resources/docs/3451.pdf>.
- Rural poverty in Africa portal <http://www.ruralpovertyportal.org/web/guest/region/home/tags/africa>.

---

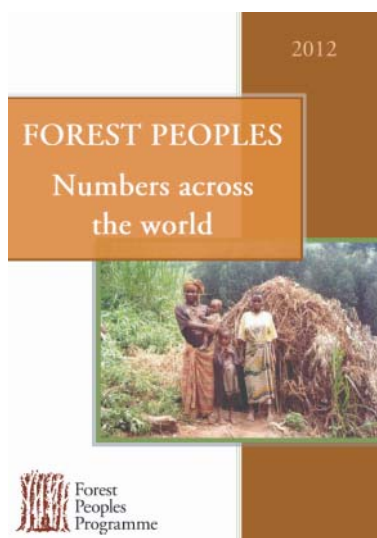
# Publications

---

## Forest Peoples: Numbers across the world

### Forest Peoples Programme

By providing estimated figures for indigenous and forest peoples' populations in countries and regions across the globe, this new Forest Peoples Programme report seeks to raise awareness of the existence of peoples who primarily depend on forests for their

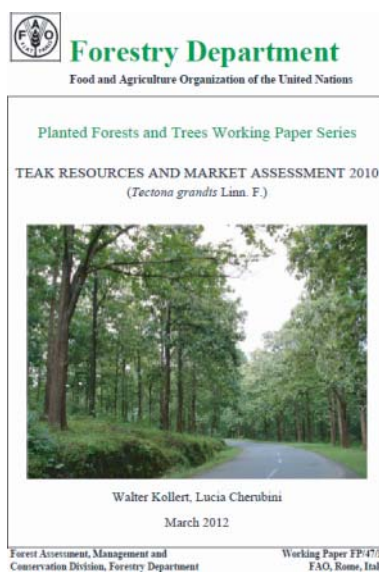


livelihoods, and to enhance their visibility as key actors and rights-holders in the management and use of forests and forest resources. These figures may serve as a useful reference in advocacy for the recognition of forest peoples' legal and human rights. The report can be downloaded free of charge at [www.forestpeoples.org/](http://www.forestpeoples.org/)

# Teak resources and market assessment 2010

FAO

FAO has just published a new Working Paper on the state of one of the world's most valuable timber trees – teak (*Tectona grandis*). It covers not only the countries where the species occurs naturally, India, Laos, Myanmar and Thailand, but also the many countries in Africa, Central and South America and Asia where it is being planted. Sadly, the survey of 60 tropical countries shows that natural teak forest area, which is about 29 million ha, is declining, by 385,000 ha or 1.3% between 1992 and 2010, but the area of planted teak has increased to



over 4 million ha, mainly through projects of the corporate and private sectors.

The global market for teak timber is governed by trends in the Asian market, where 90% of the existing stock is found, and in particular by India which not only manages much of the resource but is the world's largest importer.

Available to download free of charge at [www.fao.org/forestry/plantedforests/67508@170537/en/](http://www.fao.org/forestry/plantedforests/67508@170537/en/)

---

## Review

---

**There is honey in the forest: the history of forestry in South Africa.** 2010 (2<sup>nd</sup> edition). Compiled by Willem Olivier. Published by the Southern African Institute of Forestry, saif@mweb.co.za No price stated.

**Uganda Diary: the life of a forester in the years before Amin.** 2011. James Lang Brown. Radiata Books. Available from the author at Wheelwrights Cottage, Bruton, Somerset BA10 0JL at £14.95 including post and packing in UK, or contact the author at info@jameslangbrown.co.uk

The title of Willem Olivier's book on the history of forestry in South Africa comes from the Zulu saying *Zinoju ehlathini*, meaning that there are good things ("honey") to be found in the forest. And, my goodness, there are plenty of good things to be found in this fact-filled account of South Africa's pioneering contributions to the creation, conservation and utilisation of forest resources in a harsh environment! It is difficult in this short review to do justice to the book, covering more than 300 years of forest management in indigenous forest and planted forests, which has been published by the Southern African Institute of Forestry to acknowledge the work of the nation's foresters - nearly all men, and mostly white - who have contributed to the protection and conservation of 336,000 ha of indigenous forest and the establishment of 1,266,000 ha of plantations. Today that resource produces over 11 million cubic metres of softwood and nine million cubic metres of hardwood timber yearly, worth Rand 5.2 billion to the growers and R18.5 billion to the primary processors, while forest industry employs 170,000 people. This compares with Uganda, for example, with nearly 3 million ha of

forest from which are produced nearly 3.5 million cubic metres of industrial roundwood (plus 38.5 million cubic metres of wood fuel), or neighbouring Mozambique with 39 million ha of forest, producing 1.3 million cubic metres of industrial roundwood.

The book starts with descriptions of the foresters and the forests from the first arrivals of Europeans around 1670, and there is an interesting account of a forester's life around 1910; W. E. Baldwin not only suffered repeated attacks of malaria as well as dysentery but lost his dog to a crocodile, his mule was "disembowelled" by a hippo and he himself suffered from depression due to these occurrences as well as the drought, intense heat, snakes in his house and his isolated station. Not in fact so different from some of the experiences of James Lang Brown, described in the next book reviewed!

South Africa made important contributions to scientific forestry in a number of ways. One of them, which benefited the whole African continent, was the introduction of exotic trees such as the eucalypts (the first was *Eucalyptus globulus* in 1828), wattle (*Acacia mearnsii* from 1864), and a number of pines - *Pinus pinaster* and *P. pinea* may have arrived at the end of the 17<sup>th</sup> century, with the first commercial plantations of the former between 1825 and 1830. *P. radiata* had followed by 1865, and the Mexican pines such as *P. patula*, in the early years of the 20<sup>th</sup> century. These exotic introductions in turn have led since the 1950s to tree improvement programmes, in which South Africa has been a world leader.

Another major contribution, of global importance, was the insight provided by Henry Fourcade in 1889 into the importance of matching local conditions for introduced species to sites similar to their native habitat. But Fourcade failed to distinguish between Mediterranean climates with winter rainfall and those

in which most of the rain falls in the warmer months; this was left to D.E. Hutchins fourteen years later, who forecast (correctly) that many of the species from winter rainfall provenances “must sooner or later fail”.

Plantation establishment and management is described in some detail, especially the work of Ian Craib who published *Thinning, pruning and management studies on the main exotic conifers grown in South Africa* in 1939, which advocated wide spacing and broke completely with European practice at the time. A description of Craib's life in the book describes him as possessing “a rare combination of talents . . . a keen analytical brain [with] the necessary organizing ability to get his ideas accepted and put into practice. . .” His research determined post-war establishment practices in East Africa and influenced planting practices elsewhere as well.

The work done in South Africa on run-off and stream flow from afforested watersheds has also been applied outside the Republic. As the book tersely states: “South Africa is a country poorly supplied with water” having an average yearly rainfall of 440 mm, less than 10% of which reaches the rivers. Research into the influence of timber plantations on run-off was started following the Empire (now Commonwealth) Forestry Conference of 1935, was carried out through intensive work at a dedicated research station, and ultimately led in 1972 to the introduction by the Government of a system of regulation of afforestation.

A chapter is devoted to private forest industry, including the establishment of the wattle growers' cooperative, the South African Pulp & Paper Industries (SAPP) in 1936, Usutu Forests in 1949, and Mondi Forests (now York) in 1966. Other chapters are devoted to sawmills, timber farmers' cooperatives, tertiary education, forest research, protection from fire and attacks from insects and disease, as well as public relations. The last-named records that as late as 1960 private individuals had to apply for a permit to enter public forests and it was not until the 1970s that the policy changed and the forest service became more welcoming to taxpayers.

The book tells of a number of international contacts throughout the history of South African forestry: for example, seed collection trips to Australia for the eucalypts in 1923, to Mexico in 1947 and 1969 for pines, wattle, timber/pulp properties. The benefits arising from the exchange of information among foresters at the Empire (later Commonwealth) Forestry Conferences is stressed. But international sanctions against the apartheid regime much reduced these contacts, until Nelson Mandela was elected in 1994 as the first President of South Africa on a vote of all South Africans. I myself recall attending a meeting at the University of Stellenbosch not long after this, and witnessing at first hand the hunger of South African foresters to renew their international contacts.

In 1992 the Government sold forest plantations to the South African Forestry Company, one of the largest privatisations of State forests in the world at that time. Then in 1994 the new Government introduced forest policies covering Land Reform (including the rights of labour tenants to property), and Labour Relations in 1996, followed by the National Forests Act and the National Water Act in 1998, which controversially identified forestry as the only stream reduction activity!

An Annex describes some of the significant events in the country's forestry sector, including the impact of HIV/AIDS on

forestry workers, whose infection ranged from 23% to 39% in 2002, and reminded me of the arrival of the *Sirex* wood wasp from the Mediterranean, first detected in Cape Town in 1994, and of the disastrous fires of 2007, which destroyed some 84,000 ha of plantations. All these events are more fully described in the text.

A slightly disconcerting feature of the book is the inclusion of a few chapters and boxes in Afrikaans – denying the information therein to those, like myself, without knowledge of the language. Perhaps more could have been made of the role of South Africa in privatising its plantations and in offering training to foresters from other African countries, and more of the post-1994 impact of majority rule. But those niggles aside, I strongly recommend its purchase to the libraries of every forest service and forest research institute in Africa, as well as to all foresters with an interest in African forestry.

For those of us who served in Uganda before 1971 and the bloody dictatorship of Idi Amin, the title of James Lang Brown's book brings it all back: the golden age of a Forest Department whose *esprit de corps* and dedicated staff at that time put many other forest services, even in the developed world, to shame.

The demarcation of forest reserves in Uganda started in the 1930s and continued after the War in the 1950s when inventory of many of the valuable forests was followed by the allocation of concessions for logging and the plantation programme got into its stride. Among the author's varied duties were forest reservation in Karamoja, the enumeration of natural forest in a number of Districts and, less pleasantly, dealing with encroachers in the Mabira forest of Mengo District – the same forest that has recently been threatened with conversion into a sugar estate. The author used to full advantage of the opportunities offered by his various postings to make a number of safaris to places – especially the mountains – that were in those days little developed.

I myself served in Uganda, indeed I was District Forest Officer of the combined charge of Ankole and Kigezi Districts where the author also served on his final assignment, so I found the references to people and places that I knew most interesting. I could carp and say that there is little analysis of the issues, save some comments on political developments leading up to independence, and none on technical issues or practices. For example, regarding the latter, what did the author think, in retrospect, of the policy of poisoning “weed” trees in natural forest, and the impact of this on the diversity of fauna and flora? But then, what you see is what you get – these are diaries, no more and no less, which record day to day events, without the benefit of hindsight.

His book is full of accounts of the foresters – and many other characters - who plied their profession in Uganda in the 1950s and early 1960s, and provides invaluable background to the history of pre-Independence Uganda. It is easy to read and is illustrated with numerous excellent colour photographs. I recommend it strongly to anyone with an interest in Uganda and its forests.

**Jim Ball**  
CFA President

---

# Around the World

---

## UK: ICF announces important films on catastrophic plant disease

The ICF National Conference was used as a launch pad for two important films intended to combat the threat to Britain's woodlands posed by two devastating Phytophthora pathogens, *Phytophthora ramorum* and *Phytophthora kernoviae*. The films, which come in short and long versions, provide vital information and advice on how to prevent the spread of the pathogens.

The shorter film is aimed at people with a less intimate knowledge of plant diseases and is likely to appeal to younger age groups or those involved in social media; while the longer film is more detailed and intended for professionals working in areas at risk of infection by the disease.

The films can be viewed online via the following links:

Short film: <http://theoryfilms.wistia.com/m/D34dfm>

Long film: <http://theoryfilms.wistia.com/m/8P4dgm>

The release of the films was announced to delegates at the ICF National Conference by ICF Executive Director Shireen Chambers FICFor at 11am on Wednesday 16 June. Speaking to a packed conference hall, Shireen said: "We would strongly urge you to do what you can to draw people's attention to these films. They will be of huge help in reaching those members of the public who use and care about our woodlands but are unaware of this potentially catastrophic pathogen."

The films have been produced as part of the Defra/Forestry Commission Tree Health and Plant Biosecurity Action Plan and the Defra Phytophthora ramorum and Phytophthora kernoviae Disease management Programme. Production was led by the Food & Environment Research Agency (Fera) and has involved a broad-based consortium from both within and outside of Government circles.

[charteredforesters.org](http://charteredforesters.org)

## Africa: Extinct trees rediscovered in Tanzania

Two trees, both thought to be extinct until they were discovered some years ago, were then lost – and rediscovered recently in dry forest on the Tanzania coast, according to the UK *Guardian* newspaper of 23<sup>rd</sup> March 2012 and originally reported in the *Journal of East African Natural History*.

The first is *Erythrina schliebenii*, which is in the same genus as the well-known Uganda Coral (*E. abyssinica*) and has the same spectacular bright red flowers and spiny trunk. It was originally collected in the 1930s and was collected again in 2001 – but then the patch of forest in which it was found was cleared in 2008 and it was feared lost.

The second is *Karomia gigas*, which was known only from a single specimen found in 1977 in coastal Kenya – but which was cut down shortly after its discovery. Another tree was then found 600 km south in Tanzania in 1993, but a later search failed to locate it.

Last year an expedition from the University of Dar es Salaam found small populations of both species in rocky sites in remote coastal forest near Kilwa, in south-east Tanzania. Although both trees are secure for the moment, there is considerable pressure on land in the vicinity and they may still be under threat.

**Jim Ball**  
CFA President

## Uganda 'tree banks' offer investors good returns

For Peter Nyeko, a Ugandan businessman always on the lookout for the next hot investment, nothing in the world beats the humble tree. Five years ago, he and two partners put their money into planting a stand of eucalyptus outside Kampala, which he calls his "tree bank." Now, he said, he's just waiting for the money to start rolling in.

"A tree bank's pretty much the best kind of investment you can put out there," Nyeko said. "You could invest \$50,000 and in 10 years you're harvesting trees worth five million dollars. As

long as you're willing to wait for about 10 years for a return on your capital employed, it's pretty amazing. It's just like a trust fund."

Nyeko isn't alone. More and more Ugandans are discovering the financial value of tree plantations, thanks to a government and international donors eager to promote planting in a country whose natural forests are disappearing fast. The phenomenon has attracted some controversy but that hasn't stopped hundreds of private investors from jumping on board. They are very

interested. We are doing what we can to make them more interested”, said Gonza Araali of Uganda’s National Forestry Authority. “We are telling them it’s an investment, it’s an insurance. It’s where they can get income and be able to sustain themselves, and also pay school fees for their children.”

What makes trees so profitable is Uganda’s growing demand for timber and timber products. Over 95 % of Uganda’s population of 33 million depend on firewood or charcoal made from wood for cooking, according to the German development agency GIZ. The country’s booming construction industry has also helped make timber an increasingly valuable commodity.

Supply isn’t keeping up. The Kampala-based Sawlog Production Grant Scheme (SPGS) says Uganda has virtually no mature tree plantations left, and that the sector is in serious need of investment. Without enough cultivated tree plantations, most Ugandans turn to natural forests for their timber. Some 40 % of Uganda’s forests have vanished over the past 20 years, and the National Environment Management Authority has warned that if deforestation continues at the present pace, the country could have no natural forests left at all by 2050.

There are other environmental factors for potential investors to consider. Nyeko said that when he made his investment, he had one eye on the carbon trading markets. Right now it isn’t possible in Uganda for individual planters to claim carbon credits for trapping CO<sub>2</sub>, but Nyeko thinks that could soon change.

“That would open up another revenue stream as well,” he said.

According to Nelly Bedijo of SPGS, a nonprofit funded by the European Union, tree plantations have the potential to make a lasting impact on the Ugandan economy. Not only will plantations create thousands of jobs, she said, but “there are going to be numerous timber processing industries that will invest in Uganda — we’ll be seeing a lot of sawmills, and with time maybe we shall even have paper processing plants.”

“Maybe we shall even stop importing timber from other countries,” she added, noting that at the moment Uganda buys some of its wood from neighboring Congo. A local newspaper, *The Independent*, reported that the country imported around \$5.5 million worth of timber in 2011.

SPGS promotes tree plantations by awarding grants that cover half the cost of planting. In order to qualify, candidates, who come from all walks of life, must own at least 25 hectares of land. It’s a requirement designed to discourage all but the most serious planters.

Bedijo estimated that at the moment, such planters can still only be counted in the hundreds. But she said SPGS, founded in 2004, will have helped to plant a total of 40,000 hectares of trees by next year, three quarters planted since 2009. Burgeoning interest in the program, she said, outstrips their capacity.

“It’s growing so much, and it’s getting a lot of attention. We are receiving a number of applications — it’s overwhelming,” she said.

Tree planting advocates are quick to point to ways in which plantations can benefit local communities as well as wealthy investors. SPGS, for instance, provides free planting advice and seedlings to poorer villagers who don’t have much land, as long

as they can form an association of at least 20 people. So far, the organization has helped over 130 such groups plant trees. The wood produced is used by communities for fuel, fencing and construction, and SPGS says the skills people learn can later help them find work with large-scale growers.

Araali said even if they don’t grow trees themselves, the communities living around tree plantations benefit in a number of ways. “We employ them in slashing, in clearing, in protection of those forests from fires. We have bore holes, they access water freely. We allow them to put their bee hives in our forest reserves.”

But others say tree plantations actually come at a significant social cost. Last year stories circulated in Uganda of violent land grabbing, after international relief agency Oxfam released a report claiming that the UK-based New Forests Company had evicted tens of thousands of people from their land in order to make way for tree plantations.

“Today, the people evicted from the land are desperate, having been driven into poverty and landlessness. In some instances they say they were subjected to violence and their property, crops, and livestock destroyed,” the report stated.

The New Forests Company said those evicted were illegally encroaching upon the land, but it was nonetheless forced to suspend tree planting after its World Bank funding was withdrawn.

Nor is everyone convinced all tree plantations are good for the environment, especially since most of the trees are fast-growing imported varieties like eucalyptus, pine and teak.

“You need to really be careful about which tree you introduce”, said Abby Onencan of Nile Basin Discourse, an environmental organization based in Entebbe, Uganda.

“A lot has been said about the eucalyptus. There are some breeds which are really bad, they really cause a lot of destruction and should not be planted near the water. If we plant trees around the Nile that take up the water, then the water might never reach Egypt,” Onencan said.

But Araali argued that when planted responsibly, even the much-maligned eucalyptus can have a positive impact on the environment. “They grow very fast. People are able to get timber out of them, and the rate at which they would have gone to the natural forest to cut trees reduces”, he said. “They also help in conservation, which people are not seeing.”

For his part, Peter Nyeko is convinced that his trees and the wood they provide will benefit Uganda. “The more people that get involved now, the better, because the population is rising, demand is shooting up, and we just don’t have enough timber growing to sustain our demand,” he said.

But Nyeko’s primary motivation for planting is still very personal. “I thought, I can’t afford to put together a trust fund right now, so why not set up a tree bank?

“In 10 or 20 years you will have enough return on capital employed to sustain a family. It would be nice for our kids to have as good a childhood as we have had,” he said.

**marketwatch.com**

## Bhutan: Less than half 10th Plan target achieved

Shortage of manpower and budget have led to achieving only 1.5 percent of the forest in the country as community forest against the target of four percent in the 10th Plan for the RNR sector.

Community forests are government-reserved forests, where a minimum of three households is required to form a group. Each household/group member is allowed to access forest products within 2.5 hectares of the forest area.

Being a member means the households can access forest-based products like timber on a nominal amount decided among the members.

Most dzongkhags, said forest officials, have established more CFs than their target, but are still not able to meet their tenth plan goal. Zhemgang, for example, has 17 CFs against their target of eight.

These issues came up during the two-day dzongkhag forestry workshop in Thimphu, which was attended by 20 dzongkhag forest officers (DFO).

Social forestry and extension division's (SFED) officer Karma Jigme Tempel said there are about 150 forestry officials across the country today, when they require at least a DFO for every dzongkhag, and an officer at the gewog level.

Trashiyangtse DFO Phuntsho Tobgay said four gewogs in the dzongkhag have no forest officials. "Because of the shortage, a gewog officer has to handle multiple tasks, and more than one gewog, which not only confuses them but delays actions to be taken," he said.

He also said eco-tourism areas are given more attention, while area outside protected land and people living in them do not get attention, even though they have the potential.

**kuenselonline.com**

## Canada: Forest industry says boreal protection goals still on radar

Canadian forest product companies admit they are not going as fast as they had hoped in fulfilling a historic May 2010 agreement to protect the nation's boreal forest. "It's a complex agreement but we're making progress," said Mark Hubert, vice president of environmental leadership at the Forest Products Association of Canada. "Do we wish we were moving faster? Absolutely, but . . . there's an extraordinary amount of work going on by both parties to make sure that we get to the finish line, so to speak."

Hubert made the comments in response to claims from some environmental groups involved in the Canadian Boreal Forest Agreement that 80 per cent of the goals established in the deal to protect forests and species at risk still have not been achieved.

Eighteen different member companies in the association are part of the deal to protect about 29 million hectares of forest from logging by 2013 in exchange for the suspension of "do not buy" campaigns led by Greenpeace, ForestEthics and Canopy. The deal also calls for aboriginal treaty rights and traditional territories to be respected. But a status report by the three environmental groups found that 58 out of 75 goals in the deal had not been met, while only 10 were delivered on schedule.

"Everyone had good intentions two years ago, but this update is a wake up call that we have a collective responsibility to deliver on the promises of boreal forest protection and improved forest practices within a meaningful time frame," said Greenpeace spokeswoman Stephanie Goodwin. "Companies

that are buying boreal forest products are reasonable in demanding products from forests that are well-managed and protected."

Another conservation group — a chapter of the Canadian Parks and Wilderness Society — voiced optimism about the months ahead, suggesting that the criticism was more a strategy to maintain pressure on the industry to deliver its commitments. "They (Greenpeace, Forest Ethics and Canopy) operate as watchdog groups and that's their role," said Janet Sumner, executive director of the CPAWS Wildlands League, a chapter of the Canadian Parks and Wilderness Society. "Our role is to be the conservation group that understands science, knows how you do conservation planning, walks the land with the forestry companies, meets with the First Nations, builds agreements across communities and goes into government and sells the plan."

Comparing the exercise to a 12-step process, Sumner suggested that all of the parties were now in "step 10," but that they are in a race to complete their goals. "To make the plan be able to stand on its own two feet you actually have to take it out and test drive it with the various people who are going to live with that plan," she said. "There are communities, there are decision makers like First Nations, and there are governments at play."

**Canada.com**

## China: New Shanxi forest fends off sandstorms

**N**orth China's Shanxi province has tamed about 1 million hectares of desert in the past 12 years to help reduce and fend off sandstorms hitting Beijing and its neighboring regions, according to local authorities.

The desert in northern Shanxi is one of the three major source of sandstorms that can affect Beijing and Tianjin. Work since 2000 has formed a forest shelter belt running 230 km east to west, reducing risks of desert encroachment and also blocking sandstorms from further north, said Zhang Yunlong, chief planner of the Shanxi provincial forestry department.

The desertification, which was caused by poor farming and overgrazing practices, has been significantly alleviated, according to Zhang. "A decade on, we have created a miracle in planting trees on a loess plateau area where drought and gusts severely hinder growth," said Fu Cunxin, head of the county publicity department in Youyu.

Trees on the hard-grown silty loess require replanting at least three times before they can survive, Fu explained. "Though the afforestation program has made great achievements, there is still a long way to go," warned Zhang, adding that another 1.1 million hectares of desert is to be tamed in the second phase of the project.

Shanxi is among five provincial-level administrative regions in north China, also including Beijing, Tianjin, Hebei and Inner Mongolia, that have made joint efforts in reducing and blocking sandstorms.

China is one of world's major victims of desertification, with the phenomenon affecting more than 27 percent of the total land area and threatening the livelihoods of 400 million people.

[peopledaily.com.cn](http://peopledaily.com.cn)

## Europe: The Story of REDD

**A** new animation about reducing emissions from deforestation and forest degradation (REDD) was launched at the annual meeting of the Forest Movement Europe in Portugal, 28 April 2012. Wolfgang Kuhlmann of ARA, one of seven NGOs that supported the film, explained that "[the] film attempts to explain the key issues in a simple-to-understand way ... global deforestation cannot be solved without addressing the over-consumption that drives deforestation."

UN climate talks have included forests since 2008, but real progress has yet to be made; the animation explains that this

lack of progress can partly be blamed on an incorrect focus. With the next round of UN climate talks starting in Bonn, Germany, on 14 May 2012, the film serves as a timely reminder to European governments that committing to addressing the drivers of deforestation in the EU is a critical first step to reducing forest loss.

The film, which can be viewed at [www.fern.org/storyofredd](http://www.fern.org/storyofredd), was produced by FERN and is also available in French and Spanish.

[Fern.org](http://Fern.org)

## Fiji: FSC to certify chips

**T**ROPIK Wood Limited will soon have its woodchips to Japan certified as an environmentally-friendly product. Speaking to landowners earlier this week, Tropik Wood Ltd chief executive officer Faiz Khan revealed that Fiji's woodchips would have to be certified by the Forest Stewardship Council. He said this was because Japanese buyers had indicated they would only buy FSC-certified woodchips from the beginning of next year.

According to the FSC website, the certification is a voluntary market-based tool that supports responsible forest management worldwide. FSC-certified forest products are verified from the forest of origin through the supply chain. The FSC label ensures that the forest products used are from responsibly harvested and verified sources or companies. One of the principles or criteria that forest companies have to meet is the maintenance or

enhancement of long-term social and economic wellbeing of forest workers and local communities and respect of workers' rights in compliance with International Labour Organisation conventions.

The companies also have to appropriate monitoring and assessment activities to assess the condition of the forest, management activities and their social and environmental impacts. Mr Khan said obtaining the FSC certification would cost them \$0.5million. He also advised the landowners on the need to reduce harvest over the next few years.

Mr Khan said although they could load ship 16 woodchip vessels from Viti Levu for export, it would not be appropriate because they needed to focus more on its sustainability.

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



## Brazil: The battle for Brazil's rainforest

**A** new bill in Brazil seeks to relax the rules governing forest preservation in the Amazon.

The new forestry bill is a victory for Brazil's agricultural lobbies. An economic boom fuelled by high commodity prices has boosted their political influence.

They argue that existing laws are too strict - classifying the majority of farms as illegal and their owners, criminals.

Large parts of the Amazon forest destroyed in past decades have become productive farmland. Soy farms, for example, have helped make Brazil the world's second-biggest producer.

Many in President Dilma Rousseff's Workers Party back environmental causes but others want to further exploit Brazil's vast natural resources to speed up growth. Rousseff's government backs new dams, roads and mines in the Amazon.

The parliamentary vote however is being seen as a setback for the government. Officials close to the president say she is considering a veto of parts of the forestry bill.

Brazil established its forest code in 1936 and the current version has been on the books since 1965.

In less than two months the country will host a UN environmental conference to mark the 20th anniversary of the Earth Summit of 1992. Environmental groups say the forest bill will speed up deforestation in a country with the world's largest rainforest.

So, are Brazil's actions setting a worrying environmental precedent? Will Rousseff try to preserve her environmental credentials by vetoing the forestry bill, or will she cave in to the powerful agricultural lobbies?

Joining the discussion on *Inside Story Americas* with presenter Shihab Rattansi are guests: Andrew Miller, an advocacy coordinator for Amazon Watch; Joao Augusto de Castro Neves, a Latin America analyst at Eurasia Group focusing on Brazil; and Mark London, a filmmaker and author who has extensively documented the changes in the Amazon region.

### Key provisions in Brazil's forestry bill:

- Allows smaller farmers to cultivate land close to hilltops and streams, which are more vulnerable to erosion
- Waives fines for illegal tree-clearing before 2008 but larger landholders will still have to replant cleared areas or preserve a similar size of land somewhere else
- Authorises the state and local governments to determine how much area should be preserved as standing forest

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

## India: How to arrest forest degradation

**N**ative forests are under threat across India. Regional studies in the country's biodiversity hot spots and other regions of conservation significance including the Himalayas, Eastern and Western Ghats, and central India, point to large-scale clearing and degradation of native forests. Thus, it is surprising to note that the biannual India State of Forest Reports have reported a steady increase in the country's forest cover since 1997.

The recently-released 2011 report is the first in almost 15 years that points to a reversal in this trend. Is this correct? Were previous reports of a steady increase in forest cover reliable? Can such analyses be improved upon, given India's premier global position in satellite remote-sensing technology?

It may help to first examine some of the difficulties with verifying reports of deforestation from this report. Take, for instance, Andhra Pradesh, which reports a loss of 281 sq km of forest. While the report attributes this decline mainly to the planned harvest of mature tree plantations, others have attributed this clearing to timber poaching.

In the north-east, Manipur has lost 190 sq km of forest area. The report attributes this largely to shifting cultivation, while many foresters and researchers working in the north-east point to the impact of large-scale, organised timber poaching.

While the exact factors remain unknown, the variety of explanations offered point to a larger problem with the manner in which the report is generated and presented, making it difficult to relate trends in forest cover to interpretations of causes of change. The first challenge is the substantial time lag between

the collection of data and publication of these reports. Thus, the Indian State of Forest Report released in 2012 is based on satellite images collected between October 2008 and March 2009.

The three-year time lag makes it difficult to check the accuracy of data, and makes it even more challenging to assign clear-cut causes for decline. In contrast, in the Brazilian Amazon, where remoteness and the density of forest cover make it even more challenging to conduct forest assessments, the space agency INPE is able to provide information on forest change at a 25-hectare scale, every two weeks (apart from the monsoon season, when cloud cover obscures satellite imagery). This is the timescale that is needed to combat deforestation as it occurs.

The lack of separation between plantations and native forests adds another source of confusion. India has the second-largest area of land under plantations globally, which provide services of carbon storage, but do not provide anywhere near the same levels of biodiversity or ecosystem services that a native forest does.

Although it is critically important to discriminate between native forests and plantations, the two are merged in the State of Forest reports. Agricultural crops like orange, rubber, coconut, tea and coffee plantations are also often confused with forests. Then, the satellite images used for the reports have a pixel size of 23 m, and a spatial ability to discriminate details at a scale of about a hectare.

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

## Global: 1.3 billion people rely on forests to survive

**H**ands off our forest! The UN has adopted a series of voluntary guidelines to protect indigenous peoples' rights to the land on which they live. And not before time, as a recent report suggests hundreds of millions could be evicted by modern-day land grabs.

Many indigenous peoples have lived in the same place for centuries, but they do not have legal tenure. Forest peoples, who live in the rainforests of South America, Africa and south-east Asia, are particularly vulnerable. Their forests are often sold or leased to companies or foreign countries for farming, logging or mining. The local people are usually evicted.

The sheer scale of the problem is highlighted in a report from the Forest Peoples Programme in the UK (see p10 for more details on this publication). The FPP estimates that roughly

1.3 billion people – more than one-seventh of the global population – are directly dependent on forests.

At least 350 million could lose their homes in land grabs, says Sophie Chao of the FPP, because their rights to the land are not recognised under national law.

Many of the forests that people occupy are state property and can be sold or leased without consulting the inhabitants.

The UN Food and Agriculture Organization's guidelines encourage governments to recognise and protect indigenous peoples' rights to their land. FAO director general José Graziano da Silva calls the agreement a "historic breakthrough".

**NewScientist.com**

## Indonesia: Asia Pulp & Paper (APP) announces new policies on high conservation value forest

**A**sia Pulp & Paper Group (APP) has announced its new High Conservation Value Forest policies to evolve APP's business, including the immediate suspension of natural forest clearance on its own pulpwood plantations in Indonesia. Over the past decade, APP has built and implemented a broad-ranging sustainability strategy to preserve critical aspects of Indonesia's precious natural resources, high conservation areas and biodiversity.

Now, in what the Group calls the 'next natural evolution' of its sustainability strategy, APP is announcing a move to adopt the internationally-recognized standards for High Conservation Value Forest (HCVF).

The HCVF policies will be implemented immediately in the following way:

1. With respect to APP owned concessions in Indonesia:
  - a. Effective from 1st June 2012, we will suspend natural forest clearance while HCVF assessments are conducted.
  - b. We have engaged credible experts to conduct HCVF assessments, in accordance with HCV Resource Network best practice. The assessments will be based on a multi-stakeholder approach.
  - c. We will protect all identified HCVF areas as a result of the HCVF assessments.
2. With respect to APP's independent pulpwood suppliers in Indonesia:
  - a. Given our firm commitments on HCVF, APP expects independent suppliers to comply with our request for HCVF assessments, by 31 December 2014.

- b. With an international NGO partner, we will engage with our independent suppliers to adopt HCVF assessments.
- c. We will review and reevaluate supply agreements where HCVF assessments are not conducted.

APP's Managing Director of Sustainability, Aida Greenbury, said:

"Effective immediately, we are embarking on a bold program to ensure we can offer our customers products with the highest environmental and social integrity, and to ensure delivery of a shared vision for the global community. We are taking account of critical issues raised in our dialogue with NGOs. It is the aim of APP's policy to exclude HCVF from the supply chain."

Regarding APP's future expansion, Ms Greenbury said: "As a business we are always assessing the markets for opportunities. We will ensure that our Natural Forest Policy will apply to all of our current mill operations and any future expansion."

"We are confident in our ability to embed these policies in our business, but we also acknowledge that success will require the engagement of many stakeholders," said Robin Mailoa, CEO of Sinar Mas Forestry. "High conservation value forest (HCVF) management is a protocol that stretches beyond our own concessions and needs to be embraced and supported by members of local communities, government, civil societies and by everyone that touches the pulpwood production process."

**marketwatch.com**

# Global land deal guidelines could pave way to world without hunger

**T**he endorsement of voluntary guidelines to improve the way countries govern access rights to land, fisheries and forest resources by the Committee on World Food Security (CFS) on Friday marks a historic milestone not only for the way in which land tenure is managed, but also for international consensus-building.

The eradication of hunger depends in large measure on how people, communities and others have access to, and manage, land, fisheries and forests. Pressure on these resources, and on tenure arrangements, is increasing as new areas are cultivated to provide food for a rapidly growing population, urban areas expand, and as a result of environmental degradation, climate change and conflict. Rural landlessness is often the best predictor of poverty and hunger. Moreover, insecure tenure rights can lead to instability and conflict when competing users fight for control of these resources.

Weak governance of tenure hinders economic growth and the sustainable use of the environment. Small-scale farmers and traditional communities will not invest in improving their land, fisheries and forests if they could be taken away at any minute due to lack of recognition of customary rights, weak registration practices or corruption. In some countries, women, for example, despite doing all the farming, are denied legal recognition and protection of rights to their land plots.

The voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security set foundations that are indispensable to resolve these issues. Responsible governance of tenure enables sustainable social, economic and environmental development that can help eradicate food insecurity and poverty, and encourages responsible investment.

The guidelines cover a wide range of issues, including promoting equal rights for women in securing access to land, creating transparent record-keeping systems that are accessible to the rural poor, and helping with recognising and protecting informal and customary rights to land, forests and fisheries. They provide a framework that governments can use when developing their own policies and give investors and developers clear indications of what constitutes acceptable practice.

The guidelines are the result of a three-year inclusive process of consultation that was initially driven by the Food and Agriculture Organisation (FAO). During this government, civil society, the private sector and academics assessed a range of issues and actions. Approximately 1,000 people from more than 130 countries participated in the 15 consultations held worldwide in conjunction with a global electronic conference.

The process moved on to the CFS, the inclusive international and intergovernmental platform dealing with food security and nutrition, under whose auspices the final negotiations were carried out. The negotiations involved nearly 100 national

governments, NGOs, civil society, farmers' associations, private-sector representatives and research institutions.

This participatory, dynamic CFS-led dialogue was crucial to achieving consensus among disparate, sometimes conflicting interests, on a sensitive topic involving – among other issues – striking the right balance between attracting needed investment in agriculture and safeguarding the rights, livelihoods and wellbeing of traditional communities, indigenous people and small-scale producers.

The challenge now is for countries to adapt these guidelines to national conditions and needs before implementing them. This is an effort in which every stakeholder that participated in the consultation processes has a role to play, to transform these guidelines into national policies and concrete improvements in the lives of people worldwide.

The FAO stands ready to assist countries in areas such as institutional capacity development, advocacy, technical support and legal advice. The FAO will use the guidelines as the baseline for our partnerships, and we call on all our current and potential partners to endorse them.

Hunger eradication is a complex challenge. Only by working together can we make progress. Agreement on the guidelines shows that effective, concrete co-operation on sensitive issues central to food security and economic development is possible, offering cause for optimism as we address other challenges on the path to a world free from hunger.

It is our collective duty – governments and NGOs, civil society and the private sector – to ensure that the process of constructive collaboration bears fruit by promoting tenure governance consistent with 21st-century needs and equitable access to the precious resources on which the world's food security depends.

And while work on the guidelines now moves to countries, our next global challenge is to establish principles for responsible agricultural investment. A substantial increase in investment, which has fallen precipitously in recent decades, is needed in developing countries. These principles will help assure that investments serve the needs of all stakeholders and enhance rather than compromise food security.

The same dialogue and collaborative process that underpinned the guidelines should inform discussions about agricultural investments and other challenges related to food security and rural development. The CFS is uniquely positioned to support this process, providing a forum in which different stakeholders can debate and reach the consensus the world needs.

Step by step, we are laying the groundwork for a food-secure world.

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

## Kenya: Kibaki faces the harsh reality of tree felling

President Kibaki yesterday came face to face with realities of deforestation while presiding over the launch of national tree planting season in Kitui county. The President, who visited the Green Africa Foundation Research at Isaangwa village on the outskirts of Kitui town was taken through shocking statistics on tree felling and logging which unless reversed could render conservation efforts nugatory.

The President was informed by the Green Africa Foundation chairman Dr Isaac Kalua that the country's tree cover was depleting at an incredible rate of a whopping 5.6 million trees daily through charcoal burning, timber harvesting and firewood for schools. Kalua told the President that all the country's primary and secondary schools are depending on fire wood and that the current conservation efforts are not enough to replenish what is being lost daily.

Kalua, who conducted the President on a tour of the research centre, otherwise known as the Green Village, said a more serious environmental policy that focus more on tree growing other than planting is needed if Kenya is to achieve the 10 per cent forest cover. "We must use all means to entice Kenyans to join hands in planting trees to save this country from the adverse effects of climate change," Kalua told the President's entourage that included VP Kalonzo Musyoka and ministers Noah Wekesa (Forest and Wildlife), Kaluki Ngilu (Water) and Eugene Wamalwa (Justice). Kalua said concerted efforts should be put in place to replenish the tree cover in Kitui county which provides the bulk of charcoal used in Nairobi. He said the area

has witnessed wanton destruction of trees through charcoal burning in recent years leading to reduced rainfall.

Addressing a public rally after presiding over the launch of the national tree planting campaign, the President urged each Kenyan to dedicate at least 10 per cent of their farms to planting trees to achieve the elusive goal of increasing the country's forest cover. "Kenyans must be recruited into a new green culture to increase tree cover in all corners of the country by educating them which trees grow where and what they need to grow for commercial purposes," he said.

This year's campaign dubbed Towards attaining 10 per cent national tree cover: Ni wajibu wa Kila Mkenya is aimed at getting Kenyans through sustained public awareness to plant at least 5 million trees countrywide in the course of next week alone. "The theme is significant because it captures our aspirations as country to live in peace and be self reliant. This is only possible if we all join hands towards this crucial task" the head of state said at Kitui High School grounds.

He directed the Kenya Forestry Service to crackdown on what he described as "reckless and unlawful" felling of trees across the country saying tree planting efforts will go to waste if existing ones are not protected. Wekesa said it is important for all Kenyans to plant trees numbering their years to make the whole country evenly afforested in a bid to restore our forest cover. Wamalwa said the constitution demands that all Kenyan reserve 10 percent of their plots of land to tree planting.

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

## Thailand: Nine agencies ink MOU on deforestation

Nine agencies have signed a Memorandum of Understanding (MOU) on deforestation to mutually counter the recurring problem. Deputy Prime Minister and Minister of Interior Yongyuth Wichaidit, on Wednesday, presided over the signing of an MOU on forest conservation and deforestation suppression among nine agencies, including the Interior Ministry, the Agriculture and Cooperatives Ministry, the Natural Resources and Environment Ministry, the Defense Ministry, the Royal Thai Armed Forces, the Royal Thai Army, the Royal Thai Navy, the Royal Thai Air Force and the Royal Thai Police.

Mr. Yongyuth stated that Their Majesties the King and Queen have expressed the desire to see the Thai forests protected from

the ongoing deforestation. Thus, it is essential that all agencies collaborate in protecting the forests and suppress deforestation in order to fully revive the environment.

Meanwhile, Interior Permanent Secretary Pranai Suwannarat said that deforestation for business and agricultural purposes is a chronic problem, which is the main cause of natural disasters and global warming. With its existing regional and local networks nationwide, the Ministry of Interior hopes that the collaboration with other agencies will yield a more efficient outcome in preventing the problem of deforestation.

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

