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## I. IN THE PRESS

9 July 2012 - *The Jakarta Post*

### [Delivering the promise of the 'Green Economy'](#)

From June 20 to 22, more than one hundred of the world's leaders gathered in Rio de Janeiro to discuss the future of the earth. The summit adopted an outcome agreement called "The Future We Want", which primarily encourages the countries to implement a Green Economy within their overall economic policies. Many policy makers - albeit not all - see the Green Economy as an answer for future development, given the fact that economic growth in Asia, South America and Africa has had a deteriorating impact on the environment

9 July 2012 - *Mongabay*

### [Making reforestation work in abandoned pasturelands](#)

Tropical reforestation is not easy, especially in abandoned pasturelands. But a new study in [mongabay.com's](#) open access journal *Tropical Conservation Science* finds that removing grasses prior to and after planting native tree seeds significantly improves the chances of forests to take root. The study site, located in Mexico's Lacandon rainforest, was covered in an invasive African grass (*Cynodon plectostachyus*).

5 July 2012 - *CIFOR*

### [REDD+ without regrets: CIFOR Director General on where to from here](#)

Until greater certainty about the future of a global scheme to reduce carbon emissions through avoided deforestation (REDD+) is achieved, priority should be given both to actions that build a foundation for REDD+, and to 'no regrets' policy reforms, according to a new publication from the Centre for International Forestry Research (CIFOR). CIFOR Director-General and contributor to *Analysing REDD+* Frances Seymour discusses what must happen to move the scheme forward

3 July 2012 - *World Agroforestry Centre*

### [Can REDD make Africa greener?](#)

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a payment scheme that rewards the conservation of forests to prevent emissions of green house gasses that cause climate change, but the concept is not always very well understood. "It is easy to mock REDD+", says ICRAF's Director General Tony Simons.

3 July 2012 - *World Agroforestry Centre*

### [Online carbon technology demonstration set to help farmers](#)

According to the United Nations REDD Programme,

the implementation of Reducing Emissions from Deforestation and forest Degradation (REDD) projects can occur effectively if a "transparent, comparable, coherent, complete and accurate measurement, reporting and verification (MRV) national systems are developed and implemented." Leader of the UNEP Carbon Benefits Project at Michigan State University, Dr David L. Skole and his team demonstrated, at the recent IUFRO-FORNESSA Regional Congress, their new tool called An Enterprise On-Line Carbon Measurement, Reporting, and Verification (MRV) Tool. The tool uses a number of widely available GIS and database management software together with up-to-date allometric equations for monitoring carbon projects

28 June 2012 - *CIFOR*

### [Norway may boost REDD+ funding to support green growth](#)

Norway will invest more money to help developing countries conserve their forests through reduced emissions from deforestation and degradation schemes (REDD+) if other countries also step up with additional support, the Norwegian Minister for Environment said at a recent CIFOR event

23 June 2012 - *AFP*

### [UN summit issues environment, poverty blueprint](#)

The biggest UN summit on sustainable development in a decade approved a strategy on Friday to haul more than a billion people out poverty and cure the sickness of the biosphere

20 June 2012 - *IISD*

### [Brazil's Amazon Fund to Extend Anti-Deforestation Support to ACTO Countries](#)

At the UN Conference on Sustainable Development (UNCSD, or Rio+20), the Government of Brazil and the Secretariat of the Amazon Cooperation Treaty Organization (ACTO) announced plans to share the US\$102.6 million of Brazil's Amazon Fund with the other seven ACTO member States (Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela) to combat deforestation in the Amazon.

20 June 2012 - *CIFOR*

### [Nepalese community forestry expert: With green forests comes a green economy](#)

Community managed forests in Nepal are already achieving goals set out at this year's Rio+20 conference by promoting sustainable use of natural resources and making sure more trees are left standing, experts say. However, poverty eradication and social justice will be crucial in the quest for a greener and fairer economy

## II. UNFCCC NEGOTIATIONS AND RELATED DISCUSSIONS

### United Nations Framework Convention on Climate Change

No negotiations have taken place since the negotiations in Bonn, Germany, 14 to 25 May 2012. Click [here](#) to find a summary of the negotiations in Bonn.

The next negotiations, as an informal additional session of the ad hoc working groups, will be held in Bangkok, Thailand from 30<sup>th</sup> of August to 5 September 2012 with the. The following bodies and working groups will meet: The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, The Ad Hoc Working Group on Long-term Cooperative Action under the Convention, the Ad Hoc Working Group on the Durban Platform for Enhanced Action. [More](#)

The 18<sup>th</sup> session of the Conference of the Parties to the UNFCCC and the 8<sup>th</sup> session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol will take place from Monday 26<sup>th</sup> November till Friday the 7<sup>th</sup> of December in Doha, Qatar. [More](#)

Parties and accredited observers are invited to submit their views to UNFCCC on various issues (incl. CDM and LULUCF), as decided by UNFCCC. Click [here](#) for the UNFCCC document

## III. EVENTS & MEETINGS

### Upcoming events

#### Asia REDD Regional Workshop

24-27 July 2012, Kathmandu, Nepal

This workshop will provide valuable insights to policy makers as well as practitioners as they evolve REDD+ strategies in their respective countries. Through regional learning, the workshop will help identify areas that require further impetus and collaborative work to promote a common MRV approach in the region along with sustainable, equitable REDD+ strategies that will benefit local communities. It will also help ICIMOD identify REDD+ bottlenecks in the region and find solutions at a regional level. [More](#)

#### International conference - Forest-water interactions with respect to air pollution and climate change

3-6 September 2012, Kahramanmaraş, Turkey.

Forest and water is one of the high priority areas of IUFRO. The forest-water interaction becomes a major concern in both local and global scales due to anthropogenic stressors like climate change and air pollution. Therefore, the management of forests towards water and carbon management and air pollution mitigation becomes a challenging issue and concern to be addressed. The aim of the conference is to provide a harmonization of forests, water cycle, climate change and air pollution issues. Presentations are welcome from various geographies on ecological, economical and social aspects of listed conference topics. [More](#)

#### IUCN World Conservation Congress

6-15 September 2012, Jeju, Korea

The 2012 World Conservation Congress will be held from 6 to 15 September 2012 in Jeju, Republic of Korea. Leaders from government, the public sector, non-governmental organizations, business, UN agencies and social organizations will discuss debate and decide solutions for the world's most pressing environment and development issues. [More](#)

#### International Conference on sustainable forest management adapting to climate change

13-16 October 2012, Beijing, PR. China

In order to promote knowledge exchanges of the latest scientific findings in sustainable forest management and to strengthen international collaborations in implementing forest management adapting to climate change,

Chinese Society of Forestry(CSF), International Union for Forest Research Organizations(IUFRO) and International Union for Conservation of Nature(IUCN) will co-sponsor the Second Forest Science Forum—International Conference on Sustainable Forest Management Adapting to Climate Change. The conference will be organized by the Chinese Society of Forestry and Beijing Forestry University in Beijing, during October 13-16, 2012. The conference calls for session proposals related to conference topics. [More](#)

### **Illegal logging and legality verification - the FLEGT / VPA as new modes of governance**

6-7 December, 2012, Copenhagen, Denmark

In 2003 the EU adopted its Action Plan on Forest Law Enforcement, Governance and Trade (FLEGT). In order to promote the import to Europe of legal timber, the EU proceeded in 2005 to introduce Voluntary Partnership Agreements (VPAs) with countries that export tropical timber. As of March 2013, timber placed on the European market must be documented legal, and traders will be required to exercise due diligence to ensure that the timber they deal with is from legal sources. At this backdrop, this international academic conference will discuss a number of theoretical and empirical issues related to the practice of illegal logging and trade in illegal tropical timber as well as measures to counteract such practices. Although main focus will be on the EU modalities, presentations on other related initiatives are welcome as well. [More](#)

## **IV. RESEARCH ARTICLES**

### **Towards an integrated global framework to assess the impacts of land use and management change on soil carbon: current capability and future vision**

Smith, P.; Davies, C. A.; Ogle, S.; Zanchi, G.; Bellarby, J.; Bird, N.; Boddey, R. M.; McNamara, N. P.; Powlson, D.; Cowie, A.; Noordwijk, M. van; Davis, S. C.; Richter, D. de B.; Kryzanowski, L.; Wijk, M. T. van; Stuart, J.; Kirton, A.; Eggar, D.; Newton-Cross, G.; Adhya, T. K.; Braimoh, A.K  
*Global Change Biology*; 2012. 18: 7, 2089-2101

Intergovernmental Panel on Climate Change (IPCC) Tier 1 methodologies commonly underpin project-scale carbon accounting for changes in land use and management and are used in frameworks for Life Cycle Assessment and carbon footprinting of food and energy crops. These methodologies were intended for use at large spatial scales. This can introduce error in predictions at finer spatial scales. There is an urgent need for development and implementation of higher tier methodologies that can be applied at fine spatial scales (e.g. farm/project/plantation) for food and bioenergy crop greenhouse gas (GHG) accounting to facilitate decision making in the land-based sectors. Higher tier methods have been defined by IPCC and must be well evaluated and operate across a range of domains (e.g. climate region, soil type, crop type, topography), and must account for land use transitions and management changes being implemented. Furthermore, the data required to calibrate and drive the models used at higher tiers need to be available and applicable at fine spatial resolution, covering the meteorological, soil, cropping system and management domains, with quantified uncertainties. Testing the reliability of the models will require data either from sites with repeated measurements or from chronosequences. We review current global capability for estimating changes in soil carbon at fine spatial scales and present a vision for a framework capable of quantifying land use change and management impacts on soil carbon, which could be used for addressing issues such as bioenergy and biofuel sustainability, food security, forest protection, and direct/indirect impacts of land use change. The aim of this framework is to provide a globally accepted standard of carbon measurement and modelling appropriate for GHG accounting that could be applied at project to national scales (allowing outputs to be scaled up to a country level), to address the impacts of land use and land management change on soil carbon

### **Dry and wet deposition of elemental carbon on a tropical forest in Thailand**

Matsuda, K.; Sase, H.; Muraio, N.; Fukazawa, T.; Khoomsub, K.; Chanonmuang, P.; Visaratana, T.; Khummongkol, P  
*Atmospheric Environment*; 2012. 54: 282-287

In order to further understand atmospheric deposition of elemental carbon (EC) with respect to climate and plant impacts, dry and wet deposition of EC was investigated in a tropical deciduous forest, Sakaerat, Thailand. Micro-meteorological measurements and monthly sampling of PM<sub>2.5</sub> aerosols were carried out continuously over one year in 2010 at the top of an experimental tower 38 m above the ground established in the forest. The dry deposition was estimated by the inferential method by using an empirical parameterization of aerosol deposition velocity. For measurement of wet deposition, biweekly sampling of EC directly filtrated from rainwater was carried out continuously over one year in 2010. EC concentration significantly increased during the period from January to March due to heavy biomass burning, and decreased during the period from June to September due to less biomass burning and the washout effect by rainfall. High deposition velocities were caused by high wind speed in February to April and also by both large displacement

height and medium wind speed in May to July. Dry deposition increased during the period from February to April when the concentration and deposition velocity were both high, and decreased during the period from June to December when the concentration or deposition velocity was low. Wet deposition peaked in March because of the washout effect of high EC in the atmosphere of the late dry season. Wet deposition was somewhat high from August to October with increased rainfall. Both dry and wet deposition increased in the leafless season and decreased in the leafy season, respectively. The annual dry and wet depositions were estimated as 0.58 and 0.05 mg m<sup>-2</sup> day<sup>-1</sup>, respectively. Taking the uncertainties of estimations into account, dry deposition was still significantly higher than wet deposition

### **Ecological benefits provided by alley cropping systems for production of woody biomass in the temperate region: a review**

Tsonkova, P.; Bohm, C.; Quinkenstein, A.; Freese, D  
*Agroforestry Systems*; 2012. 85: 1, 133-152

In temperate Europe alley cropping systems which integrate strips of short rotation coppices into conventional agricultural fields (ACS) are receiving increasing attention. These systems can be used for crops and woody biomass production at the same time, enabling farmers to diversify the provision of market goods. Adding trees into the agricultural land creates various additional benefits for the farmer and society, also known as ecosystem services. However, tree-crop interactions in the temperate region have not been adequately substantiated which is identified as a drawback to the practical implementation of such systems. In order to bridge this gap, the current paper aims to present a comprehensive overview of selected ecosystem services provided by agroforestry with focus on ACS in the temperate region. The literature indicates that compared with conventional agriculture ACS have the potential to increase carbon sequestration, improve soil fertility and generally optimize the utilization of resources. Furthermore, due to their structural flexibility, ACS may help to regulate water quality, enhance biodiversity, and increase the overall productivity. ACS are shown as suitable land use systems especially for marginal sites. Based on the available data collected, we conclude that ACS are advantageous compared to conventional agriculture in many aspects, and therefore suggest that they should be implemented at a larger scale in temperate regions.

### **Woodland networks in a changing climate: threats from land use change**

Gimona, A.; Poggio, L.; Brown, I.; Castellazzi, M  
*Biological Conservation*; 2012. 149: 1, 93-102

Landscape adaptation to climate change requires policies that facilitate species dispersal, to counteract the effects of fragmentation and allow tracking of a species' 'climatic niche'. Expanding existing ecological networks is often proposed as a measure to maintain functional connectivity for forest species in multi-functional landscapes. In the next decades, however, such networks will be threatened by climate change through its effects on land use change, as global drivers are likely to have an increasing influence on national land use policy. Evaluation of indirect effects of climate change, on habitat networks, mediated by land use change, is therefore needed. We used an approach integrating climate, soil properties, and landscape resistance to dispersal, the latter estimated using Circuit Theory, to evaluate the vulnerability to land use change of forest habitat networks in Scotland, given two scenarios of land use change. In Scotland a combination of high food prices and improved land capability for agriculture could lead to decreased landscape connectivity for woodland species, especially in the East and South, with potentially large trade-offs between agriculture and woodland connectivity in the case of loss of woodland on prime agricultural land. We suggest that planning of ecological networks needs to account for future land use change. Adaptation and mitigation strategies across multiple sectors should be reconciled. Woodland networks will benefit from minimising creation of new woodlands on future prime agricultural land, the protection of existing patches, and the creation of wide-scale dispersal pathways along climatic gradients, i.e. in the N-S and E-W directions

### **Return of the periphery? Globalisation, climate change and the options for forest rich regions**

Nuur, C.; Novotny, M.; Laestadius, S  
*International Journal of Environmental Science and Development*; 2012. 3: 3, 246-251

The aim of this paper is to analyse the conditions for a second wave of industrial dynamics of forestry rich regions in old industrialised nations which in the past contributed to the industrial competitiveness but today find themselves in the periphery of industrial development. The main argument is that the process of globalisation and climate change mitigations combined create a scramble for biomass and that this provide a golden opportunity for a revival of the industrial base of forest rich regions. In the 21st century bioenergy applications and new biomaterials based on the properties of boreal trees are emerging in Scandinavia. These resources in combination with new technology can contribute with advanced materials and solutions in a world moving away from fossils. This emerging paradigm has some of the infrastructure already at place - i.e. pulp mills that for decades have been used for papermaking. At least to 2020, the scramble for bioenergy solutions

might be a second best alternative in the climate change mitigation in order to reach the European policy goals. Considering our findings this might restrict the potential for biomass pathways with higher potential both from carbon sequestration and industrial development perspectives

### **Integration of carbon conservation into sustainable forest management using high resolution satellite imagery: a case study in Sabah, Malaysian Borneo**

Langner, A.; Samejima, H.; Ong, R. C.; Titin, J.; Kitayama, K

*International Journal of Applied Earth Observation and Geoinformation*; 2012. 18: 305-312

Conservation of tropical forests is of outstanding importance for mitigation of climate change effects and preserving biodiversity. In Borneo most of the forests are classified as permanent forest estates and are selectively logged using conventional logging techniques causing high damage to the forest ecosystems. Incorporation of sustainable forest management into climate change mitigation measures such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) can help to avert further forest degradation by synergizing sustainable timber production with the conservation of biodiversity. In order to evaluate the efficiency of such initiatives, monitoring methods for forest degradation and above-ground biomass in tropical forests are urgently needed. In this study we developed an index using Landsat satellite data to describe the crown cover condition of lowland mixed dipterocarp forests. We showed that this index combined with field data can be used to estimate above-ground biomass using a regression model in two permanent forest estates in Sabah, Malaysian Borneo. Tangkulap represented a conventionally logged forest estate while Deramakot has been managed in accordance with sustainable forestry principles. The results revealed that conventional logging techniques used in Tangkulap during 1991 and 2000 decreased the above-ground biomass by an annual amount of average -6.0 t C/ha (-5.2 to -7.0 t C/ha, 95% confidential interval) whereas the biomass in Deramakot increased by 6.1 t C/ha per year (5.3-7.2 t C/ha, 95% confidential interval) between 2000 and 2007 while under sustainable forest management. This indicates that sustainable forest management with reduced-impact logging helps to protect above-ground biomass. In absolute terms, a conservative amount of 10.5 t C/ha per year, as documented using the methodology developed in this study, can be attributed to the different management systems, which will be of interest when implementing REDD+ that rewards the enhancement of carbon stocks.

### **Carbon storage of *Dipterocarpus tuberculatus*, *Terminalia tomentosa* and *Pentacme siamensis* in Seima Protection Forest, Cambodia**

Khun, V.; Lee DonKoo; Hyun JungOh; Park YeongDae; Combalicer, M. S

*Journal of Environmental Science and Management*; 2012. 15: Special Issue 1, 68-76

In a deciduous forest of Seima Protection Forest, Cambodia biomass and carbon storage of vegetation, litter layer, and soil were assessed. Allometric equations for estimating the total aboveground biomass were developed based on the direct measurements of 75 individuals of the three dominant species, *Dipterocarpus tuberculatus* Roxb., *Terminalia tomentosa* Mart. ex Eichler, and *Pentacme siamensis* Kurz. The total biomass and carbon content of *D. tuberculatus* was highest (91 tons ha<sup>-1</sup> and 45.50 tons ha<sup>-1</sup>, respectively) followed by *T. tomentosa* (19 tons ha<sup>-1</sup> and 9.50 tons ha<sup>-1</sup>, respectively) and *P. siamensis* (17.90 tons ha<sup>-1</sup> and 9 tons ha<sup>-1</sup>, respectively). Moreover, the carbon content of undergrowth vegetation and litter layer was 0.40 tons ha<sup>-1</sup> and 1.5 tons ha<sup>-1</sup>, respectively. In addition, the soil organic carbon (SOC) up to 50 cm depth was 178.10 tons ha<sup>-1</sup>. The best fit equations for the total aboveground biomass of the three study species based on combinations of diameter at breast height (DBH) and height (H) as independent variables were highly significant ( $P < 0.001$ ). The best fit equation of *D. tuberculatus* was  $\log Y = -1.211 + 0.921 \log X$  where  $r^2$  was 0.97 and *T. tomentosa* was  $\log Y = -1.470 + 0.976 \log X$  where  $r^2$  was 0.99. Furthermore, the equation of *P. siamensis* was  $\log Y = -1.780 + 1.037 \log X$  where  $r^2$  was 0.99. The equations of study species in this study could be confidently used in estimating the biomass storage and carbon sequestration although more samples are needed to improve its accuracy

### **Global patterns of the dynamics of soil carbon and nitrogen stocks following afforestation: a metaanalysis**

Li, D. J.; Niu, S. L.; Luo, Y. Q

*New Phytologist*; 2012. 195: 1, 172-181

Afforestation has been proposed as an effective method of carbon (C) sequestration; however, the magnitude and direction of soil carbon accumulation following afforestation and its regulation by soil nitrogen (N) dynamics are still not well understood. We synthesized the results from 292 sites and carried out a meta-analysis to evaluate the dynamics of soil C and N stocks following afforestation. Changes in soil C and N stocks were significantly correlated and had a similar temporal pattern. Significant C and N stock increases were found 30 and 50 yr after afforestation, respectively. Before these time points, C and N stocks were either

depleted or unchanged. Carbon stock increased following afforestation on cropland and pasture, and in tropical, subtropical and boreal zones. The soil N stock increased in the subtropical zone. The soil C stock increased after afforestation with hardwoods such as Eucalyptus, but did not change after afforestation with softwoods such as pine. Soil N stocks increased and decreased, respectively, after afforestation with hardwoods (excluding Eucalyptus) and pine. These results indicate that soil C and N stocks both increase with time after afforestation, and that C sequestration through afforestation depends on prior land use, climate and the tree species planted

### **Climate change and the cost of conserving species in Madagascar**

Busch, J.; Dave, R.; Hannah, L.; Cameron, A.; Rasolohery, A.; Roehrdanz, P.; Schatz, G

*Conservation Biology*; 2012. 26: 3, 408-419

We examined the cost of conserving species as climate changes. We used a Maxent species distribution model to predict the ranges from 2000 to 2080 of 74 plant species endemic to the forests of Madagascar under 3 climate scenarios. We set a conservation target of achieving 10,000 ha of forest cover for each species and calculated the cost of achieving this target under each scenario. We interviewed managers of projects to restore native forests and conducted a literature review to obtain the net present cost per hectare of management actions to maintain or establish forest cover. For each species, we added hectares of land from lowest to highest cost per additional year of forest cover until the conservation target was achieved throughout the time period. Climate change was predicted to reduce the size of species' ranges, the overlap between species' ranges and existing or planned protected areas, and the overlap between species' ranges and existing forest. As a result, climate change increased the cost of achieving the conservation target by necessitating successively more costly management actions: additional management within existing protected areas (US\$0-60/ha); avoidance of forest degradation (i.e., loss of biomass) in community-managed areas (\$160-576/ha); avoidance of deforestation in unprotected areas (\$252-1069/ha); and establishment of forest on nonforested land within protected areas (\$802-2710/ha), in community-managed areas (\$962-3226/ha), and in unprotected areas (\$1054-3719/ha). Our results suggest that although forest restoration may be required for the conservation of some species as climate changes, it is more cost-effective to maintain existing forest wherever possible.

### **Implications of growth uncertainties associated with climate change for stand management**

Eriksson, L. O.; Backeus, S.; Garcia, F

*European Journal of Forest Research*; 2012. 131: 4, 1199-1209

Climate change is expected to have substantial effects on many aspects of forest ecosystems, including timber production. Temperatures in northern Europe are expected to increase considerably, although there is substantial uncertainty about both the seasonal and average changes that will occur. In Scandinavia, production is predicted to increase across most of the area covered by boreal forest, since the growth of trees in the region is currently limited by temperature. Therefore, we have analyzed the importance of adapting management practices to future climate changes and considered possible ways to address associated stand management problems. For this purpose, we simulated climate scenarios with temperature increases ranging from 2.5 to 6.0 degrees C over a 100-year period, and effects on typical Swedish stands with several species, then optimized their management with simulated annealing. The results indicate that the maximum considered temperature trend would raise the economic value of the stands by almost 5% more than the minimum trend. However, the importance of optimizing management plans in accordance with the correct temperature scenario appears to be limited. The plan optimized for the minimum temperature trend was only marginally inferior to the plan optimized for the maximum temperature trend in the maximum trend scenario, and vice versa. It also seemed adequate to use a deterministic formulation of the problem, and in cases where a stochastic climate change model generated more robust plans, the advantage could be attributed to model artifacts rather than climate change per se.

### **Microclimate and vegetation function as indicators of forest thermodynamic efficiency. (Special profile: Adapting conservation to a changing climate)**

Norris, C.; Hobson, P.; Ibsch, P. L.;

*Journal of Applied Ecology*; 2012. 49: 3, 562-570

Resilient and functional landscapes are essential for climate change adaptation. Thermodynamic theory has been applied increasingly to ecological studies to understand ecosystem resilience and integrity. Resilient ecosystems have complex structure and greater levels of biomass and functional diversity, which act to enhance the degradation of solar energy. Forests that exhibit these characteristics express thermodynamic efficiency through a greater capacitance effect that promotes cooler surface temperatures under extreme weather conditions. With forest disturbance, complex structures and functional linkages are simplified, reducing the capacity of the system to degrade energy. Such changes can lead to dysfunctional ecosystem

states, impaired provision of ecosystem services and a weakened resilience. This study has applied indicators based on thermodynamic theory to a chronosequence of forest ecosystems in the UK, Germany and Ukraine. Surface temperatures were measured to test thermodynamic theories relating to energy degradation and temperature moderation. Grime's CSR model was applied to plant data to compare functional complexity in vegetation between stands. Old-growth woodlands are shown to attenuate surface temperature more effectively than native species plantations. Consistently lower temperatures were observed in European old-growth forests with high proportions of biomass when compared to managed stands of similar species composition, suggesting a greater efficiency of energy degradation in complex forest ecosystems, particularly at higher temperatures. Analysis of plant species data using Grime's CSR model indicated that old-growth forests ordinate towards competitive and stress-tolerant communities in contrast to intensively managed forests, which had a greater proportion of generalist and ruderal species. High CSR functional scores were associated with moderated temperature extremes. <i>Synthesis and applications</i>. Our results suggest an important thermodynamic basis for conservation in the context of climate change. Conservation practice and management policy, which is based on preserving ecosystem complexity and function, can aid in mitigating the effects of extreme temperatures, enhancing vital services such as climate regulation, primary production and water retention. Old-growth forests have a significant climate mitigation role alongside other recognised ecosystem services such as carbon sequestration

### **Deforestation and forest degradation in India - implications for REDD+**

Ravindranath, N. H.; Nalin Srivastava; Murthy, I. K.; Sumedha Malaviya; Madhushree Munsri; Nitasha Sharma

*Current Science*; 2012. 102: 8, 1117-1125

Reducing emissions from deforestation and forest degradation (REDD+) is considered as an important mechanism under the UNFCCC aimed at mitigating climate change. The Cancun Agreement on REDD mechanism has paved the way for designing and implementation of REDD+ activities, to assist countries experiencing large-scale deforestation and forest degradation. Contrary to the general perception, the present analysis shows that India is currently experiencing deforestation and forest degradation. According to the latest assessment of the Forest Survey of India, the net annual loss of forests is estimated to be 99,850 ha during the period 2007-2009, even though the total area under forests has increased. The REDD+ mechanism aims to provide financial incentives for reducing deforestation and forest degradation. India, despite having robust legislations, policies and remote sensing capabilities, is not ready to benefit from the emerging REDD+ mechanism, with potential flow of large financial benefits to rural and forest-dependent communities from international financial sources.

### **Combining demographic and land-use dynamics with local communities perceptions for analyzing socio-ecological systems: a case study in a mountain area of Italy**

Pisanelli, A., Chiochini, F., Cherubini, L., Lauteri, M

*iForest* 5: 163-170

Rural communities are facing increasing social heterogeneity and organization complexity consequently to land use changes, demographic dynamics and globalization processes. Members of the communities should have a direct perception of their own territories, recognizing any positive or negative change that may occur. A better knowledge of these processes may be achieved by investigating local community awareness and perspectives. A research was carried out in a rural and mountainous area of Central Italy with the following aims: (i) to highlight demographic dynamics and land use changes that affected the area during the last decades; (ii) to assess local communities' perceptions and awareness of their own territories; (iii) to verify and validate a research methodology by evaluating the resilience of socio-ecological systems. The study area involved four municipalities that were analyzed considering the historical changes of demographic data and land-use system. A questionnaire was submitted to a sample of local population. The questionnaire was aimed to investigate the following issues: (i) level and quality of participation and communication within the community life; (ii) awareness of environmental resources of the territories; (iii) socio-cultural opportunities and expectations of future changes within the communities. In each municipality, different behaviors and needs emerged according to the age of the inhabitants. In spite of that, awareness of social, cultural and environmental constraints/potentialities emerged in all the communities. Communication capability seems a key factor to reinforce both the social capital and the resilience of the territories. Thus, sharing of experience and knowledge could play a major role in developing an efficient governance of the occurring territorial changes. Finally, the study highlights that serious efforts should be spent especially to satisfy expectations of young people concerning the territorial development. This latter seems a prerequisite for the maintenance of the system resilience.

## **Improving opportunities for smallholder timber planters in Vietnam to benefit from domestic wood processing**

Putzel, L., Dermawan, A., Moeliono, M., Trung, L.Q

*International Forestry Review*, Vol. 14 (2): 227-237

Since 1992, the Vietnamese Government has implemented far reaching policies and programs to increase the country's tree cover by promoting plantation forestry. In addition to providing environmental services, these efforts are intended to alleviate rural poverty through sustainable forestry. Towards this goal, more than 4 million ha have been assigned to households and rural cooperatives through forestland reallocation or management contracts. Although the extent of primary forest has continued to decrease, overall tree cover has increased by 47% since 1990, largely due to the spread of tree plantations. Meanwhile, in the last decade, with Vietnam's economic liberalisation policies, the timber processing industry has shifted from State-owned enterprises to private companies. By 2008, the processing sector had expanded into a \$3 billion industry, one of Vietnam's top five export sectors and a major source of demand for logs and sawnwood. In 2010, an assessment in the industrial wood processing center of Binh Dinh province was conducted to gain insights on market opportunities for smallholder produced timber. The assessment revealed a number of factors preventing local smallholders from fully capitalising on demand for wood from the processing industry. These included competition between the manufacturing sectors (e.g. furniture, woodchips and pulp industries), which creates an incentive for premature timber harvesting, and a lack of domestic supply of certified timber, resulting in Vietnam's furniture companies importing raw materials. To address the former, better segmentation of the wood production for the different sectors is recommended. The latter might be addressed through more aggressive efforts to certify household-scale timber plantations through simplified schemes such as the Forest Stewardship Council's Small and Low Intensity Managed Forests (SLIMF) certification, pending additional research to better understand the potential costs, benefits and risks of such a strategy.

## **An urgent need for social protections in REDD+.**

Rutt, R

*Development Briefs Policy - Forest & Landscape Denmark; 2012. 20.*

REDD+ is a proposed international carbon credit mechanism to finance reduced emissions from deforestation and forest degradation through conservation, sustainable management, and enhancement of forest carbon stocks. This brief is based upon a recent review of social safeguards instruments that were selected based upon their direct and specific mention of REDD+ application and usefulness. Specifically, the instruments were identified through a literature review of both recently produced instruments and existing reviews, as well as through suggestions made to the author by colleagues working with REDD+ in varying sectors.

## **Baseline Map of Carbon Emissions from Deforestation in Tropical Regions**

Harris, N.L., Brown, S., Hagen, S.C., Saatchi, S.S., Petrova, S., Salas, W., Hansen, M.C., Potapov, P.V., Lotsch, A

*Science Vol 336: 1573-1575*

Policies to reduce emissions from deforestation would benefit from clearly derived, spatially explicit, statistically bounded estimates of carbon emissions. Existing efforts derive carbon impacts of land-use change using broad assumptions, unreliable data, or both. We improve on this approach using satellite observations of gross forest cover loss and a map of forest carbon stocks to estimate gross carbon emissions across tropical regions between 2000 and 2005 as 0.81 petagram of carbon per year, with a 90% prediction interval of 0.57 to 1.22 petagrams of carbon per year. This estimate is 25 to 50% of recently published estimates. By systematically matching areas of forest loss with their carbon stocks before clearing, these results serve as a more accurate benchmark for monitoring global progress on reducing emissions from deforestation.

## **Afforestation and timber management compliance strategies in climate policy. A Computable General Equilibrium analysis**

Michetti, M.; Rosa, R

*Ecological Economics; 2012. 77: 139-148*

This paper analyzes the role of forest-based carbon sequestration in a unilateral EU27 emissions reduction policy under a Global Computable General Equilibrium (CGE) framework. Forestry mitigation is introduced into the model relying on carbon sequestration curves provided by a global forestry model. The structure of the original CGE is extended to consider land use change and timber supply effects, resulting from the use of forest sinks to reduce carbon emissions. Results show that afforestation and timber management could lead to substantially lower policy costs. By using forest-carbon sinks it is possible to achieve the 30% emissions reduction target with an additional European effort of only 0.2% of GDP compared with the cost of a 20% emissions reduction without forestry. Carbon price is also reduced, by approximately 30% in 2020. European

forest-carbon sequestration may have, however, the perverse effect of increasing timber production in areas of the world which already have high deforestation rates. A sensitivity analysis on main parameters confirms the robustness of our results.

### **Estimating the carbon budget and maximizing future carbon uptake for a temperate forest region in the U.S.**

Peckham, S. D.; Gower, S. T.; Buongiorno, J  
*Carbon Balance and Management*; 2012. 7: 6

Forests of the Midwest U.S. provide numerous ecosystem services. Two of these, carbon sequestration and wood production, are often portrayed as conflicting. Currently, carbon management and biofuel policies are being developed to reduce atmospheric CO<sub>2</sub> and national dependence on foreign oil, and increase carbon storage in ecosystems. However, the biological and industrial forest carbon cycles are rarely studied in a whole-system structure. The forest system carbon balance is the difference between the biological (net ecosystem production) and industrial (net emissions from forest industry) forest carbon cycles, but to date this critical whole system analysis is lacking. This study presents a model of the forest system, uses it to compute the carbon balance, and outlines a methodology to maximize future carbon uptake in a managed forest region. Results: We used a coupled forest ecosystem process and forest products life cycle inventory model for a regional temperate forest in the Midwestern U.S., and found the net system carbon balance for this 615,000 ha forest was positive (2.29 t C ha<sup>-1</sup> yr<sup>-1</sup>). The industrial carbon budget was typically less than 10% of the biological system annually, and averaged 0.082 t C ha<sup>-1</sup> yr<sup>-1</sup>. Net C uptake over the next 100-years increased by 22% or 0.33 t C ha<sup>-1</sup> yr<sup>-1</sup> relative to the current harvest rate in the study region under the optimized harvest regime. Conclusions: The forest's biological ecosystem current and future carbon uptake capacity is largely determined by forest harvest practices that occurred over a century ago, but we show an optimized harvesting strategy would increase future carbon sequestration, or wood production, by 20-30%, reduce long transportation chain emissions, and maintain many desirable stand structural attributes that are correlated to biodiversity. Our results for this forest region suggest that increasing harvest over the next 100 years increases the strength of the carbon sink, and that carbon sequestration and wood production are not conflicting for this particular forest ecosystem. The optimal harvest strategy found here may not be the same for all forests, but the methodology is applicable anywhere sufficient forest inventory data exist.

## **V. PUBLICATIONS, REPORTS AND OTHER MEDIA**

### **Annual Report 2011. Groundwork For Success. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) Led by the International Center for Tropical Agriculture (CIAT)**

CCAFS

2011 was the first year of operation of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). CCAFS brings together the work of all 15 international Centres in the CGIAR, and is a joint programme between the CGIAR and the Earth System Science Partnership (ESSP). 2011 was a start-up year in terms of introducing a new way of working across Centres, but it was also a year of considerable research effort. [The report](#)

### **Payments for environmental services in Costa Rica: from Rio to Rio and beyond**

*iied*

Costa Rica has shown how a small developing country can grab the bull of environmental degradation by the horns, and reverse one of the highest deforestation rates in Latin America to become the poster child of environment success. Key to its achievement has been the country's payments for environmental services (PES) programme, which began in 1997 and which many countries are now looking to learn from, especially as water markets and schemes to reward forest conservation and reduced deforestation (REDD+) grow. Within Costa Rica too, there is a need to first reflect on how the contexts for, and challenges facing, PES have changed; and continue building a robust programme that can ensure the coming decade is as successful as the past one. [The paper](#)

### **Big ideas in development: Investing in locally controlled forestry. Natural protection for people and planet**

*iied*

Forests mean different things to different people. For some, they are a haven – somewhere to go to marvel at the wonder of nature. For others, they are a home and source of livelihood and culture. But whether we live in concrete cities or tropical jungles, forests are vital to the survival and wellbeing of each and every one of us. They purify the air we breathe, protect and clean the water we drink, and keep our planet cool and habitable. The earliest humans gathered food and made their dwellings in ancient forests. Today, we still rely on forests for food, fuel, shelter, medicine and fun. But, with a global population of seven billion wanting to consume an ever-growing mass of goods, our demands are far more exacting. Every day in the life of the modern consumer includes a myriad of hidden demands on the world's forests. From the wood in your floorboards or the paper on your desk to the cocoa in your cup, the palm oil in your face cream or the cinnamon in your spice rack, forests provide the raw ingredients for many of our daily desires. The profit potential of catering to this insatiable appetite is huge – global trade in primary wood products (such as pulp, plywood and lumber) alone is worth an estimated US\$235 billion, and demands for energy and food far exceed this. But it comes at a price. Since 1990, the area of old-growth forests has decreased by 300 million hectares – an area larger than Argentina. Deforestation could account for the loss of as many as 100 species a day. And it is a major source of the carbon emissions that are driving climate change. Excessive global consumption is eating into a dwindling resource base, with current patterns exceeding the Earth's capacity to provide natural resources and absorb waste by more than 50 per cent. How can we ensure that forests survive the squeeze? We believe the answer lies in putting commercial control of forests into the hands of local people, who generally value forests for more than cash or commodities alone. In this booklet we examine the thinking behind investing in such locally controlled forestry. We explore how forests are valued by local people; show why forests thrive under local control; and consider how policymakers, banks and businesses can invest in the idea. [The publication](#)

## **The Context of REDD+ in Vietnam. Drivers, agents and institutions**

*CIFOR*

Reducing emissions from deforestation and degradation (REDD+) has captured global and national attention because of its potential contribution to climate change mitigation; at the same time, translating the concept from the international to the national policy arena is highly complex. As a country likely to be seriously affected by climate change, Vietnam has engaged deeply in international discussions and preparations to implement REDD+. Furthermore, Vietnam has been selected as one of the first countries to pilot the United Nations REDD (UN-REDD) programme and practise Free, Prior and Informed Consent (FPIC), which is the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use. Vietnam provides an interesting example for several other reasons. First, Vietnam is at the end of the so-called forest transition curve, which describes the state of a country's or region's forest as it moves from high rates of deforestation to regrowth of a stable and expanding forest cover, as correlated to economic development. That forest in Vietnam has been identified as being at the end of this curve means that the country's forest cover is increasing, but with declining forest quality. This feature raises questions as to whether Vietnam will be able to benefit from REDD+ and carbon market in the long run. Second, in contrast to other countries, in Vietnam REDD+ is seen as a potential source of income that can contribute both to the national payments for environmental services (PES) programme and to the national poverty reduction strategy. This presents an interesting case of how REDD+ can potentially contribute to domestic policies and revenue and of the trade-offs required. Third, the country's strong leadership and the fact that the state manages all land can be used to examine how REDD+ might work in an authoritarian system of governance. [The report](#)

## **Analysing REDD+. Challenges and choices**

*CIFOR*

This is the third book in a series of highly recognised REDD+ volumes from CIFOR. It provides an analysis of actual REDD+ design and early implementation, based on a large research project - the Global Comparative Study on REDD+ (GCS), undertaken by CIFOR and partners. It takes stock of national, subnational and local REDD+ experiences, and identifies the political and practical challenges to designing and implementing effective, efficient and equitable REDD+ policies and projects. [The book](#)

## **Learning to Tackle Climate Change**

*DFID*

How can continuous learning and reflection help tackle climate change in the context of wider development challenges? This interactive PDF aims to support ongoing learning by those inside and outside DFID to develop their own learning journey - no matter what their country, context or level of personal expertise. It reflects the combined knowledge of DFID staff and external experts generated over two years on a shared learning journey through the Learning Hub. [The publication](#)

## **Food security and climate change**

*The High Level Panel of Experts on Food Security and Nutrition*

This report calls attention to the urgent need for action at all levels, starting with local communities and extending up to global organizations. Every nation will have to develop its own strategy to manage climate change and risks. The coping capacity of the poor will have to be strengthened, since poor nations and the poor in all nations will be the first and most to suffer of adverse changes in climate. Anticipatory action will be needed to safeguard the lives and livelihoods of coastal communities. Countries will have to be prepared, where necessary, to resettle “climate refugees”. Food production has to be insulated to the extent possible from climate change impacts, since agriculture constitutes the major source of livelihood in rural areas in most of the developing countries. Sub-Saharan Africa and South Asia are amongst the most vulnerable regions to changes in temperature and precipitation. These are also regions with the highest malnutrition burden. Therefore, concerted action on the part of the global community will be essential to avoid climate change becoming a major calamity. [The report](#)

## **Participatory Monitoring, Evaluation, Reflection and Learning for Community-based Adaptation: PMERL Manual. A manual for local practitioners**

*CARE*

This manual contains guidelines covering a wide range of tools and methodologies that vary in complexity and rigor. Some of these have been around for years, while others are relatively new. The choice of tools and methodologies and how they are applied should be informed by their relevance to your program and the available capacity to effectively use the tools. This manual will be a ‘living’ document, as CARE and IIED acknowledge that the suggested PMERL process is a ‘learning-by-doing’ process. To this end, the next step in the evolution of this manual will be to field test it in a number of project sites. [The manual](#)

## **Community-Powered Monitoring of REDD+. Open Source technology boosts community forest monitoring**

*Global Canopy Programme*

Emerging forest policies such as REDD+ depend on the involvement of local communities for their success. One important way for communities to be involved is through monitoring, which can provide valuable information for local management as well as for national Measurement, Reporting and Verification (MRV) Systems that are currently being built. Open source technology such as smartphone ‘apps’ and online mapping tools will play an increasingly important role in enabling communities to gather data on key resources and processes in a cost-effective way. This paper provides a simple introduction to this emerging topic. [The paper](#)

## **Annual Report 2011/2012. The sustainable future we want**

*UNDP*

Download the annual report from UNDP [here](#)

## **Comparative Study on REDD+: Recommendations for Action**

*Silvestrum*

The objective of this study is to analyze similarities and differences in conditions and factors relevant for the implementation of REDD+ activities in a group of 26 Latin American, African and Asian countries with the aim to assist donors, governments, NGOs and private actors in understanding national and regional circumstances when elaborating REDD+ strategies, particularly regarding the initial identification of priorities and lines of action. To this end, the study offers an assessment of the situation of these countries with respect to their interest and readiness to participate in REDD+, as well as a broader analysis of the potential environmental and social impacts of carrying out REDD+ activities within their territories. The countries considered in this document are Bolivia, Brazil, Cambodia, Cameroon, Colombia, Congo DR, Costa Rica, Ecuador, Ghana, Guatemala, Honduras, Indonesia, Kenya, Lao, Liberia, Madagascar, Mexico, Mozambique, Nicaragua, Paraguay, Peru, Philippines, Papua New Guinea, Tanzania, Vietnam and Zambia. [The report](#)

## **Climate Brief. Focus on the economics of climate change. The role of the forestry sector in reducing European emissions: the European Commission starts with a tally**

*CDC Climat Research*

On March 12th 2012, after two years of consultations and reviews, the European Commission published a decision proposal regarding the inclusion of the land use and forestry sector in European climate policy. The aim of this proposal is to impose accounting rules that are consistent with the decisions of the United Nations Framework Convention on Climate Change (UNFCCC), and to harmonise them between Member States.

Meanwhile, the issue of economic incentives aimed at guaranteeing the sector's contribution to climate mitigation is postponed until a later date. [The brief](#)

## VI. JOBS

No relevant job openings announced this month

## VII. ANNOUNCEMENTS

### Forests Carbon Tools and Resources Platform

*Forest Carbon Asia*

Accurate estimation of forest carbon is important in developing forest carbon/ REDD+ projects. Proper monitoring of the carbon is needed in generating carbon credits in both national and international carbon registries under the compliance and voluntary carbon markets. On the social aspect, processes like Free, Prior and Informed Consent (FPIC) are important when it comes to indigenous people and local communities and these communities and developers should be made aware of these processes. This new platform provides a list of tools and resources that are invaluable for forest carbon/ REDD+ activities. [The platform](#)

### CLIM-FO INFORMATION

The objective of CLIM-FO-L is to compile and distribute recent information about climate change and forestry. CLIM-FO-L is issued monthly.

Past issues of CLIM-FO-L are available on the website of [FAO Forest and Climate Change](#):

<http://www.fao.org/forestry/climatechange/en/>

For technical help or questions contact [CLIM-FO-Owner@fao.org](mailto:CLIM-FO-Owner@fao.org)

The Newsletter is compiled by Marc Dumas-Johansen and Susan Braatz.

**We appreciate any comments or feedback.**

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