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SUMMARY OF CLIM-FO-L ONLINE SURVEY

FAO is in the process of evaluating Clim-Fo-L. An online survey of readers was conducted between January and March 2012 for this purpose. Of Clim-Fo-L's current 2443 subscribers, 160 completed the survey, representing a 6.5% response rate. Below is a short summary of the results:

- Two thirds of the respondents were government employees and academics based in North America and Europe and over three-quarters of the respondents were male. Only a small proportion of respondents were forest managers and NGO affiliates.
- Most respondents came to know about Clim-Fo-L through colleagues or friends (35%) and the internet (32%).
- Most respondents (94%) felt that coverage of information was adequate. Some suggested that the sections on research articles and jobs be enlarged.
- A large majority of respondents (88%) felt that the newsletter was useful or very useful, and 94% were satisfied with its layout. Some suggested that the newsletter could be shortened.
- Nearly all respondents (97%) were satisfied with CLIM-FO-L's periodicity (i.e. monthly).
- Most respondents (92%) were satisfied with their ability to submit information for inclusion in the newsletter.
- FAO's Clim-FO-L compilers are proposing to develop an online search tool to search past Clim-Fo-L issues for information. 85% of the respondents indicated that they would find it useful.
- Respondents suggested that the distribution of the newsletter could be improved by liaising with other newsletters, e.g. FAO newsletters, and various list serves and through increased contact with universities.

FAO will use this constructive feedback and will take the following steps in the near future to improve the newsletter:

- Reach out to potential subscribers, particularly from NGO and forest manager sectors and from developing countries, by engaging with organisations working with NGOs and forest managers at the local level, by more actively using networks and lines of communication with developing countries, and through greater use of social media
- Reach out to universities to promote the newsletter
- Develop an online tool to facilitate searches for information contained in articles and publications in past Clim-Fo-L issues
- Increase the number of abstracts from research articles

I. IN THE PRESS

18 March 2012 - Mongabay

[Global rainforest carbon map released online](#)

Researchers have posted carbon stock data for the world's tropical forests on ArcGIS Online, a web-based mapping platform developed by Esri. The data, based on satellite measurements from NASA including LiDAR and MoDIS data as well as on-the-ground field measurements, reveals the biomass of tropical forests at a 500-meter resolution, the highest resolution ever published on a global scale.

16 March 2012 - IPS News

[Caribbean Mobilises Funds for Ten-Year Climate Plan](#)

Failure to adapt to climate change will derail the development aspirations of the 15-member Caribbean Community (Caricom), researchers warn, siphoning off an average of five percent of 2004 gross domestic product regionwide by 2025.

14 March 2012 - *Landscapes Blog for People, Food and Nature*

[Indigenous resource management systems: A holistic approach to nature and livelihoods](#)

Two peer-reviewed studies published recently by the Center for International Forestry Research (CIFOR) and the World Bank show that strict conservation is less effective in reducing deforestation than community forests that are managed and controlled by indigenous peoples and forest-dependent communities within multiple use systems.

14 March 2012 - CIFOR

[Mangroves being destroyed at “an alarming rate” yet not mentioned in Rio+ 20’s zero draft](#)

“Oceans” will be one of the key issues under discussion at Rio+20 with the aim to ensure sustainable ocean development and the protection of marine resources, yet mangroves - whose carbon sequestering ability and raft of ocean ecosystem services are being lost at an “alarming rate” - are not mentioned at all in the summit’s zero draft agenda.

13 March 2012 - CNN

[GPS technology maps land rights for Africa’s ‘forest people’](#)

In the lush rainforests of Africa's Congo Basin, hundreds of thousands of indigenous people live as hunter gatherers, depending on the forest's natural resources for their survival. Yet most have no legal

rights to the land that has been their home for millennia.

11 March 2012 - AlertNet

[Land ownership boost climate resilience in India](#)

Efforts to secure land ownership for tribal people in one of India's poorest states are bolstering their economic security in the face of climate-induced hardships, and helping conserve farmland and forest.

09 March 2012 - *Science and Development Network*

[Rio Summit may ‘ignore’ forests, warn scientists](#)

Forests have barely been mentioned in the draft of the international agreement to be made at the Rio+20 Earth Summit later this year (20-22 June), the body that represents 15,000 of the world's forest researchers has complained.

09 March 2012 - IISD

[UNFCCC Executive Secretary Outlines Implications of Durban](#)

Christiana Figueres, UNFCCC Executive Secretary, delivered a lecture on the theme “Implications of the Durban outcome for enhancing action on climate change on the ground towards a more sustainable future,” at an event organized by the International Institute for Environment and Development (IIED) in London, UK.

06 March 2012 - IISD

[Adaptation after Durban](#)

The recently concluded 17th session of the UNFCCC Conference of the Parties (COP 17) agreed on a number of seminal decisions to move forward the global agenda for climate change adaptation. However, a less visible yet equally impactful outcome is the subtle change in global orientation and outlook towards adaptation, an evolution which had already started at COP 16 in Cancun and was subsequently solidified by the Durban decisions. This change can be summed up as three major steps forward: towards a reinforced long-term commitment to adaptation action; towards consolidation and defragmentation; and towards predictability

21 February 2012 - CIFOR

[New study highlights need for REDD+ to look beyond carbon](#)

A new study on rubber plantations highlights the need for the REDD+ climate change scheme to further consider biodiversity and rural livelihoods.

II. UNFCCC NEGOTIATIONS AND RELATED DISCUSSIONS

United Nations Framework Convention on Climate Change

No negotiations have taken place since the December 2011 issue. The next negotiations will take place in Bonn, Germany from 14 May to 25 May 2012. The following bodies and working groups will meet: the 36th sessions of the Subsidiary Body for Implementation (SBI) and the Subsidiary Body for Scientific and Technological Advice (SBSTA), the 15th session of the AWG-LCA, the 17th session of the AWG-KP and the first session of the Ad Hoc Working Group on the Durban Platform for Enhanced Action.

In the June 2012 Issue we will be back with a summary of the conference.

At Durban, Parties and accredited observers to UNFCCC were invited to make submission of views to UNFCCC on several issues, including regarding the Durban Platform for Enhanced Action, further commitments for Annex I Parties under the Kyoto Protocol, nationally appropriate mitigation actions, adaptation and capacity building. Two submissions regarding REDD+ were invited, as follows:

- Methodological guidance for REDD+ activities, in particular on how to address drivers of deforestation and forest degradation and on robust and transparent national forest monitoring systems. Deadline 28 February
- Enhanced action on mitigation - REDD+, in particular on modalities and procedures for financing results-based actions and considering activities. Deadline 28 February

For more information on all invitations for submissions on views, see:

http://unfccc.int/files/parties_and_observers/notifications/application/pdf/message_to_parties__submission_of_views__jan_2012_corr.pdf

The UNFCCC Secretariat will compile the submissions received in documents that will be released prior to the Bonn meetings in June.

III. EVENTS & MEETINGS

Upcoming events

Beyond carbon: ensuring justice and equity in REDD+ across levels of governance

23-24 March 2012, Oxford, UK. Deadline for submission of abstracts is the 4th of January 2012.

Reducing Emissions from Deforestation and Forest Degradation (REDD+) has rapidly become a key pillar of international cooperation on climate change. Since its inception in 2005, REDD+ has grown in scope from being a cheap mitigation option and opportunity to address the 15-20% of global GHG emissions attributed to deforestation into a wider set of activities that reach beyond the carbon dimension of REDD+. They promote forest carbon stocks, sustainable management of forests and forest conservation as well as deliver co-benefits such as biodiversity conservation and poverty alleviation. A host of state and non-state actors at all levels of governance have entered this emerging policy field. This conference takes stock of these developments to date. It addresses them from both natural and social science perspectives and discusses the role of justice and equity in current debates on REDD+. Its particular aim is to discuss the limits and opportunities in deriving co-benefits from REDD+ activities. The conference calls for papers. Abstracts are invited and should be submitted by the 4th of January 2012. [More](#)

Climate Change Mitigation with Local Communities and Indigenous Peoples: Practices, Lessons Learned and Prospects.

26-28 March 2012, Cairns, Australia.

The workshop aims to reflect the wide and diverse range of perspectives concerning indigenous peoples/local communities and climate change responses (including mitigation); support the build-up of understanding and peer-reviewed literature in the field of indigenous peoples, local communities and climate change mitigation; and to compile regional and local data and grey literature that are relevant for understanding climate change mitigation at the local level. It will also support indigenous peoples', local communities' and developing country scientists' engagement and research in international climate dialogues. The workshop also intends to provide policy-makers with policy relevant information on mitigation, indigenous peoples and local communities. Selected papers will be considered for publication in a Special Issue of a peer-reviewed scientific journal. [More](#)

Planet Under Pressure: New knowledge towards solutions

26 -29 March, London, UK

The 2012 international Planet Under Pressure conference will provide a comprehensive update of the pressure planet Earth is now under. The conference will discuss solutions at all scales to move societies on to a sustainable pathway. It will provide scientific leadership towards the 2012 UN Conference on Sustainable Development - Rio+20. [More](#)

4th Africa Carbon Forum

18-20 April 2012, Addis Ababa, Ethiopia

The plenary sessions will allow high level experts from Africa and outside the continent to deliver their views on recent developments in the international carbon market and new challenges associated with global climate change. Topics for these plenary sessions will range from discussions on the future for CDM in Africa, to the challenges for Low Carbon Energy Access; from opportunities in Forestry and Agriculture to a global perspective on the future demands for offsets. The plenary sessions will be supported by workshops and training sessions which will give participants the opportunity to improve their know-how and learn from relevant experts on a more informal basis. The ACF will also provide extensive networking opportunities to enable potential project developers to showcase their ideas to interested parties, including potential investors and carbon credit buyers. [More](#)

24th International Climate Policy PhD Workshop

03-04 May 2012, Freiburg, Germany

The ICP workshops series is organised twice per year under the auspices of the European Ph.D. Network on International Climate Policy (ICP). It aims to offer doctoral candidates the opportunity to present their research ideas and results, receive feedback, and exchange information and assistance in an informal setting. Contributions of Ph.D. students from all disciplines working on topics relevant to climate policy are invited. Participation is free of charge, but participants are expected to cover their travel and accommodation expenses. We seek to bring together 30-40 Ph.D. students, who present and discuss their work. Each presentation will be followed by comments of a fellow Ph.D. candidate and a discussion of the paper. There will be a small number of places available for participants without own presentation. However, active involvement is required. Each participant may be asked to serve as a discussant for a presentation in a related field. Deadline for submission of abstract is 29 January 2012. [More](#)

Assessing forest governance in a context of change

9-12 May 2012, Sarajevo, Bosnia & Herzegovina

The objective of the conference is to meet scientists and other experts to discuss the experiences in assessing the governance of the forest sector in various places of the world. Different approaches and methodologies will be confronted, with as a perspective to progress in the understanding of the different concepts of “governance” as applied in the forest policy and management issues. [More](#)

Forest for People

22 - 24 May 2012, Alpbach, Tyrol/Austria

The conference is one important part of the new IUFRO strategy based on six thematic areas. The aim of this conference is to build a systematic body of knowledge about “forest for people” and its various facets, including possible future trends and challenges. This conference and the following up process want to integrate not only the knowledge across all divisions but include the knowledge outside IUFRO. [More](#)

Adaptation Futures - 2012 International Conference on Climate Adaptation

29 - 31 May 2012, Arizona, USA

The conference focuses on adaptation to climate variability and change. The conference will bring together researchers, policy makers, and practitioners from developed and developing countries to share insights into the challenges and opportunities that adaptation presents. It will showcase cutting-edge research from around the world, focusing on themes of equity and risk, learning, capacity building, methodology, and adaptation finance and investment. It will explore practical adaptation policies and approaches, and share strategies for decision making from the international to the local scale. [More](#)

Rio + 20. United Nations Conference on Sustainable Development

20-22 June 2012, Rio de Janeiro, Brazil

The objective of the Conference is to secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges. The Conference will focus on two themes: i) green economy in the context of sustainable development and ii) the institutional framework for sustainable development. [More](#)

First IUFRO-FORNESSA -Regional Congress

25 - 30 June 2012, Nairobi, Kenya

The Congress will provide a platform for African forest scientists, forest managers and policy makers and their colleagues from other parts of the world to share and exchange information and experiences on critical issues affecting forest and wildlife resources in Africa. The overall goal of the congress is to demonstrate how forest science is impacting on livelihoods, environmental management and development in Africa. The congress will highlight research that puts relevant information in the hands of forest communities, forest managers, policy makers, the private sector and civil society. [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](#)

The World Clean Technology Summit (WCTS)

26-28 September 2012, Kampala, Uganda

The World Clean Technology Summit will bring together world leaders in renewable energy, Forestry, exhibitors, investors, scientists and clean technology providers from around the world to engage, interact with each other, exchange business contacts, forge partnerships, and pave a way forward for a sustainable future. [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](#)

IV. RESEARCH ARTICLES

Adaptive capacity deficits and adaptive capacity of economic systems in climate change vulnerability assessment

Williamson, T., Hessel, H., Johnston, M.

Forest Policy and Economics. Volume 15. 160-166

This paper considers two ways that economic concepts inform adaptive capacity assessments within the context of climate change vulnerability analysis. First, using an economics framework, there are rational and logical reasons why different individuals and different organized human systems have different levels of adaptive capacity and these differences do not necessarily correlate to differences in vulnerability. An alternative approach is to determine where there are factors leading to socially inequitable or economically

sub-optimal investment in adaptive capacity assets or reduced effectiveness of adaptive capacity assets resulting in adaptive capacity deficits. Factors contributing to adaptive capacity deficits include cases of irrational agent behaviour and cases where there are political, social, and economic system failures. A second way current adaptive capacity constructs can be enhanced is by taking explicit account of the adaptive capacity of economic systems. Economic system properties such as scale, diversity, relative mix of the private and public sectors, innovation, organizational/managerial capital, substitutability of inputs, factor mobility, liquidity of assets, etc. will affect the capacity of economic systems to adapt.

Thinning effects on the net ecosystem carbon exchange of a Sitka spruce forest are temperature-dependent

Saunders, M., Tobin, B., Black, K., Gioria, M., Nieuwenhuis, M., Osborne, B.A.

Agricultural and Forest Meteorology. Volume 157. 1-10

Commercial forest plantations need to be actively managed, through tree removal, in order to improve wood quality, maintain productivity and provide an economic return, although this could compromise an important role for forests in carbon sequestration and greenhouse gas mitigation. The impact of forest thinning on net primary productivity (NPP) and net ecosystem exchange (NEE) was assessed using a combination of biometric and eddy covariance (EC) techniques. Two thinning operations were performed in close succession, which reduced the basal area of the stand by 17% and 11% and removed a timber volume of 48 m³ ha⁻¹ and 50 m³ ha⁻¹, respectively. Annual rates of NPP ranged from 13.24 (±3.96) to 18.94 (±4.88) t C ha⁻¹ and 13.22 (±3.72) to 17.77 (±5.30) t C ha⁻¹ for the pre- and post-thinning periods, respectively. Estimates of NEE varied between 8.44 (±1.34) to 8.87 (±1.48) t C ha⁻¹ and 6.75 (±1.19) to 10.33 (±1.41) t C ha⁻¹ in the pre- and post-thinning periods. Forest thinning did not have a significant impact on carbon stocks or fluxes when pre-thinning (2002–2006) and post-thinning (2007–2009) estimates of NPP and NEE were compared, however the range of inter-annual variability in NEE increased after thinning. The partitioning of annual NEE carbon budgets into gross primary productivity (GPP) and ecosystem respiration (Reco) together with an analysis of key physiological parameters suggested that the impacts of forest thinning are largely dependent on temperature. An expected decrease in GPP after the initial thinning in 2007 was not observed due, in part, to the higher mean annual air temperatures and incident photosynthetic active radiation (PAR) and a compensatory increase in photosynthesis by the remaining trees. A continual decline in Reco, was observed in the years subsequent to the first thinning and was attributed to both biomass removal and climatic factors. Inter-annual variations in climate had a significant impact on NEE, GPP and Reco. Annual mean air temperature, total precipitation and total incident PAR were all shown to influence the processes driving CO₂ exchange. Overall, these results suggest that the impacts of the thinning practices, as implemented in this study, are dependent on climate and under similar conditions are unlikely, in the short-term, to compromise a role for forest ecosystems in carbon sequestration and greenhouse gas mitigation.

Forest thinning and soil respiration in a Sitka spruce forest in Ireland

Olajuyigbe, S., Tobin, B., Saunders, M., Nieuwenhuis, M

Agricultural and Forest Meteorology. Volume 157. 86-95

Forest thinning influences soil processes by altering key microclimatic conditions, root density, micro-bial communities, organic matter turnover and nutrient budgets. It introduces a large pulse of harvest residues (brush) to the soil surface and can alter the balance between autotrophic and heterotrophic respiration. This study determined the influence of thinning, microclimatic factors and plant productivity on carbon (C) losses through the emission of carbon dioxide (CO₂) respired from thinning lines (brush lanes or BL) and the forest floor (FF: without brush) in a first rotation Sitka spruce (*Picea sitchensis* (Bong.) Carr.) forest in Ireland. Weekly measurements of CO₂ efflux were carried out using an Infra-Red Gas Analyser connected to static chambers; while soil moisture content and soil surface temperature were measured, using theta probes and data loggers, respectively. The soil respiration measurements were also correlated with the gross primary productivity (GPP) determined by eddy covariance techniques. The highest CO₂ efflux were observed at the peak of summer in July/2010 (FF = 699.20 mg CO₂m⁻² h⁻¹ and BL = 374.22 mg CO₂m⁻² h⁻¹) and were associated with maximum soil surface temperatures and higher rates of GPP. Soil temperature had a strong positive influence on the variation of CO₂ from the forest (FF = 75% and BL = 59%), and the temperature sensitivity (Q₁₀) of soil respiration from the FF (5.47) was higher than from the BL (2.72). Soil moisture was inversely correlated with soil respiration from both FF (R = -0.73, p < 0.0001) and BL (R = -0.53, p = 0.003). The combined effect of temperature and moisture gave a better description of the variability in CO₂ respired from both the FF (R² = 0.85, p < 0.0001) and BL (R² = 0.67, p < 0.0001) than temperature and/or moisture alone. GPP was positively correlated with soil respiration with a stronger relationship observed in the FF (R² = 0.73, p < 0.0001) than the BL (R² = 0.45, p < 0.0001). The total C loss due to soil respiration from the FF (448.93 g C m⁻² year⁻¹) was significantly higher than BL (351.77 g C m⁻² year⁻¹). The annual soil respiratory

C loss was 435.32 g C m⁻² year⁻¹ (calculated based on the contribution of the BL (14%) and FF (86%) to the total forest area).

Compliance with sustainable forest management guidelines in three timber concessions in the Venezuelan Guayana: Analysis and implications

Vilanova, E., Ramírez-Angulo, H., Ramírez, G., Torres-Lezama, A.
Forest Policy and Economics 17 (2012) : 3-12

After more than 40 years of natural forest management (NFM) in Venezuela, out of 16 million ha of production forests only 10% located in the Guayana region is currently being managed with some consideration of sustainability. A recent survey of three private concessions in the Imataca Forest Reserve, based on partial consideration of criteria and indicators for the sustainable management of tropical forests, revealed that a new form of management is needed. Compliance with reduced impact logging was very low, with poor planning in logging operations detected in all cases, highly affecting forest stands and biomass recovery. A limited capacity for monitoring was also found. Social assessments showed that local communities in all cases demanded more participation in wood production benefits and tended to value provision services such as timber, food and water above other important regulations and cultural services. Here, three strategies are proposed as an effective way to partially modify NFM into a more integrated approach: 1) strengthening of institutional cooperation between private and public sectors and capacity building in the process of monitoring; 2) creation of a training framework for reduced impact logging techniques 3) a review of current legal structures and national policies related to NFM in order to favour small-scale operations.

Planning for climate change adaptation: lessons learned from a community-based workshop

Picketts, I. M.; Werner, A. T.; Murdock, T. Q.; Curry, J.; Dery, S. J.; Dyer, D.;
Environmental Science & Policy. 2012. 17

Adaptation is now broadly accepted as a necessary response to climate change. Local adaptation strategies should be developed with decision makers familiar with the unique characteristics of a community. As part of ongoing research on adaptation in Prince George, British Columbia, Canada we hosted a workshop with City staff and community stakeholders to build local capacity and initiate an adaptation strategy. Past climate trends and future scenarios were used to gain a better understanding of the changes occurring and expected in the region. The highest priorities identified for Prince George relate to forest fires, flooding, emergency response to extreme events, water supply and transportation infrastructure. The workshop framework represents a tool which communities can apply to outline adaptation priorities within a limited time frame.

South Africa's national REDD+ initiative: assessing the potential of the forestry sector on climate change mitigation

Rahlao, S.; Mantlana, B.; Winkler, H.; Knowles, T
Environmental Science & Policy. 2012. 17

Reducing emissions from deforestation and forest degradation in developing countries (REDD+) is regarded by its proponents as one of the more efficient and cost effective ways to mitigate climate change. There was further progress toward the implementation of this mechanism at the 16th Conference of Parties (COP) in Cancun in December 2010. Many countries in southern African, including South Africa, have not been integrated (do not participate) into the UN-REDD+ programme, probably due to their low forest cover and national rates of deforestation. This paper discusses the potential contribution of REDD+ activities to the South

African Government's pledge of reducing national greenhouse gas (GHG) emissions by 34% below business as usual by 2020. A number of issues such as complex land tenure system, limited forest cover and other conflicting environmental issues present challenges for REDD+ in South Africa. Despite these genuine concerns, REDD+ remains a practical strategy to contribute to climate change mitigation for South Africa. The paper raises the need for development of a variety of emission reduction programmes - not only in the energy sector. The paper also assesses several national options and opportunities towards a working REDD+ mechanism. It concludes by identifying key mechanisms for moving forward to prepare for REDD+ actions in South Africa and raises the urgent need for national dialogue between stakeholders and institutions to evaluate the feasibility of making use of the mechanism in South Africa and the Southern African Development Cooperation (SADC) region. The paper further addresses possible synergies and conflicts between the national climate change and forestry policies towards REDD+ development. It suggests that REDD+ should be part of the national dialogue on policy to respond to climate change and should be integrated into the national flagship programmes that the national climate change white paper seeks to implement. A multiple-benefit REDD+ initiative for South Africa can benefit from these international financial initiatives. It is anticipated that this initiative will provide a platform to enhance policy, institutional and technical stakeholder capacities to access financial incentives that may lead to sound environmental practises.

Implications of Biodiesel-Induced Land-Use Changes for CO₂ Emissions: Case Studies in Tropical America, Africa, and Southeast Asia

Achten, W.M.J. & Verchot, L.V.

Ecology and Society 16 (4): 14

Biofuels are receiving growing negative attention. Direct and/or indirect land-use changes that result from their cultivation can cause emissions due to carbon losses in soils and biomass and could negate any eventual greenhouse gas (GHG) reduction benefit. This paper evaluates the implications of land-use change emission on the climate-change mitigation potential of different biofuel production systems in 12 case studies in six countries. We calculated carbon debts created by conversion of different land-use types, ranging from annual cropland to primary forest. We evaluated case studies using three different biofuel crops: oil palm, *Jatropha*, and soybean. The time needed for each biofuel production system to pay back its carbon debt was calculated based on a life-cycle assessment of the GHG reduction potentials of the system. Carbon debts range from 39 to 1743.7 Mg CO₂ ha⁻¹. The oil palm case studies created the largest carbon debts (472.8-1743.7 t CO₂ ha⁻¹) because most of the area expansion came at the expense of dense tropical forest. The highest debt was associated with plantation on peatland. For all cases evaluated, only soybean in Guarantã do Norte and Alta Floresta, Brazil needed less than one human generation (30 years) to repay the initial carbon debt. Highest repayment times were found for *Jatropha* (76-310 years) and oil palm (59-220 years) case studies. Oil palm established in peatlands had the greatest repayment times (206-220 years). High repayment times for *Jatropha* resulted from the combined effects of land-cover change and low CO₂ emission reduction rate. These outcomes raise serious questions about the sustainability of biofuel production. The carbon implications of conversion of (semi-)natural systems with medium to high biomass indicate that, in order to generate climate benefits, cultivation of biofuel feedstocks should be restricted to areas that already have low carbon content.

Effects of scale and scaling in predictive modelling of forest site productivity

Aertsen, W.; Kint, V.; Muys, B.; Orshoven, J. van

Environmental Modelling & Software. 2012. 31: 19-27

Site productivity, commonly expressed by site index, is a key indicator of the potential of forested land to deliver ecosystem services like wood production and carbon sequestration. It is an important criterion for decision makers and managers of both production and multi-purpose forests. In many situations forest site index cannot be directly measured and must be estimated from site characteristics related to climate, topography and soil, using appropriate models. A major difficulty herewith is that the models must capture the spatial and temporal variability of the ecological processes, knowing that the magnitude and the variability of the driving forces and responses may show scale dependencies. Scale is therefore an important issue in successful forest site productivity modelling. In this study, empirical forest site productivity models are evaluated for their scale dependency whereby reference is made to the threefold concept of 'scale' (extent, support, coverage) as proposed by Bierkens et al. (2000). We also addressed the applicability of models at other extents or other supports than the one they were developed at, i.e. the effect of scaling. The results show that meaningful site index models for small extents require higher resolution support to catch the short distance variability, whereas for larger extents a coarser support is sufficient to characterize the variability. Where it regards scaling, it is found that the validity of empirical site index models is restricted to the scale level for which they are calibrated. Also the application of site index models on an extent which is adjacent and not overlapping with the extent at which they were developed proved to result in inadequate predictions. Although the structure of site index models is scale-dependent and their applicability limited to the scale of development, it is beyond doubt that such models have the potential to provide good insight into the biophysical drivers of site productivity and can result in good predictions at unsampled locations whenever the scale of model establishment is adapted to the scale of the studied processes and predictions are restricted to the extent for which the model is calibrated.

Forest bioenergy climate impact can be improved by allocating forest residue removal

Repo, A.; Kankanen, R.; Tuovinen, J. P.; Antikainen, R.; Tuomi, M.; Vanhala, P.; Liski, J

GCB Bioenergy. 2012. 4: 2, 202-212

Bioenergy from forest residues can be used to avoid fossil carbon emissions, but removing biomass from forests reduces carbon stock sizes and carbon input to litter and soil. The magnitude and longevity of these carbon stock changes determine how effective measures to utilize bioenergy from forest residues are to reduce greenhouse gas (GHG) emissions from the energy sector and to mitigate climate change. In this study, we estimate the variability of GHG emissions and consequent climate impacts resulting from producing bioenergy from stumps, branches and residual biomass of forest thinning operations in Finland, and the contribution of the variability in key factors, i.e. forest residue diameter, tree species, geographical location of the forest biomass removal site and harvesting method, to the emissions and their climate impact. The GHG emissions and the consequent climate impacts estimated as changes in radiative forcing were comparable to fossil fuels

when bioenergy production from forest residues was initiated. The emissions and climate impacts decreased over time because forest residues were predicted to decompose releasing CO₂ even if left in the forest. Both were mainly affected by forest residue diameter and climatic conditions of the forest residue collection site. Tree species and the harvest method of thinning wood (whole tree or stem-only) had a smaller effect on the magnitude of emissions. The largest reduction in the energy production climate impacts after 20 years, up to 62%, was achieved when coal was replaced by the branches collected from Southern Finland, whereas the smallest reduction 7% was gained by using stumps from Northern Finland instead of natural gas. After 100 years the corresponding values were 77% and 21%. The choice of forest residue biomass collected affects significantly the emissions and climate impacts of forest bioenergy.

Impacts of carbon-based policy instruments and taxes on tropical deforestation

Barua, S. K.; Uusivuori, J.; Kuuluvainen, J.

Ecological Economics. 2012. 73: 211-219

The impacts of carbon payments and income taxes on curbing tropical forest loss are analyzed under a market equilibrium framework. The supply of cleared forest land was derived by using a two-period utility maximization model when the carbon sequestration of a private forestholder is credited. The land demand was derived from the profit maximization problem of a cash-crop farmer. The model was applied to data from the humid Chaco eco-region of Paraguay. The results indicate that taxes on cash-crop and forestry incomes may in fact be ineffective in curbing forest loss. Carbon payments, however, would effectively reduce forest clearing. In the context studied, a carbon payment of Euro 30 per ton of carbon would limit deforestation to 10% of existing forest cover. A reversible carbon crediting system, in which a forestholder can redeem a credited forest, seems to substantially increase, at least in the short run, the effectiveness of carbon payments. Carbon payments could also complement the tax on cash-crop income in curbing tropical forest loss. An effective policy to combat tropical deforestation should, therefore, jointly consider forestry and cash-crop sectors.

V. PUBLICATIONS, REPORTS AND OTHER MEDIA

Forests and Climate Change Working Paper 10. Forest Management and Climate Change: a literature review

FAO

This document summarizes knowledge and experiences in forest management as a response to climate change, based on a literature review and a survey of forest managers. This is part of an FAO-led process to prepare climate change guidelines for forest managers. It examines climate change impacts on forests and forest managers throughout the world. The document also reviews the main perceived challenges that climate change poses to forests and their managers. It summarizes experiences in preparing for and reacting to climate change in different types of forests. Finally, it indicates a number of gaps in enabling conditions (related to knowledge, institutional setting and culture) that hamper forest managers from responding effectively to climate change and its impacts. The document concludes that a number of forest managers worldwide already have in place interesting strategies for climate change. Unfortunately, in few cases are proper monitoring systems in place that allow society and forest managers to assess the effectiveness and efficiency of the measures taken or of their social and environmental impacts. Often such measures and management strategies are designed in response to a perceived risk of negative climate change impacts rather than in response to incentive schemes, such as payment for environmental services or market driven schemes such as certification. The document provides a number of recommendations for forest managers to better prepare for climate change opportunities and challenges to come. [The working paper](#)

Lessons about land tenure, forest governance and REDD+. Case studies from Africa, Asia and Latin America

USAID, TransLinks, The Nelson Institute for Environmental Studies, University of Wisconsin-Madison, Land Tenure Center

This volume of case studies comprises one of two main publications resulting from the Oct. 21-22, 2011 Land Tenure and Forest Carbon Management Workshop hosted by the University of Wisconsin/Madison's Land Tenure Center (LTC), Nelson Institute for Environmental Studies, and Geography Dept. (www.rmportal.net/landtenureforestsworkshop). Contributed by an impressive array of researchers, NGOs, and other development partners, these cases are intended to complement a set of research papers being prepared simultaneously for a forthcoming special issue of World Development. [More](#)

TRAINING GUIDE. GENDER AND CLIMATE CHANGE RESEARCH IN AGRICULTURE AND FOOD SECURITY FOR RURAL DEVELOPMENT

FAO

The manual sets out to provide agricultural development professionals with resources and participatory action research tools for collecting, analyzing and sharing gender-sensitive information about agricultural communities, households and individuals who are facing climate changes. This will for instance sensitize users to the links of socio-economic and gender issues in the context of climate change in the agriculture and food security sectors. The guide also applies knowledge gained beyond research to promote gender-sensitive adaptation and mitigation activities in agriculture. [The training guide](#)

CCAFS Report No. 6. Mechanisms for agricultural climate change mitigation incentives for smallholders

CCAFS

Smallholders have important roles to play in both the prevention of dangerous climate change by reducing net global Greenhouse Gas (GHG) emissions, and our global ability to adapt to climate change. However, smallholders have largely failed to benefit from international financial mechanisms established as a result of the United Nations Framework Convention on Climate Change (UNFCCC). We propose that this is due to the design of these mechanisms, which in their current formats are largely inaccessible to smallholder groups. The purpose of this paper, which draws on literature and interviews, is to examine finance and risk-related obstacles hindering smallholders from participating in current carbon finance mechanisms. It also suggests a framework for identifying how to prioritize and aggregate smallholders to achieve mitigation at scale. [The report](#)

CCAFS Report No. 7. Towards Policies for Climate Change Mitigation: Incentives and benefits for smallholder farmers

CCAFS

For a long time, agriculture has been neglected by climate negotiators and policy makers in charge of defining national climate policies. This is changing, and the links between climate change and agriculture have become more obvious over the last years. Climate finance provides an opportunity to facilitate the adoption of agricultural practices that support climate mitigation and adaptation. This report presents a number of policies and interventions aimed at harnessing climate finance potential to support a transition to a more sustainable agriculture for the benefit of smallholder farmers. [The report](#)

BRINGING IT HOME: Taking Stock of Government Engagement with the Voluntary Carbon Market

Ecosystem Marketplace

With the future of an international climate agreement still in flux, governments worldwide are turning to markets for voluntary carbon offsetting to engage private sector climate actors - and to inform or provide the tools that could shape tomorrow's regulated carbon markets. At least 21 such government programs are currently underway, and nine of these have emerged in the last four years, according to this study by Forest Trends' Ecosystem Marketplace. The report provides case studies of the 13 most advanced programs in Bringing it Home: Taking Stock of Government Engagement with the Voluntary Carbon Market. [The report](#)

Forest Cover Change and Tenure: A review of Global Literature. Environment and climate series 2011/4

Helvetas Nepal & Rights and Resources Initiative

In the REDD+ era, the issue of forest tenure has shot to the top of international forest policy agendas. Even beyond the issue of 'REDD readiness,' there is much debate on the role of tenure in other outcomes of sustainable forest management, in particular livelihoods and forest conservation. This literature review focuses on the latter concern and aims to provide a brief overview of the international literature on the question of the relationship between forest tenure and forest cover change. The objective is to discover whether there is evidence that particular forest tenure regimes have significant relationships with forest cover change. [The report](#)

South Asia Forest Tenure Assessment. Environment and climate series 2011/3

Helvetas Nepal & Rights and Resources Initiative

An increasing body of evidence shows that forest governance and tenure reforms are central to mitigating a

number of problems related to forests, and seriously affect forest-dependent people. On this backdrop, this assessment of South Asian forest tenure systems was initiated to provide a greater understanding of the tenure trends and status in the region that can potentially inform the policy process. This is the synthesis report of forest tenure assessments prepared by country consultants in five countries in South Asia: Bangladesh, Bhutan, India, Nepal, and Pakistan. Further supplementary data used in this report were collected from RRI and FAO sources. [The report](#)

VI. JOBS

TECHNICAL EXPERTS - REDD+ AND CLIMATE CHANGE ADAPTATION - CENTRAL and SOUTH AMERICA

Tetra Tech ARD - deadline for application is 31st of May 2012

Tetra Tech ARD is currently accepting expressions of interest from qualified regional and local technical experts for anticipated USAID-funded climate change adaptation and REDD+ projects in Latin America and the Caribbean. The anticipated projects will focus on policy and implementation of efforts to reduce emissions from deforestation and forest degradation (REDD+), as well as efforts to build the resilience of vulnerable populations to adapt to the impacts of climate change that will be felt in a variety of sectors, including agriculture, fisheries and infrastructure; as well as geographies, such as coastal zones, river basins, and mountainous areas. [More](#)

TECHNICAL EXPERTS - REDD+ AND CLIMATE CHANGE ADAPTATION - South East Asia

Tetra Tech ARD - deadline for application is 31st of May 2012

Tetra Tech ARD is currently accepting expressions of interest from qualified regional and local technical experts for anticipated USAID-funded climate change adaptation and REDD+ projects in South East Asia. The anticipated projects will focus on policy and implementation of efforts to reduce emissions from deforestation and forest degradation (REDD+), as well as efforts to build the resilience of vulnerable populations to adapt to the impacts of climate change that will be felt in a variety of sectors, including agriculture, fisheries and infrastructure; as well as geographies, such as coastal zones, river basins, and mountainous areas. [More](#)

VII. ANNOUNCEMENTS

Biodiversity & REDD+ Platform - launch of new platform

Forest Carbon Asia

The Biodiversity & REDD+ Platform is a partnership between Forest Carbon Asia and SNV Netherlands Development Organization with funding support from the International Climate Initiative of the German Ministry for the Environment (BMU). This platform is dedicated to bringing you comprehensive reviews and latest updates on REDD+ biodiversity-related issues, and links to technical expertise and resources to build more informed biodiversity-friendly REDD+ policies and implementation across Asia. By reporting on the risks and raising awareness about the positive measures taken to conserve biodiversity as parts of international, national and sub-national REDD+ activities, standards and safeguards; FCA and SNV seek to ensure that the new REDD+ mechanism contributes to the long-term conservation and sustainable use of biodiversity. [More](#)

Review of planned and existing adaptation activities in 12 sub regions across Asia and the Pacific, Africa, and Latin America

The Adaptation Partnership

The Adaptation Partnership, co-chaired by the United States, Spain, and Costa Rica, seeks to encourage effective adaptation by catalyzing action and fostering communication among the various institutions and actors engaged in the effort to scale up adaptation and resilient development around the world. As part of this effort, the Adaptation Partnership commissioned a review of planned and existing adaptation activities in 12 sub-regions across Asia and the Pacific, Africa, and Latin America and the Caribbean. This review provides an inventory of regional and country-level adaptation activities and a summary of key adaptation priorities, based on documents like the UN Framework Convention on Climate Change's National Adaptation Programs of Action and National Communications. It also identifies gaps and opportunities for scaling up and enhancing collaboration. It can be accessed from the Adaptation Partnership website here. [More](#)

FAO RAP co-hosts post-Durban experts workshop in Manila

FAO

On 21st February, 13 experts and experienced commentators assembled in Quezon City in the Philippines to discuss the implications of COP17 in Durban for forestry in the Asia-Pacific region. This was the third in a series of post-COP expert consultations that have been organized by FAO and RECOFTC - The Center for People and Forests to distil the opinions and knowledge from the region. In common with the previous two events, the outcomes of the meeting will be compiled in a booklet: "Forests and climate change after Durban: An Asia-Pacific perspective". These booklets have proved to be very popular with forest sector stakeholders throughout the region, and beyond, as a concise and accessible summary of the implications of the ongoing climate change negotiations. This year, the meeting was hosted by CoDe REDD, an alliance of organisations which are contributing to the development of national REDD+ strategies in the Philippines, and received additional financial and logistical support from GIZ, BMU, REDD-net, NORAD, ASFN and SDC. By inviting the experts to prepare answers to several key questions that have been raised by forest sector stakeholders since the close of COP 17, the organisers encouraged discussions to range from general perceptions on the directions of negotiations, through REDD+ finance and safeguards, capacity building for MRV, and on to LULUCF, A/R CDM and the role of forests in climate change adaptation. The panel saw the creation of the 'Durban platform' as a broadly positive development, provided that the issue of historic equity between parties is not forgotten. Promode Kant of IGREC, who has been a panelist in all three events, explained that many industries in the region see business opportunities in emission reductions. REDD+ continues to be seen, by both governments and civil society in the region, as a particularly promising example of constructive negotiations. As Tony La Vina explained, this is largely due to a deliberately incremental approach to the development of the mechanism; 'We are not being asked to be magicians for REDD+, pulling numbers out of the air, as we were for LULUCF'. The booklet is due to be released in April.

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

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

We appreciate any comments or feedback.

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