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NOTE TO CLIM-FO READERS - ONLINE SURVEY - GENTLE REMINDER

The FAO forestry and climate change team is now in the process of evaluating the usefulness of Clim-Fo-L. An online survey has been sent out the 19th of January 2012. The survey will run until the 2nd of March 2012. If you haven't been through the survey, please help us to complete it before this date. It is of great value to us to know what views of the readers. You can access the survey [here](#)

Thank you for your time and effort,

With best regards
The FAO Forestry and Climate Change Team
Susan Braatz and Marc Dumas-Johansen

I. IN THE PRESS

16 February 2012 - *Jakarta Globe*

[5 years on, heart of Borneo Faces Big Conservation Challenges](#)

In February 2007, the three countries that share Borneo, the world's third-largest island, signed on to a conservation and sustainable forest development program initiated by the World Wildlife Fund to protect a vast swath of forest.

16 February 2012 - *Space Daily*

[New web tool to improve accuracy of global land cover maps](#)

An interactive web tool has been developed to improve the accuracy and extent of global land use and forest cover information. The new 'Geo-Wiki' uses Google Earth and information provided by a global network of volunteers to fill in 'data gaps' and to verify existing land cover information. Developers this week have launched a Geo-Wiki competition to raise awareness of the tool and to encourage community involvement in environmental monitoring.

13 February 2012 - *Bloomberg*

[Satellites for Climate checks get boost from Durban awakening](#)

Brazilian deforestation and melting polar ice caps are feeding a boom in demand in the \$2.1 billion market for satellite data, images and services used to monitor the planet. More images means more satellites and that need has spurred the development of the European Space Agency's Vega rocket, which is scheduled to lift off from Kourou, French Guiana, today to release nine satellites into orbit on its maiden flight.

09 February 2012 - *Women News Network*

[United Nations forum brings attention to forest conservation worldwide](#)

As the International Year of Forests 2011 draws to a close in February 2012, the Director of UN Forum on Forest Secretariat, Ms. Jan L. McAlpine, shares her thoughts about an eventful year. Thanks to the year, she says a clear message has been conveyed that "...all 7 billion people on earth have their economic, spiritual and physical health tied to forests."

08 February 2012 - *reed-monitor*

[Will REDD benefit Papua's Indigenous Peoples?](#)

In 2007, Barnabas Suebu, the Governor of Papua, was named as one of Time magazine's Heroes of the Environment. "We have to save the forests

before it is too late. If we do that, we can help save the planet and alleviate poverty at the same time," Suebu said.

03 February 2012 - *IISD*

[Adaptation Fund board publishes report of 16th meeting](#)

The Adaptation Fund Board (AFB) has released the approved report of its 16th meeting, which was held from 13-14 December 2011, alongside the seventh meeting of the Project and Programme Review Committee (PPRC), the Ethics and Finance Committee (EFC) and a civil society dialogue. At the meeting, the AFB approved project proposals in Uruguay, Cook Islands, Georgia, Madagascar, Samoa and Tanzania.

31 January 2012 - *IISD*

[CIFOR newsletter deconstructs COP 17 for Forests](#)

The latest newsletter of the Center for International Forestry Research (CIFOR) provides an assessment of the outcomes of the 17th session of the Conference of the Parties (COP 17) to the UN Framework Convention on Climate Change (UNFCCC), concluding that it delivered mixed results for forests.

27 January 2012 - *The Guardian*

[Amazon rainforest mapped in unprecedented detail](#)

Five thousand metres above the most biodiverse corner of the Amazon, tropical ecologist Greg Asner and his team see a kaleidoscope of colours among a mass of green.

24 January 2012 - *New York Times*

[In Brazil, Fears of a Slide Back for Amazon Protection](#)

Brazil has made great strides in recent years in slowing Amazon deforestation and showing the world it was serious about protecting the mammoth rain forest.

20 January 2012 - *CIFOR*

[Indigenous communities make a list of "do's and don'ts" for forest conservation schemes](#)

Indigenous and community groups have made a wish-list detailing how schemes that aim to reduce deforestation and forest degradation should work for those living in and amongst the forest. The recommendations, formulated at a meeting on the sidelines of recent the UN climate talks in Durban are timely in the light of the watering down of social safeguards in the REDD+ text decided upon at the summit.

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 May in Bonn, Germany where the Bonn Climate Change Conference will take place from 14 May to 25 May 2012. The negotiations will include the following bodies and working groups: The 36th sessions of the Subsidiary Body for Implementation (SBI) and the Subsidiary Body for Scientific and Technological Advice (SBSTA), the fifteenth session of the AWG-LCA, the seventeenth session of the AWG-KP and the first sessions 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.

III. EVENTS & MEETINGS

Upcoming events

Mitigation and Adaptation: Managing Forest Conflicts in the context of Climate Change for the ASEAN region

27 February - 2 March, Siem Reap, Cambodia

This five day course explores this nexus of forestry and conflict management in the context of climate change. Putting people at the heart of forest management, it aims to build the capacity of forest sector stakeholders and conflict management practitioners to prevent and manage conflict in support of community forestry development. [More](#)

Forests models for research and decision support in sustainable forest management

1-2 March 2012, Pierroton (Bordeaux), France

This international conference will focus on the current state of knowledge on forest models and their use to support decision support in sustainable forest management. It will highlight the results of the COST Action FP0603 and discuss them in the context of the world research on this topic. The conference is directed not only to researchers but provides also a forum for stakeholders where the support of models to forest management will be presented and discussed. 100 to 150 scientists, policy makers, planners, managers, specialized journalists, including representatives of a wide range of socioeconomic, ecological and institutional contexts are expected. [More](#)

27th session of the Latin America and the Caribbean Forestry Commission (LACFC)

5-9 March 2012, Asunción, Paraguay

The 27th session of the Latin America and the Caribbean Forestry Commission (LACFC) will advise FAO on the forestry programme to be developed in the Region in support of the sustainable management of forests and wildlife and related regional initiatives. The Commission aids in the exchange of information and, through special bodies such as technical cooperation networks, advises on suitable practices and actions. [More](#)

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](#)

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

Agricultural land use dynamics in the Brazilian Amazon based on remote sensing and census data

Espindola, G. M., de; Aguiar, A. P. D. de., Pebesma, E., Camara, G., Fonseca, L.

Applied Geography. 2012. 32: 2, 240-252

The potential impact of deforestation in the Brazilian Amazon on greenhouse gas emissions to the atmosphere calls for policies that take account of changes in forest cover. Although much research has focused on the location and effects of deforestation, little is known about the distribution and reasons for the agricultural uses that replace forest cover. We used Landsat TM-based deforestation and agricultural census data to generate maps of the distribution and proportion of four major agricultural land uses throughout the Brazilian Amazon in

1997 and 2007. We built linear and spatial regression models to assess the determinant factors of deforestation and those major agricultural land uses - pasture, temporary agriculture and permanent agriculture - for the states of Para, Rondonia, and Mato Grosso. The data include 30 determinant factors that were grouped into two years (1996 and 2006) and in four categories: accessibility to markets, public policies, agrarian structure, and environment. We found an overall expansion of the total agricultural area between 1997 and 2007, and notable differences between the states of Para, Rondonia, and Mato Grosso in land use changes during this period. Regression models for deforestation and pasture indicated that determinant factors such as distance to roads were more influential in 1997 than in 2007. The number of settled families played an important role in the deforestation and pasture, the effect was stronger in 2007 than 1997. Indigenous lands were significant in preventing deforestation in high-pressure areas in 2007. For temporary and permanent agricultures, our results show that in 1997 the effect of small farms was stronger than in 2007. The mapped land use time series and the models explain empirically the effects of land use changes across the region over one decade.

Forest Carbon Leakage Quantification Methods and Their Suitability for Assessing Leakage in REDD

Henders, Sabine & Ostwald, Madelene

Forests 3, no. 1: 33-58

This paper assesses quantification methods for carbon leakage from forestry activities for their suitability in leakage accounting in a future Reducing Emissions from Deforestation and Forest Degradation (REDD) mechanism. To that end, we first conducted a literature review to identify specific pre-requisites for leakage assessment in REDD. We then analyzed a total of 34 quantification methods for leakage emissions from the Clean Development Mechanism (CDM), the Verified Carbon Standard (VCS), the Climate Action Reserve (CAR), the CarbonFix Standard (CFS), and from scientific literature sources. We screened these methods for the leakage aspects they address in terms of leakage type, tools used for quantification and the geographical scale covered. Results show that leakage methods can be grouped into nine main methodological approaches, six of which could fulfill the recommended REDD leakage requirements if approaches for primary and secondary leakage are combined. The majority of methods assessed, address either primary or secondary leakage; the former mostly on a local or regional and the latter on national scale. The VCS is found to be the only carbon accounting standard at present to fulfill all leakage quantification requisites in REDD. However, a lack of accounting methods was identified for international leakage, which was addressed by only two methods, both from scientific literature.

Adapting tropical production forests to global climate change: risk perceptions and actions

Guariguata, M.R., Locatelli, B., Haupt, F.

International Forestry Review, Vol. 14(1).

As sustainable forest management is threatened by climate change, adaptation measures may be needed to maintain the productive capacity of tropical forests. Yet the extent to which foresters across the tropics implement adaptation actions in anticipation to climate change impacts remains largely unexplored. In this paper, an assessment of the perceptions of climate risks and the implementation of adaptation actions by forest managers and decision makers dealing with natural and planted tropical forests destined for production purposes is presented. An electronic questionnaire was disseminated globally during 2009, and 152 responses were received from Africa, the Americas, and Asia and the Pacific. Respondents perceived that natural and planted forests are at risk from being affected by climate change. However, they seemed ambivalent when asked if investing in adaptation was currently justified. The results of this survey provide initial insights into how climate considerations are being anticipated in tropical forest management and planning yet further examination at the national and local levels is warranted on how foresters, including those from the tropics, perceive climate change risks and handle current uncertainties in order to take action. The fact that climate change ranked below other threats to forests such as commercial agriculture and unplanned logging nevertheless suggests that long-term forest planning and management is not perceived by respondents as viable given other major drivers of forest loss and degradation.

Expected impacts of climate change on forests: Czech Republic as a case study

Hlasny, T.; Holusa, J.; Stepanek, P.; Turcani, M.; Polcak, N.

Journal of Forest Science, v. 57 (10): 422-431

We provide fundamental information about the future development of selected climate elements in relation to anticipated threat to forests in the Czech Republic. All analyses were carried out in relation to four elevation zones with specific potential forest vegetation - up to 350 m a.s.l. (oak dominance), 350-600 m a.s.l. (beech dominance), 600-900 m a.s.l. (beech-fir dominance), 900-1,100 m a.s.l. (spruce dominance). We found out that while the projected increase in mean annual air temperature is almost constant over the Czech Republic

(+3.25-3.5 deg C in the distant future), the frequency of heat spells at lower elevations is expected to increase dramatically compared to higher elevations. The precipitation totals during the vegetation season are projected to increase in the near future by up to 10% and to decrease in the distant future by up to 10% over all vegetation zones. In general, drought is presumed to become a key limiting factor at lower elevations, while increased temperature along with the prolonged vegetation season at higher elevations can be beneficial to forest vegetation. Consequently, northward progression of forest tree species and retraction of the species lower distribution range are a generic response pattern. Such impacts are presumed to be accompanied by changes in the distribution and population dynamics of pests and pathogens. Mainly the impacts on two key forest pests, Ips typographus and Lymantria dispar, are discussed.

A drought-induced pervasive increase in tree mortality across Canada's boreal forests

Peng, C., Ma, Z., Lei, X., Zhu, Q., Chen, H., Wang, W., Liu, S., Li, W., Fang, X., Zhou, X.

Nature Climate Change. DOI: 10.1038/NCLIMATE1293

Drought-induced tree mortality is expected to increase worldwide under projected future climate changes. The Canadian boreal forests, which occupy about 30% of the boreal forests worldwide and 77% of Canada's total forested land, play a critical role in the albedo of Earth's surface⁵ and in its global carbon budget. Many of the previously reported regional-scale impacts of drought on tree mortality have affected low- and middle-latitude tropical regions and the temperate forests of the western United States, but no study has examined high-latitude boreal regions with multiple species at a regional scale using long-term forest permanent sampling plots. Here, we estimated tree mortality in natural stands throughout Canada's boreal forests using data from the permanent sampling plots and statistical models. We found that tree mortality rates increased by an overall average of 4.7%yr⁻¹ from 1963 to 2008, with higher mortality rate increases in western regions than in eastern regions (about 4.9 and 1.9% yr⁻¹, respectively). The water stress created by regional drought may be the dominant contributor to these widespread increases in tree mortality rates across tree species, sizes, elevations, longitudes and latitudes. Western Canada seems to have been more sensitive to drought than eastern Canada.

Regional drought-induced reduction in the biomass carbon sink of Canada's boreal forests

Ma, Z., Peng, C., Zhu, Q., Chen, H., Yu, G., Li, W., Zhou, X., Wang, W., Zhang, W.

Proceedings of the National Academy of Sciences. doi/10.1073/pnas.1111576109

The boreal forests, identified as a critical "tipping element" of the Earth's climate system, play a critical role in the global carbon budget. Recent findings have suggested that terrestrial carbon sinks in northern high-latitude regions are weakening, but there has been little observational evidence to support the idea of a reduction of carbon sinks in northern terrestrial ecosystems. Here, we estimated changes in the biomass carbon sink of natural stands throughout Canada's boreal forests using data from long-term forest permanent sampling plots. We found that in recent decades, the rate of biomass change decreased significantly in western Canada (Alberta, Saskatchewan, and Manitoba), but there was no significant trend for eastern Canada (Ontario and Quebec). Our results revealed that recent climate change, and especially drought-induced water stress, is the dominant cause of the observed reduction in the biomass carbon sink, suggesting that western Canada's boreal forests may become net carbon sources if the climate change-induced droughts continue to intensify.

Reviewing the science and implementation of climate change adaptation measures in European forestry

Kolstrom, M., Lindner, M., Vilen, T., Maroschek, M., Seidl, R., Lexer, M. J., Netherer, S., Kremer, A., Delzon, S., Barbati, A., Marchetti, M., Corona, P

Forests 2 :4, 961-982

Developing adaptation measures in forestry is an urgent task because the forests regenerated today will have to cope with climate conditions that may drastically change during the life of the trees in the stand. This paper presents a comprehensive review of potential adaptation options in forestry in Europe based on three pillars: a review of the scientific literature, an analysis of current national response strategies, and an expert assessment based on a database compiled in the COST Action ECHOES (Expected Climate Change and Options for European Silviculture). The adaptation measures include responses to both risks and opportunities created by climate change and address all stages of forestry operations. Measures targeted to reduce vulnerability to climate change may either aim to reduce forest sensitivity to adverse climate change impacts or increase adaptive capacity to cope with the changing environmental conditions. Adaptation measures mitigating drought and fire risk such as selection of more drought resistant species and genotypes are crucial. For adaptation to be successful it is of the utmost importance to disseminate the knowledge of suitable adaptation measures to all decision makers from the practice to the policy level. The analysis of the ECHOES database demonstrates that this challenge is well recognized in many European countries. Uncertainty about the full extent of climate change impacts and the suitability of adaptation measures creates a need for monitoring and further research.

A better understanding of how to increase adaptive capacity is also needed, as well as regional vulnerability assessments which are crucial for targeting planned adaptation measures.

U.S. national forests adapt to climate change through Science-Management partnerships.

Littell, J. S.; Peterson, D. L.; Millar, C. I.; O'Halloran, K. A.;

Climatic Change. 2012. 110: 1/2, 269-296.

Developing appropriate management options for adapting to climate change is a new challenge for land managers, and integration of climate change concepts into operational management and planning on United States national forests is just starting. We established science-management partnerships on the Olympic National Forest (Washington) and Tahoe National Forest (California) in the first effort to develop adaptation options for specific national forests. We employed a focus group process in order to establish the scientific context necessary for understanding climate change and its anticipated effects, and to develop specific options for adapting to a warmer climate. Climate change scientists provided the scientific knowledge base on which adaptations could be based, and resource managers developed adaptation options based on their understanding of ecosystem structure, function, and management. General adaptation strategies developed by national forest managers include: (1) reduce vulnerability to anticipated climate-induced stress by increasing resilience at large spatial scales, (2) consider tradeoffs and conflicts that may affect adaptation success, (3) manage for realistic outcomes and prioritize treatments that facilitate adaptation to a warmer climate, (4) manage dynamically and experimentally, and (5) manage for structure and composition. Specific adaptation options include: (1) increase landscape diversity, (2) maintain biological diversity, (3) implement early detection/rapid response for exotic species and undesirable resource conditions, (4) treat large-scale disturbance as a management opportunity and integrate it in planning, (5) implement treatments that confer resilience at large spatial scales, (6) match engineering of infrastructure to expected future conditions, (7) promote education and awareness about climate change among resource staff and local publics, and (8) collaborate with a variety of partners on adaptation strategies and to promote ecoregional management. The process described here can quickly elicit a large amount of information relevant for adaptation to climate change, and can be emulated for other national forests, groups of national forests with similar resources, and other public lands. As adaptation options are iteratively generated for additional administrative units on public lands, management options can be compared, tested, and integrated into adaptive management. Science-based adaptation is imperative because increasing certainty about climate impacts and management outcomes may take decades.

Estimated carbon dioxide emissions from tropical deforestation improved by carbon-density maps

Baccini, A., Goetz, S.J., Walker, W.S., Laporte, N.T., Sun, M., Sulla-Menashe, D., Hackler, J., Beck, P.S.A., Dubayah, R., Friedl, M.A., Samanta, S., Houghton, R.A.

Nature Climate Change

doi:10.1038/nclimate1354

Deforestation contributes 6-17% of global anthropogenic CO₂ emissions to the atmosphere. Large uncertainties in emission estimates arise from inadequate data on the carbon density of forests and the regional rates of deforestation. Consequently there is an urgent need for improved data sets that characterize the global distribution of aboveground biomass, especially in the tropics. Here we use multi-sensor satellite data to estimate aboveground live woody vegetation carbon density for pan-tropical ecosystems with unprecedented accuracy and spatial resolution. Results indicate that the total amount of carbon held in tropical woody vegetation is 228.7PgC, which is 21% higher than the amount reported in the Global Forest Resources Assessment 2010 (ref. 3). At the national level, Brazil and Indonesia contain 35% of the total carbon stored in tropical forests and produce the largest emissions from forest loss. Combining estimates of aboveground carbon stocks with regional deforestation rates we estimate the total net emission of carbon from tropical deforestation and land use to be 1.0PgCyr⁻¹ over the period 2000-2010—based on the carbon bookkeeping model. These new data sets of aboveground carbon stocks will enable tropical nations to meet their emissions reporting requirements (that is, United Nations Framework Convention on Climate Change Tier 3) with greater accuracy.

The carbon density data used in the article is freely available for download. Click [here](#)

A review of decision-making approaches to handle uncertainty and risk in adaptive forest management under climate change.

Yousefpour, R.; Jacobsen, J. B.; Thorsen, B. J.; Meilby, H.; Hanewinkel, M.; Oehler, K.;

Annals of Forest Science. 2012. 69: 1, 1-15. 144 ref.

Context: This review paper provides an overview of approaches to which we may resort for handling the complex decision problems involving uncertainty and risk that climate change implies for forest managers.

Modelling approaches that could support adaptive management strategies seem to be called for, not only as climate change denotes increased economic uncertainty but also because new and more reliable information becomes available as time passes and climate changes. Aims: The paper (1) provides a broad overview of state-of-the-art methods for optimal decision making under risk and uncertainty in forestry and (2) elaborates on the possible use of these methods in adaptive forest management under climate change. Method: A survey of the current literature is carried out to identify approaches and developments that may prove most promising in relation to different challenges to the adaptive management of forest ecosystems under climate change. Results: Most studies focusing on changing, typically increasing, risks in forest management under climate change tend to build on existing approaches about changes in risk levels contingent on climate change scenarios. Conclusion: Finally, we discuss what to emphasise in future studies to improve the understanding of adaptive forest management and decision support tools needed to cope with climate change.

V. PUBLICATIONS, REPORTS AND OTHER MEDIA

Map of SBSTA submissions: REDD+ safeguard information system

World Resources Institute & Client Earth - Justice for the Planet

In December 2010, the 16th Conference of the Parties (COP 16) to the United Nations Framework Convention on Climate Change (UNFCCC) requested the Subsidiary Body for Scientific and Technical Advice (SBSTA) to develop guidance relating to paragraph 71(d) of the Cancun Agreements in time for COP 17 in Durban, December 2011. Paragraph 71(d) speaks to a system to provide information on how the safeguards in Annex 1 of the Cancun Agreements are being addressed and respected (termed the “safeguard information system” or SIS). In June 2011, SBSTA discussed the development of a guidance document on the SIS, and invited Parties and accredited Observers to submit their views on such guidance.² Submissions were welcomed on: characteristics; design; provision of information; potential barriers, if any, to providing information on addressing and respecting safeguards; and other relevant issues. SBSTA received 26 submissions in total, 14 from Parties and 12 from Observers. Several submissions represent the view of more than one Party or Observer. While most submissions followed the structure suggested by SBSTA in June, they often covered substantively different topics under each heading. In an effort to bring greater clarity to discussions surrounding the SIS, ClientEarth and the World Resources Institute (WRI) have divided the information in the submissions into four categories: 1. The Role of the Safeguard Information System, 2. The Type of Information that Parties Should Provide, 3. How to Collect and Provide Information and 4. Other Elements of the International Safeguard System. [More](#)

Responding to climate change in national forests: a guidebook for developing adaptation options

US Forest Service

This guidebook contains science-based principles, processes, and tools necessary to assist with developing adaptation options for national forest lands. The adaptation process is based on partnerships between local resource managers and scientists who work collaboratively to understand potential climate change effects, identify important resource issues, and develop management options that can capitalize on new opportunities and reduce deleterious effects. Because management objectives and sensitivity of resources to climate change differ among national forests, appropriate processes and tools for developing adaptation options may also differ. Regardless of specific processes and tools, the following steps are recommended: (1) become aware of basic climate change science and integrate that understanding with knowledge of local resource conditions and issues (review), (2) evaluate sensitivity of specific natural resources to climate change (rank), (3) develop and implement strategic and tactical options for adapting resources to climate change (resolve), and (4) monitor the effectiveness of adaptation options (observe) and adjust management as needed. Results of recent case studies on adaptation in national forests and national parks can facilitate integration of climate change in resource management and planning and make the adaptation process more efficient. Adaptation to climate change will be successful only if it can be fully implemented in established planning processes and other operational aspects of national forest management. [The guidebook](#)

Pro-poor benefit distribution in REDD+. Who gets what and why does it matter?

IIED

Ensuring the poor or the most vulnerable sections of society benefit from REDD+ is key mainly to build both national and international legitimacy, and foster successful delivery of conservation and social objectives. Equitable benefit sharing issues at a community or household level are overlooked in both academic and non-academic literature compared to distributional issues at international level. Therefore, this paper aims to look at some of the issues related to benefit distribution at village and household level. Some of the very important factors that are very likely to affect benefit distribution from REDD+ at a village level are

(1) whether payments are made directly to households or to communities as a whole; and
(2) whether payments are made in cash or in-kind
In addition the paper looks at the following design issues closely related to the above two questions: what should the provision of benefits be based on? Land size, actual emission reductions, or demography of the community to ensure that equitable design criteria are met; how to ensure that more vulnerable groups such as ethnic minorities, landless poor, women and children do not lose out? And what impact would the type of benefit transferred have on the wellbeing of the communities and local economy? [The paper](#)

Pathways to climate resilience: A guidebook for forest-based communities

Forum for Research and Extension in Natural Resources (FORREX)

A guidebook that helps communities think about climate change and its local impacts in a structured way is being developed as a joint effort of Natural Resources Canada (NRCan), the Canadian Model Forest Network, and FORREX. Partially funded by the Forest Investment Account-Forest Science Program, the guidebook's purpose is to assist rural, forest-based communities in Canada become more climate resilient. Especially created for smaller communities (less than 15,000 population), the guidebook acknowledges that while small communities are especially exposed to the impacts of climate and climate change, there are also opportunities for them to benefit from climate change. [The guidebook](#)

Preventing the risks of corruption in REDD+ in Indonesia

CIFOR

This paper analyses the risks for corruption in REDD+ readiness activities in Indonesia and the conditions that may influence potential outcomes. REDD+ is a mechanism designed under the United Nations Framework Convention on Climate Change to enhance the role of forests in curbing climate change, which include forest conservation and activities that increase carbon stocks. The Government of Indonesia has been introducing policies and regulations, creating coordinating mechanisms and initiating demonstration projects to prepare for REDD+. The REDD+ readiness phase in Indonesia involves significant funding from public and private sources. This paper focuses on the readiness phase because this is the period during which policies, institutions, systems and processes are designed. These will influence the presence or absence of risks and conditions for corruption in subsequent phases. The research relied on analysis of relevant legislation, interviews with agency officials, literature reviews and media reports. As Indonesia stands at the forefront in REDD+ policy reform and institutional design, it is hoped the analysis will also inform other forest-rich tropical countries and the donor community. [The working paper](#)

Does Tenure Matter? Assessment of change in forest cover in Nepal

Helvetas and The Rights and Resources Initiative (RRI)

This study is based on the mapping and analysis of the forest condition in different forest tenure regimes and is expected to benefit everyone who is interested in forest tenure regimes and their effect to environment. This study applied GIS and Remote Sensing as the major tools for the analysis. The study revealed that forests have improved in all tenure regimes. Community forestry did the best by increasing the new forest area by almost 33% and improving existing forest quality by 20%. In comparison, the government managed forest regime increased the new forest area by 17% and improved the quality of forest by 15%. However, individual farmers were found to be improving the condition of existing forest by 25% or more on their private land, although they lagged behind in creating new forest areas. The study shows that only 11% of newly created forest area is on private land. All changes that occurred in 20 years are the result of tenure reform that the Government of Nepal made 30 years ago so that local communities held the key. The findings of the study may surprise those who still believe in the so-called 'Theory of Himalayan Degradation'. This may also surprise the forest planners and academics that still rely on national survey data, which shows that country's forest resources are generally deteriorating, and the deterioration trend is even higher in the hills and mountains (FRA 1999). In the eight VDCs covered by the study, some elements of deforestation and degradation are noticed, but the quantum of improved and the new forests far outweighs both deforestation and degradation. [The paper](#)

Rise and spread of national and sub-national forest carbon schemes

Forest Carbon Asia

International climate change negotiations at COP17 in Durban, December 2011 saw further developments on the proposed REDD+ mechanism to reduce forest-based emissions and enhance forest carbon sinks. A binding international REDD+ agreement and a larger climate change agreement will likely be many years in the making. In the meantime, countries and states or provinces within countries have initiated their own forest-related emission reduction and offsetting schemes within the last year. Developed countries and states with emission reduction targets such as Australia, California (USA), Quebec (Canada), UK, Japan and South Korea are allowing domestic polluters to use forest carbon offsets, and are setting up domestic forest carbon offsetting standards

and/or supporting forest offset projects in developing countries. Developing countries like China, India and Ecuador are launching their own forest carbon sequestration or protection programs independent of or in advance of agreement on a REDD+ mechanism under the UNFCCC. This brief provides an update on national and international REDD+ and other forest carbon policies from April 2011 to January 2012. Please see FCA Brief No. 2 for an earlier global policy review up to March 2011. [The brief](#)

Forest Carbon standards grow, mature and link up

Forest Carbon Asia

Year 2011 saw existing forest carbon standards across the world launch new or revised methodologies, contract new projects and issue verified credits. Given the breadth and scope of issues covered by REDD+, links between forest carbon standards and other existing standards such as FSC and commodity roundtables' standards are being explored and complementary socio-environmental standards continue to be initiated. This brief provides an update on these standards and an updated consolidated comparison table of key features of all standards. Please see FCA Brief No. 3 for an earlier standards review up to March 2011. We only focus on standards that are applicable for forest carbon activities in Asia. [The brief](#)

Addressing Climate Change Challenges in Africa: A practical guide towards sustainable development

The African Ministerial Conference on Environment (AMCEN) & African Union

This Guidebook aims to translate available climate science and current international climate policies into the tools for practical action in Africa, in the context of sustainable development. In this regard the guidebook focuses on the potential climate change impacts on key sectors in Africa and appropriate adaptation and mitigation options. It outlines the governance, technological, financial and capacity building opportunities available to the continent to work effectively towards sustainable development. Experts and policymakers will be advised on where to look for additional information and tools to develop policies, programmes and plans to shape future sustainable development on the continent, under a changing climate. The [guidebook](#)

UNEP Yearbook. Emerging issues in our global environment

UNEP

The UNEP Year Book 2011 underlines some of the successes achieved when science is fully brought into service for sustainable development. Yet, it also spotlights that many of the international responses to the challenges remain at best a patchwork: at worst, often far behind the scale and pace of environmental change being witnessed today. [More](#)

VI. JOBS

Short term consultancies in LAO PDR

Österreichische Bundesforste AG Consulting - deadline for application is 28 February 2012

Österreichische Bundesforste AG Consulting is seeking a number of short term national and international experts to be engaged in the project on Biodiversity Conservation, Protected Areas Management and Climate Change. [More](#)

Director General

CIFOR - deadline for application is 29th of February 2012

CIFOR is looking for a Director General. The Director General is the Chief Executive Officer of the Center and is responsible to the Board of Trustees for the overall scientific leadership, operation and management of CIFOR. The Director General will ensure that programmes and objectives are properly developed to fulfill the mission of the Center. For at least the next two years, the Director General will also ensure the effectiveness and integrity of the Center's leadership of the CGIAR Research Programme on Forests, Trees and Agroforestry (CRP6). [More](#)

Deputy Director General

CIFOR

CIFOR is seeking a Deputy Director General. The Deputy Director General will serve as CIFOR's chief operating officer, with delegated responsibility from the Director General for leading, planning, executing, managing, and monitoring the full range of CIFOR's global research and impact-oriented activities. This role requires

coordination of activities across three CIFOR research programmes and their contributions to CGIAR research programmes (CRPs), regional and project offices, and the support services provided by information, human resources, and finance and administration units. [More](#)

Technical Advisor, REDD+ Readiness

Conservation International - deadline for application is 29th of February 2012

Conservation International is seeking a Technical Advisor on REDD+ Readiness. The Technical Advisor, in collaboration with other members of the Climate Change Initiatives team, will be responsible for providing technical support, coordinating resources, and facilitating teamwork and collaboration to meet objectives related to REDD+ Readiness. [More](#)

Post Doctoral Fellow Climate Change

ASB - Partnership for the tropical forest margins - deadline for application is 29th of February 2012

ASB is seeking a post doc climate change scientist. The Post Doc Climate Change Scientist will be a member of the ASB's Global Coordination Office. Under the supervision of the ASB Global Coordinator, the incumbent will be responsible for conducting research on land management experiences at linking climate change adaptation and mitigation through desk reviews, meta-analysis and case studies. The incumbent will be based at the World Agroforestry Centre headquarters in Nairobi, Kenya. [More](#)

Chief of Party for Climate Change Mitigation and Adaptation Programs in Southeast Asia

Winrock International - deadline for application is 2nd of March 2012.

Winrock is seeking Chief of Party candidates for upcoming USAID-funded programs related to Climate Change Mitigation and Adaptation in Southeast Asia. The anticipated programs will be designed to strengthen the capacity of target countries in Southeast Asia to achieve meaningful and sustained reductions in greenhouse gas emissions from the forestry-land use sector, and allow these countries to benefit from the emerging international REDD+ framework. Programs are expected to work at the regional, government and community levels, and will involve broad-based policy dialogue and capacity building, as well as targeted community-level interventions. Linkages may also be made to address the impacts of climate change on livelihoods, water flows, natural resources, biodiversity and food security, and to increase the resilience of communities vulnerable to changing ecosystems, agricultural production, and natural resource-based livelihoods. [More](#)

Chief of Party

USAID IFACS - the position is open for applicants until filled

Tetra Tech ARD, is accepting expressions of interest from qualified Chief of Party candidates for our USAID IFACS Project in Indonesia. USAID IFACS is a 4 year project that began in November 2010 and is scheduled to end in September 2014. USAID IFACS seeks to reduce the threats of deforestation and climate change, and help the Government of Indonesia (GOI) conserve the country's tropical forests, wildlife, and ecosystem. The project works in Aceh, Central and West Kalimantan, and North and South Papua. [More](#)

VII. ANNOUNCEMENTS

CGIAR Research Program on Forests, Trees and Agroforestry: Livelihoods, landscapes and governance

CGIAR

The CGIAR's (Consultative Group on International Agricultural Research) Consortium Research Program 6 (CRP6) on "Forests, Trees and Agroforestry: Livelihoods, landscapes and governance" was officially launched on July 1st, 2011. The research programme has three strategic objectives: i) Food for People: Create and accelerate sustainable increases in the productivity and production of healthy food by and for the poor. ii) Environment for People: Conserve, enhance and sustainably use natural resources and biodiversity to improve the livelihoods of the poor in response to climate change and other factors. iii) Policies for People: Promote policy and institutional change that will stimulate agricultural growth and equity to benefit the poor, especially rural women and other disadvantaged groups. Research will focus on areas where local people depend on resources from forests and agroforestry for their livelihoods, where forests important for carbon sequestration or other environmental services are under severe pressure from timber extraction or conversion to other land uses, and/or where forests are projected to be severely affected by climate change. The research program consists of five components involving smallholder production systems, management and conservation of forest and tree

resources, environmental services at the landscape scale, climate change adaptation and mitigation, and impacts of trade and investment on forests and people. The programme is being implemented by four CGIAR centers (CIFOR, World Agroforestry Centre, Bioversity International and CIAT) in collaboration with their partners over a 10 year period, with a start up budget (2011-2013) of US\$ 232.4 million. The website of the research programme can be accessed [here](#), and you can get more information from CRP6 staff directly by emailing cgiaforestsandtrees@cgiar.org

Private Sector Initiative - database of actions on adaptation

UNFCCC

This online database of case studies has been developed under the Private Sector Initiative (PSI) of the Nairobi work programme, and features good practices and profitable climate change adaptation activities being undertaken by private companies (sometimes in partnership with NGOs or the public sector) from a wide range of regions and sectors. [More](#)

New blog: Landscapes for People, Food and Nature

EcoAgriculture Partners

A consensus is emerging that many of our production systems for food, forest and wetland products are unsustainable-for people, for long-term food and fibre supply and for nature. Integrated agricultural landscape approaches combine interests across multiple sectors to simultaneously protect livelihoods, conserve biodiversity and ecosystem services, and improve food security under the backdrop of a changing climate. The three-year collaborative Landscapes for People, Food and Nature Initiative aims to scale up successful strategies that address these challenges. This Blog will complement the Initiative, increasing awareness of integrated agricultural landscapes, fostering a dynamic community of practice, and showcasing the work of the Initiative Co-Organizers and other practitioners of landscape approaches. Leaders and innovators will provide their insights and commentary, encouraging discussion around the blog topics. [More](#)

Global Forest Resources Assessment interactive database now online

FAO

A new interactive online database provides access to most of the collected information in FAO's comprehensive and most recent Global Forest Resources Assessment (FRA 2010). The main module has options to use multiple output formats and generate simple diagrams, providing easier and more flexible access to FRA data. [More](#)

Tropical Native Species Reforestation Information Clearinghouse (TRIC)

Environmental Leadership and Training Initiative (ELTI)

The Environmental Leadership and Training Initiative (ELTI) has launched a new website and tool for capacity-building on native species reforestation in Tropical Asia and the Neotropics. [More](#)

Global climate and food research initiative takes off

CCAFS

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), which was formally launched as a 10 year program in 2011, is a strategic partnership of the CGIAR and the Earth System Science Partnership (ESSP). The CGIAR Lead Center of the program is the International Center for Tropical Agriculture (CIAT) in Cali, Colombia. CCAFS brings together the world's best researchers in agricultural science, development research, climate science and Earth System science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security, and develop the tools and options for effective climate adaptation and mitigation in the agricultural sector. The program's current focus regions are East and West Africa and the Indo-Gangetic plains. CCAFS has with partners focused on a broad range of research topics. Their recent research highlights include:

Analyzing and outlining how research can help integrate agriculture and food security in climate change policies

Analyzing the opportunities for agricultural mitigation in light of key lessons from [Reducing Emissions from Deforestation and forest Degradation \(REDD+\)](#), and [how current REDD+ policies can address agriculture](#)

Assessing and developing tools and approaches for bringing climate information 'down to earth' for policy makers' and farmers' decision-making

Supporting and facilitating communication and information sharing among scientists, policy makers and farmers.

[Developing participatory action research methods to inform research on gender and climate smart agriculture](#)

Examining issues and opportunities for climate finance in smallholder agricultural systems

[Mapping climate hotspots of food insecurity across the tropics](#)

[Convening the Commission on Sustainable Agriculture and Climate Change, to help identify which policy changes and actions are needed to help the world achieve food security in the face of climate change](#)

[In collaboration with a range of agricultural organizations, convening the third Agriculture and Rural Development Day alongside the UN Climate Conference in Durban](#)

For more information, visit www.ccafs.cgiar.org, follow on twitter: @cgiarclimate and on [Facebook](#)

Review of Working Group contributions to the IPCC 5th Assessment Report (AR5) has started

IPCC

The AR5, summarizing the state of scientific knowledge about climate change, is going through an elaborate system of drafting, review by experts and governments, and revision to ensure that it meets the highest standards, is comprehensive and reflects the published literature and a range of scientific viewpoints. The main stages of the IPCC review process are the review of the “first-order draft” (FOD) by scientific experts, the review of the “second-order draft” (SOD) by experts and governments and the government review of the final draft of the summary for policymakers. Following this, the final draft report and its summary for policymakers are submitted for acceptance and approval to the IPCC Plenary. [More](#)

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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