



# Wilton Park Conference Bulletin

A summary report of the Wilton Park Conference on "Forestry: a sectoral response to climate change"

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## SUMMARY OF THE WILTON PARK CONFERENCE ON FORESTRY - A SECTORAL RESPONSE TO CLIMATE CHANGE: 21-23 NOVEMBER 2006

Wilton Park, an academically independent agency of the UK Foreign and Commonwealth Office, organizes up to 60 policy conferences each year, bringing together decision makers and opinion-formers from around the world to address the most pressing global issues. The Wilton Park Conference on "Forestry: a sectoral response to climate change" represents another conference in this series. The Conference was held from Tuesday, 21 November, to Thursday, 23 November, at Wilton Park Conference Centre in Steyning, West Sussex, UK. The event was organized and hosted by the British Forestry Commission, with support from the Organization for Economic Cooperation and Development (OECD).

Attended by about 45 experts on forest and climate change issues, the Conference involved representatives from academia, governmental, inter-governmental and non-governmental organizations from more than 15 countries. During the Conference, participants addressed pressing climate change and forestry questions, including: whether the impacts of climate change on boreal, temperate and tropical forest can be predicted, and whether present forestry policy and practice adequately accommodate the current understanding of climate change; what contribution carbon sequestration in forests globally can make to the mitigation of climate change; whether the current international frameworks and agreements are achieving sustainable forestry and reforestation, and whether they are sufficient to stop deforestation and forest degradation; how the national and international forest sectors should respond to climate change in the future; and whether new research, organizational, policy and practice initiatives are required.

The three days of the Conference were divided into eight sessions addressing scientific and political issues regarding forestry and climate change. On Tuesday morning, participants heard welcoming and introductory speeches followed by the opening address delivered by Ian Pearson, Minister of State for Climate Change and the Environment, UK. Throughout the day on Tuesday and Wednesday participants addressed: carbon sequestration; global carbon sources and sinks; current international perspectives and the science and policy interface; forestry options for contributing to climate change mitigation; integrated forest management in Europe; energy and woodfuel; impacts of climate change on forests; and national and international frameworks for current and future

policies. On Wednesday afternoon, there were four parallel workshop sessions on: risks and uncertainties; governance and stakeholders; forest sector responses; and commercial projects and research initiatives. On Thursday morning, the final session addressed the implications for future forestry and related environmental and development policies, followed by feedback by rapporteurs from the parallel workshops and presentation of conclusions and "the way forward."

A field trip to the Wiston Estate was held on Thursday afternoon to see the Estate's woodland management and woodfuel supply, followed by a visit to Chiddingfold and its semi-natural woodland restoration and to Alice Holt Research Forest and its intensive forest monitoring site and carbon dioxide flux station.

The papers presented at the Conference are scheduled to be published in 2007.

## A BRIEF HISTORY OF FORESTRY AND CLIMATE CHANGE

Climate change is considered to be one of the most serious threats to sustainable development, with adverse impacts expected on the environment, human health, food security, economic activity, natural resources and physical infrastructure. Scientists agree that rising concentrations of anthropogenically

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produced greenhouse gases in the Earth's atmosphere are leading to changes in the climate. According to the Intergovernmental Panel on Climate Change (IPCC), the effects of climate change have already been observed, and scientific findings indicate that precautionary and prompt action is necessary.

Globally, forest ecosystems play a key role in addressing climate change by absorbing carbon dioxide from the atmosphere and storing it in growing vegetation and soil. Deforestation, caused by the unsustainable harvesting of timber, and the conversion of forests to other land-uses leads to significant emissions of this stored carbon back to the atmosphere. Deforestation alone currently accounts for some 20% of global emissions of carbon dioxide. Forests and woodlands can be managed as a sustainable source of wood, which is considered an alternative and less polluting energy source to fossil fuels, and a low-energy construction material.

A number of international policy processes deal with forestry and climate change. These processes have implications for national policy on forestry, particularly with respect to deforestation and the management of forests.

**UNFF:** The establishment of the United Nations Forum on Forests (UNFF) followed a five-year period (1995-2000) of forest policy dialogue facilitated by the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF). In October 2000, the Economic and Social Council of the United Nations (ECOSOC), in Resolution E/2000/35, established UNFF as a subsidiary body with the main objective of promoting the management, conservation and sustainable development of all types of forests. To achieve its main objective, principal functions of UNFF were identified as: facilitate implementation of forest-related agreements and foster a common understanding on sustainable forest management (SFM); provide for continued policy development and dialogue among governments, international organizations, and major groups, as identified in Agenda 21, as well as to address forest issues and emerging areas of concern in a holistic, comprehensive and integrated manner; enhance cooperation as well as policy and programme coordination on forest-related issues; foster international cooperation and monitor, assess and report on progress; and strengthen political commitment to the management, conservation and sustainable development of all types of forests. The IPF/IFF processes produced more than 270 proposals for action to achieve SFM, and form the basis for the UNFF Multi-Year Programme of Work and Plan of Action, which have been discussed at annual sessions. Country- and organization-led initiatives have also contributed to UNFF.

The UNFF process has to date not been successful in finding agreement on an instrument for all types of forests. Analysts have observed that the sense of urgency that brought the forests issue into the mainstream of international environmental politics is no longer present within the UNFF process.

**UNFCCC AND KYOTO PROTOCOL:** Forestry and climate change take one of the most prominent seats in the UN Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol. The UNFCCC, adopted in 1992, represents the international political response to climate change. The UNFCCC sets out a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases to avoid "dangerous anthropogenic interference" with the climate system. Controlled gases include methane, nitrous oxide and, in particular, carbon

dioxide. The UNFCCC entered into force on 21 March 1994, and now has 189 parties. In December 1997, delegates at COP 3 in Kyoto, Japan, agreed to a Protocol to the UNFCCC that commits developed countries and countries making the transition to a market economy to achieve emissions reduction targets. These countries, known under the UNFCCC as Annex I parties, agreed to reduce their overall emissions of six greenhouse gases by an average of 5.2% below 1990 levels between 2008-2012 (the first commitment period), with specific targets varying from country to country. The Protocol also establishes three flexible mechanisms to assist Annex I parties in meeting their national targets cost-effectively: an emissions trading system; joint implementation (JI) of emissions-reduction projects between Annex I parties; and the Clean Development Mechanism (CDM), which allows for emissions reduction projects to be implemented in non-Annex I Parties (developing countries). Following COP 3, parties began negotiating many of the rules and operational details governing how countries will reduce emissions and measure their emissions reductions. To date, 163 parties have ratified the Kyoto Protocol, including 37 Annex I Parties representing 61.6% Annex I greenhouse gas emissions in 1990. The Kyoto Protocol entered into force on 16 February 2005.

The Kyoto Protocol contains a number of provisions on land use, land-use change and forestry, which have been some of the most contested issues, resulting in negotiations that have spanned years. Many of the discussions have centered around how to govern sequestration of carbon in trees, particularly whether and how this could count towards developed countries' emissions reductions, and the rules and procedures for monitoring these credits. Current negotiations are focused on a question of how to avoid emissions from deforestation in developing countries. At the most recent meeting, held from 6-17 November 2006 in Nairobi, Kenya, delegates agreed to hold a workshop in 2007 that will focus on ongoing and policy approaches and positive incentives, and technical and methodological requirements related to their implementation, assessment of results and their reliability, and improving understanding of reducing emissions from deforestation in developing countries.

**WILTON PARK CONFERENCE ON CLIMATE CHANGE - INTERNATIONAL DIMENSIONS:** The Wilton Park Conference on Climate Change was held from 15-18 September 2005. The Conference discussed: international responses to the climate change challenge; Southern perspectives on global climate change areas; Africa as a special case; the interaction among energy, development and climate change; ways to deal with uncertainty; the options towards the future framework for action on climate change; the options towards a global energy partnership; and response measures to climate impacts.

## REPORT OF THE MEETING

### OPENING ADDRESS

Jim Lynch, Forest Research, UK, welcomed participants and said biological resource management for sustainable agricultural systems is the focus of a major programme of the OECD. He explained the programme supports research fellowships and conferences with emphasis on natural resources, conservation and sustainable forestry practices.

Lord David Clark, Chairman of the Forestry Commission, UK, underscored the Conference objectives of inserting the issue of forestry and climate change in the political agenda, and stressed that the recently published, UK government commissioned “Stern Review Report on the Economics of Climate Change” has brought climate change to the attention of top politicians. He said deforestation contributes to 18 % of global carbon loading, and noted that although forest area declined by 800,000 hectares in the 1990s, the trend has reversed and there has been a gain of one million hectares in the last seven years, largely due to reforestation in China. He contended that reforestation is one of the easiest means of addressing climate change, and added that half of the world’s forests are located in five countries.

Ian Pearson, Minister of State for Climate Change and the Environment, UK, outlined the UK’s climate change policy and noted the importance of identifying practical solutions for combating climate change. He highlighted the growing scientific evidence of global warming and said that climate change is an environmental, economic, developmental and security issue. He stressed the Stern Report’s finding that climate change is a threat to economic growth, and the longer action is delayed, the more expensive it will be to tackle the negative impacts. Pearson acknowledged that stabilizing the amount of carbon dioxide in the atmosphere is challenging, and stressed the need to move beyond the Kyoto Protocol. He underscored the Stern Review’s findings on deforestation. Pearson highlighted that more work needs to be done on: linking forest production to carbon markets; promoting sustainable development; and identifying the impacts of carbon prices in the global market, if forests are to be included in the EU Emission Trading Scheme and other trading systems. In conclusion, Pearson urged participants to identify practical solutions for governments to implement forest policies that could contribute to tackling climate change.

In the ensuing discussion, comments focused on markets and the economic forces driving deforestation. Participants noted that developing countries such as China are still outside of Kyoto commitments but are addressing forestry problems. There was a discussion of international mechanisms for consensus on internationally agreed objectives such as the UNFF and the Commission on Sustainable Development.

### ***SESSION ONE: CARBON SEQUESTRATION, FORESTRY, SOILS AND WASTE MANAGEMENT***

Jeff Burley, Chairman of C-Questor Ltd, UK, presented on carbon sequestration as a forestry opportunity in a changing climate, noting the social benefits derived from forests, particularly in local communities in developing countries. He stressed the challenge faced by the private sector to generate business initiatives while supporting social benefits. For reducing emissions from deforestation, Burley described the options of establishing protected areas, increasing agricultural productivity, and fostering markets and recycling activities. For reducing negative impacts caused by forestry practices, he suggested reducing impacts of logging, promoting fire management and suppression, and enhancing fuel substitution. Burley pointed out obstacles for the private sector related to the rules and conditions of the Kyoto Protocol’s Clean Development Mechanism (CDM).

Jim Schepers, Agricultural Research Service, US, presented a report on the OECD’s cooperative research programme on “Soils and waste management: a challenge to climate change,” highlighting scientific evidence of global warming and increased world energy consumption. He noted the global warming potential of methane and emissions generated from manure management, landfills, agricultural residues and burning activities. Schepers said soil organic matter is the largest carbon stock of the continental biosphere and underscored the high concentration of methane in the soil, compared to that found in the atmosphere and vegetation. He described the cycle of decomposition of organic matter and stressed the need to better understand long-term dynamics, underscoring options for sustainable management of solids, including: adopting no-till farming; maintaining a positive nutrient balance; using precision farming and site-specific management; retaining crop residue; conserving water; restoring marginal, degraded or desertified soil; and growing improved genetically modified plants along with other agricultural practices.

### ***SESSION TWO: CLIMATE CHANGE, GREENHOUSE GAS EMISSION REDUCTION AND THE ROLE OF FORESTS: CURRENT AND FUTURE SCENARIOS OF GREENHOUSE GAS EXCHANGE***

This session was chaired by Peter Freer-Smith, Forestry Commission Research Agency.

Martin Heimann, Director of the Max-Planck Institute for Biogeochemistry, Germany, presented a paper on present and future global carbon sources and sinks. He said global carbon cycles measured during the last half-century are well quantified for atmospheric and oceanic dioxide carbon uptakes, but noted that the global land budget is less well quantified, leading to considerable variability in future scenarios shown in models. He said that the regional source-and-sink distributions show high greenhouse gas (GHG) emissions in the northern hemisphere while the largest sinks are in the south, and that forest fires contribute significantly to GHG emissions. He concluded that the roles of terrestrial sources and sinks are undisputed but their measurement depends on poorly known estimations of emissions from land use activities.

Bernhard Schlamadinger, Joanneum Research, Germany, spoke on afforestation, reforestation (A/R) and reduced deforestation to sequester carbon and reduce emissions respectively, and noted that land use, land-use change and forestry (LULUCF) is both part of the problem and the solution. He highlighted the obstacles faced by A/R projects due to uncertainty about credits, and the solution introduced by the concept of limited temporary carbon credits. For addressing deforestation emissions, he underscored the need to: estimate historical emissions; establish benchmarks for the future to assess current performance; estimate over time and account for emissions compared to benchmarks and issues of permanence; and provide incentives to reduce such emissions. He noted the challenges faced by CDM A/R projects, including the need for up-front financing and extending the 8,000 tons threshold for small-scale projects. Schlamadinger concluded that the Kyoto Protocol is inappropriate for addressing forestry and agriculture issues to reduce GHG emissions, highlighting the slow progress made by CDM A/R projects and the limits of their



results. He stressed the need for more flexible approaches than the ones offered by the Kyoto Protocol, with incentives to reduce GHG emissions and suggested that “no regret” activities include capacity building and trial programmes.

Risto Seppälä, Finnish Forest Research Institute, presented on threats and opportunities in the global forest sector. He listed as major trends: globalization, which shifts production from North to South; increasing use of plantations; and slowing demand in Western Europe and North America. Seppälä described the threat of deforestation, which is increasing at a net rate of seven million hectares per year. Highlighting trends in information and communications, he concluded that forest management must become more holistic and shift its focus to non-timber forest products.

Participants discussed methodological issues of measuring the rate of carbon dioxide uptake by forests. Reforestation was discussed in the context of the Kyoto Protocol’s provisions on CDM and other variables such as usage and disturbance.

### ***SESSION THREE: CLIMATE CHANGE AND FORESTS; CURRENT INTERNATIONAL PERSPECTIVES AND THE SCIENCE/POLICY INTERFACE***

This session was chaired by Tim Rollinson, Director General of the Forestry Commission.

Paul Ekins, Policy Studies Institute, UK, spoke on global understandings and possible responses in forests and climate change, noting that multiple interactions between natural systems are difficult to predict and that systemic changes will be irreversible. He outlined current international forest policy and its interaction with international climate change policy, stressed the fragility of the carbon market and underscored the need to take discussions forward in the UNFCCC workshop on positive incentives to reduce emissions from deforestation (scheduled for 2007). Underscoring that forestry is not yet ready to “play in the carbon market,” he suggested a separate fund for deforestation. Ekins noted three ways to implement forest management and climate change mitigation: conservation by preventing deforestation; sequestration through A/R; and replacing the use of fossil fuels with wood products and bioenergy where possible. On adaptation of forests to climate change, he suggested reducing vulnerability of forest systems through species selection, maintenance of diverse gene pools, and landscape management. Ekins stressed that adaptation strategies must take into account socioeconomic and cultural elements. He said that illegal logging is driven by socioeconomic issues, and suggested efforts to maximize forest benefits of all kinds. Ekins underscored the need for further research, particularly to reduce uncertainty in forest projects.

Luiz Gylvan Meira Filho, Institute for Advanced Studies, University of São Paulo, Brazil, addressed the interface between forest science and policy between the Intergovernmental Panel on Climate Change (IPCC) and the UNFCCC negotiations. He underscored several policy aspects, including measurement problems in carbon accounting that permit parties to include natural biosphere sinks as GHG emissions reductions. He recounted the Kyoto Protocol’s negotiations carried out without full understanding of the terrestrial carbon cycle, and said that the breakdown of negotiations in 2000 stemmed from disagreements on LULUCF accounting. Meira Filho said that the

consequences of these problems include: uncertainty about the role of deforestation; miscalculation of cost estimates of emission reductions; and questions of sovereignty in international treaties affecting deforestation.

Allen Solomon, National Program Leader for Global Change Research, US Department of Agriculture Forest Service, spoke on “Forest responses to global change in North America: interacting forces define a research agenda,” noting the interlinked effects of climate change on forests, biodiversity, wildfires, air pollution, forest management and human activities. Describing the cases of Canada and the US, Solomon underscored the impact of human activities on forests, such as uncontrolled use of recreational vehicles, residential development, and increased human-wildlife interactions. He suggested a forest resilience research agenda to address how much to decrease forest density in managed forests and how to enhance biodiversity.

The ensuring discussion focused on carbon accounting, including carbon markets and credits. Some participants questioned whether the definitions and measurements of carbon credits are credible enough for markets, while others stated that these issues had been addressed by the IPCC and the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA), although not all have been resolved.

### ***SESSION FOUR: FORESTRY OPTIONS FOR CONTRIBUTING TO CLIMATE CHANGE MITIGATION***

This session was chaired by Werner Kurz, Natural Resources Canada.

Gert-Jan Nabuurs, Alterra, the Netherlands, presented on integrated forest management in Europe and its role in the carbon cycle, outlining the current state of European forests. He identified trends in forest management, explained inventory-based carbon cycle assessments and described the current and future role of management. Nabuurs said that overall European demand for wood continues to rise. Nabuurs noted the availability of many large-scale assessments on carbon sinks in European forests and biosphere, each with different estimates. He pointed out the lack of integrated studies that combine management of climate change and carbon issues for multiple land uses in an econometric way, and that climate change impacts in Europe are largely unknown. He concluded that: European forests are clearly in a state of vegetation rebound; European sinks may continue for a few decades; and their saturation point is unknown.

Ralph Sims, Centre for Energy Research, Massey University, New Zealand, spoke about energy and woodfuel, and discussed the comparative advantages of bioenergy versus fossil fuels. He noted that biomass energy could reduce carbon loading and could be combined with carbon capture. He said that an International Energy Agency work programme will develop guidelines for bioresource production and bioenergy projects, but suggested that these projects will be difficult to plan and carry out, so the potential for biomass energy may not be easy to realize. Sims described the costs of various sources of biofuels, including sugar cane, corn, animal fats and vegetable oils, but underscored that all tend to be higher than petroleum at current prices. He said these factors should be incorporated into cost accounting.

Gregg Marland, Oak Ridge National Laboratory, US, presented on product substitution and wood products, and discussed the stocks and flows of products, including the life cycle and energy

intensity of products made of metals versus those made of wood. He concluded that substitution of other products for wood may be more energy intensive, and that wood products can store carbon over their lifetimes. He noted that the accounting of wood consumption presents problems in that the export of timber does not necessarily mean carbon release because they continue to store carbon, and their import may mean less use of energy than alternative products such as those made of cement or metal, which are not recognized in current carbon estimates.

Participants discussed, *inter alia*: IPCC methodology for countries to include wood products in their national GHG inventories; initiatives in New Zealand to regenerate forests in cleared land and to sell credits to companies interested in off-setting their GHG emissions; assumptions for estimating deforestation in Europe; energy ratio and the carbon balance of producing bioethanol; and wood producers' responsibilities in Europe.

#### **SESSION FIVE: IMPACTS OF CLIMATE CHANGE ON FORESTS, WOODLANDS AND ASSOCIATED SOILS: OPTIONS FOR ADAPTATION AND THE RISK TO MITIGATION MEASURES**

This session was chaired by Paul Jarvis, University of Edinburgh, UK.

David Karnosky, School of Forest Resources and Environmental Science, Michigan Technical University, US, discussed the direct effects of elevated levels carbon dioxide on forest tree productivity. He pointed out that forest productivity is a combination of carbon pathways for storage, growth, metabolism and export. Using methodologies that measure light absorption, leaf duration, photosynthesis and reduction of water stress, Karnosky said his team found that elevated carbon dioxide increases all these elements, while elevated ozone decreases all of them. He said that further research needs to examine the productivity implications of tree age, warming, drought, pests, breeding, selection, diversity, and tropical forestry.

Markus Reichstein, Max-Planck Institute for Biogeochemistry, presented on the impacts of climate change on forest soil carbon, and highlighted that forest soils contain a large amount of carbon and need to be protected. He noted climate change effects on forest soils, such as impacts on temperature, precipitation, decomposition of organic matter, vegetation and natural disturbances. Outlining models that examine the trade-offs between temperature and carbon input effects, Reichstein underscored that the models tend to project an overall negative direct effect of climate change on forest carbon stocks, and a mixed total effect of climate change on the ecosystem. Noting that carbon stocks are specific to each region and depend on varying timescales, he highlighted the existence of large variations in climate and global ecosystem models.

Denis Loustau, French National Institute for Agricultural Research, spoke about an approach to model climate change impacts on extensively managed forests. He described indicators and drivers of impacts on forests: climate scenarios, including changes in temperature and rainfall; biodiversity, including species ranges, richness and migration; pathogens and insects, including leaf rust and moths; forest growth of conifers and broad leaf species; biogeochemical cycles; and fires. Loustau stated that

managing forests in an uncertain environment requires monitoring climate change effects, managing migration and transport, using multiple criteria for tree species regeneration, specializing forest functions geographically, and managing sites for other impacts on forest resources.

Gert-Jan Nabuurs presented on the Advanced Terrestrial Ecosystem Analysis and Modelling (ATEAM) project, which assesses the effects of changes in climate, land use and atmospheric carbon dioxide concentration on tree growth, wood supply and carbon sequestration in European forests. He summarized results of a variety of scenarios for carbon stocks in trees, tree carbon per hectare, tree carbon total, and tree carbon stock changes. He highlighted predictions of increased forest growth due to climate change throughout Europe, especially in northern Europe, but noted that implementation of climate change effects on tree growth involves many uncertainties. He said wood demand and forest management are key drivers in forest resource development, and that enhanced tree growth could lead to a faster increase in the proportion of mature and unproductive forests.

Discussion focused on modeling and measurement issues. Some participants highlighted the role of ozone as a problem for carbon absorption rates, as well as other issues involving tree age, biodiversity, nitrogen feedbacks and nutrients. Many participants noted that models can generate a wide range of scenarios, but probabilities should be assigned to each to make them relevant to policy making.

#### **SESSION SIX: NATIONAL AND INTERNATIONAL FRAMEWORKS: CURRENT AND FUTURE POLICY**

This session was chaired by Ilpo Tikkanen, European Forest Institute, Finland.

Peter Holmgren, FAO, discussed national forest monitoring systems, and explained that such systems include strategic decision making, and systematic and repeated observation of countries' forests. He explained that the reliability of system approaches for data collection differ, and ranked national forest inventories as the most reliable approach, followed by forest management plans, remote sensing (maps), independent studies, case studies and models, and expert estimates. Holmgren underscored the importance of the FAO "Global Forest Resource Assessment 2005: Progress towards Sustainable Forest Management," which uses numbers reported by almost all countries, from which only five countries have made subsequent national inventories statistically comparable over time.

Victor Teplyakov, IUCN, presented on conservation of biodiversity in Russian forests, and said that the biodiversity of forests is threatened by: logging, agriculture, settlements, grazing, burning, invasive species and forest management practices such as tourism and mining. Stressing that international agreements have addressed some of these threats, Teplyakov noted that Russian implementation of the agreements has been hindered by: high rate of corruption; illegal logging and timber trade; low innovation and investment activities; and poverty in forest regions. He said that cooperation with the EU has supported development of plantations to encourage entrepreneurial activity in forest management.



Sergio Jauregui, UNEP, spoke about international forest policy and differentiated options for climate change forest policy in developing countries. He said negotiations are obscured by ideological factors such as sovereignty, development needs and poverty reduction. He outlined the facts that lead to the failure of UN negotiations to establish a forest regime and the creation of UNFF. Jauregui said UNFF is not equipped with strong tools for international policy enforcement, its recommendations do not commit parties to take action and it has no mandate for decision making. Jauregui stressed various options for climate change forest policy in developing countries under the UNFCCC, including: a fund for the promotion of activities for reduction of emissions by developing countries; inclusion of emissions reduction through the CDM as a project-based activity and as a programmatic activity; a legally binding agreement as a new annex to the Kyoto Protocol; and a voluntary binding market mechanism. He assessed the advantages and disadvantages of such options and concluded that the best approach would include multiple instruments and options, with high variability of marginal benefits for different countries.

Ghazal Baiozamani, UNFF, presented on deforestation and forest degradation drivers and policy implications for improving welfare and reducing carbon emissions, and said that there have been recent advances in the form of a proposal by Papua New Guinea on deforestation under the UNFCCC umbrella, and the four global objectives adopted by UNFF. She recounted the history of UNFCCC and UNFF, and argued that the UNFF has gained status and strengthened its mandate. Baiozamani discussed the drivers of deforestation, including: population densities and changes; market access; soil quality; lack of secure tenure; and changes in land use such as large-scale agriculture. Emphasizing that the UNFF seeks to address these drivers, she highlighted the possibility of a non-legally binding instrument for SFM, to be completed in 2007, and a programme of work for 2008-2015.

Discussion centered on the role of UN institutions, including UNEP and UNFF in ensuring SFM. Some participants noted that SFM has conceptual problems, and that the UN agencies may have overlapping mandates, but the issue has attained a prominent status in international fora.

### **SESSION SEVEN: POLICY DEVELOPMENT**

This session was organized into four parallel workshops.

The “Risks and uncertainties” workshop was chaired by Roger Swift, University of Queensland, Australia, with Wilma Harper, Forestry Commission, acting as rapporteur. The workshop considered risks and uncertainties from climate change affecting forests ecosystems and suggested some responses to these risks.

The workshop on “Governance and stakeholders” was chaired by Mike Dudley, Forestry Commission, and the rapporteur was Marcus Sangster, Forestry Commission. The participants considered sustainability issues from the standpoint of stakeholders, such as civil society, and governance at the international and national levels. The workshop discussed sovereignty issues in international negotiations involving mandatory provisions for forest management.

The workshop on “Forest sector responses” was chaired by Jean-Michel Carnus, Forest Research Site Aquitaine, France, and the rapporteur was Mark Broadmeadow, Forest Research. Participants considered the loss of forest resources, the

vulnerability of soils and agricultural practices that contribute to climate change. They also addressed issues related to managed forests for maximizing the contribution of woodlands to climate change mitigation and optimizing natural resource protection, and adaptation of forests to climate change.

The workshop on “Commercial and project-based responses, and underpinning research” was chaired by Werner Kurz and the rapporteur was Paul Hanson. Participants considered how commercial enterprises might benefit from addressing global climate change, achieving energy security and attaining sustainable use of forest resources, and discussed the gaps in knowledge that need to be addressed by new research.

### **SESSION EIGHT: IMPLICATIONS FOR FUTURE FORESTRY AND RELATED ENVIRONMENT AND DEVELOPMENT POLICY**

Justin Mundy, UK Foreign and Commonwealth Office, chaired this session. He highlighted the importance of addressing both environment and development issues when tackling climate change, and integrating climate change with forestry, which he said will become a major instrument for international economic and political work to combat climate change.

The rapporteurs from each of the four workshops reported to the Conference on the results of their assigned discussions. Wilma Harper summarized the workshop on “Risks and uncertainties,” and underscored that forestry has a long-term perspective and examines a variety of issues such as biotic, physical and human impacts. She listed as major risks deforestation, fires, melting permafrost, drought, pests, diseases and increased stress on trees. Effective responses, she said, will include: research, conservation, scaling up from experiments, translation of models into action, developing effective alternatives, and alleviating poverty. She argued monitoring is required to concentrate on “hot spots” and monitor GHG fluxes, using remote sensing and improving the interface between forestry and policy.

Marcus Sangster summarized the workshop on “Governance and stakeholders” with differentiation at the international, national and civil society levels. He pointed out that many international agreements have been negotiated separately, resulting in differences in language, lack of coordination, and treatment of development issues from different perspectives. He suggested that sustainable forest management (SFM) may be pushed aside in both international negotiations and domestic policies, where “carbon farming” rather than SFM will be emphasized as a response to climate change. He said that there are sovereignty issues in negotiations, noting the inadequacy of having the international community telling countries how to manage their land; and that deforestation is often a socio-political issue for national governments.

Mark Broadmeadow said the workshop on “Forest sector responses” discussed: the need to make decisions based on incomplete information; that SFM as part of the overall sustainability policy can provide adaptation measures to climate change; silvicultural systems and landscapes – rather than species – should be the overriding drivers at the management level; the importance of managing forests for sustainable growth; and that carbon should not be seen as the main purpose of SFM but as a co-benefit. He underscored that currently there is no strategic response from the forestry sector to climate change, noting that





responses could focus on optimizing mitigation, adaptation and environmental services. Broadmeadow highlighted that SFM needs to be set in the context of a wider sustainable agenda and that ecosystem or environmental services should be considered in developing adaptation and mitigation strategies.

Describing the results of the workshop on “Commercial projects and project-based responses and underpinning research,” Paul Hanson stressed that commercial strategies must achieve a real emission reduction or off-set. On mitigation of deforestation and forest degradation, he underscored the need to: provide a method to value approaches; define desirable outcomes; seek added value for carbon benefits, such as biodiversity and enhanced water supplies; define appropriate baselines; conduct further research on methods of evaluation of carbon stocks; and provide the specific atmospheric GHG concentration that would lead to unacceptable forest impacts.

Discussion on the workshops’ outcomes focused on integration of approaches to deforestation and climate change. Participants noted that the IPCC has identified methods for mitigation and monitoring that can be applied to forestry, and the mission of forestry has been “kick-started” by political and social issues involving stakeholders such as forest-dependent communities. Some participants discussed commercial issues, including investments in forestry, which may not always be sensitive to climate change issues.

#### **CLOSING REMARKS**

Tim Rollinson underscored that forests are vital carbon sinks and noted the limited forestry measures under the UNFCCC and Kyoto Protocol. He highlighted some recommendations that could be implemented for addressing forestry and climate change, including the need to: enhance the harmonization of UN processes, including synergies among the UNFCCC, the Convention on Biological Diversity and UNFF, and promote integrated land-use and natural resource management programmes. Recalling that measures needed to promote SFM are well known by the forestry sector, Rollinson urged participants to be confident and implement them.

He said that existing mechanisms, such as monitoring systems, national forest programmes, criteria and indicators, and forest certification are “waiting” to be further used for promoting benefits to climate change mitigation, livelihoods, biodiversity and soil and water protection. Rollinson encouraged participants to consider the mechanisms that each person could implement if more financial resources were available for the forestry sector. Citing the Stern Report, he concluded that prompt action on climate change is needed and the time has come for changing direction and ensuring the environmental sustainability for future generations.

Thanking Wilton Park, OECD, the Forestry Commission’s staff and participants for their contributions, Rollinson closed the meeting at 10:35 am.

#### **UPCOMING MEETINGS**

**UNFF AD HOC EXPERT GROUP ON A NON-LEGALLY BINDING INSTRUMENT:** The UN Forum on Forests *Ad Hoc* Expert Group will meet from 11-15 December 2006, at UN headquarters in New York. The Expert Group is expected to consider the content of a Non-Legally Binding Instrument on all

types of forests prior to the seventh session of UNFF. For more information, contact: UNFF Secretariat; tel: +1-212-963-3160; fax: +1-917-367-3186; e-mail: [unff@un.org](mailto:unff@un.org); internet: <http://www.un.org/esa/forests/adhoc-nlbi.html>

#### **NATIONAL GREENHOUSE GAS INVENTORIES**

**PROGRAMME (NGGIP) MEETINGS:** An Expert Meeting on Software for IPCC 2006 Guidelines, sponsored by the IPCC, will be held in Doha, Qatar, from 16-18 January 2007, followed by a Scoping Meeting for a future workplan for the Task Group on National Greenhouse Gas Inventories in Geneva, Switzerland, from 22-24 January 2007. For more information, contact: IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-730-8025; e-mail: [IPCC-Sec@wmo.int](mailto:IPCC-Sec@wmo.int); internet: <http://www.ipcc.ch>

#### **WILTON PARK CONFERENCE ON ENSURING**

**EUROPE’S FUTURE ENERGY SECURITY:** The Wilton Park Conference on Ensuring Europe’s Future Energy Security will meet from 22-25 January 2007, at Wilton Park Conference Centre, in Steyning, West Sussex, UK. The Conference is expected to consider questions on the security of Europe’s energy supplies in the context of oil price volatility, uncertain gas supplies, increasing developing world demand, nuclear power, and the Kyoto process, and how different countries are developing energy independency. For more information, contact: Wilton Park Conference Centre; tel: +44-1903-817-772; fax: +44-1903-815-020; e-mail: [lorraine.jones@wiltonpark.org.uk](mailto:lorraine.jones@wiltonpark.org.uk); internet: <http://www.wiltonpark.org.uk>

**CHARTING THE WAY FORWARD 2015:** The Country-Led Initiative in Support of the Multi-Year Programme of Work (MYPOW) of the UNFF will convene from 13-16 February 2007, in Bali, Indonesia. This meeting is intended to provide an opportunity to explore, elaborate and develop a broader understanding of the possible concepts and elements to be included in the new MYPOW of the UNFF. For more information, contact: Bambang Murdiono, Director of Bureau of International Cooperation, Ministry of Forestry; tel: +62-21-570-1114; fax: +62-21-572-0210; e-mail: [biroklndephut@yahoo.com](mailto:biroklndephut@yahoo.com) or Tri Tharyat, Permanent Mission of Indonesia to the UN; tel: +1-212-972-8333; fax: +1-212-972-9780; e-mail: [tri\\_tharyat@yahoo.com](mailto:tri_tharyat@yahoo.com); internet: [http://www.un.org/esa/forests/pdf/cli/cli\\_bali-mypow130207.pdf](http://www.un.org/esa/forests/pdf/cli/cli_bali-mypow130207.pdf) and <http://www.dephut.go.id/news.php?id=487>

**POLICY INTERFACE IN PRACTICE:** The International Workshop on National Forest Programmes – A Tool for Strengthening Science, will be held from 20-21 February 2007, in Zagreb, Croatia. Organized by the European Forest Institute, FAO and the International Union of Forest Research Organizations, this workshop aims to improve the national science-policy interface in support of the Pan-European process. For more information, contact: Ilpo Tikkanen or Brita Pajari, European Forest Institute; fax: +358-10-773-4377; e-mail: [Ilpo.Tikkanen@efi.int](mailto:Ilpo.Tikkanen@efi.int) or [brita.pajari@efi.int](mailto:brita.pajari@efi.int); internet: <http://www.efi.int/events/extra/2006/foperdecember2006>

#### **CSD INTERGOVERNMENTAL PREPARATORY**

**MEETING:** The fifteenth session of the Commission on Sustainable Development will be preceded by an Intergovernmental Preparatory Meeting, which will take place from 26 February to 2 March 2007, at UN headquarters in New York. This is the second year of the implementation cycle during which the Commission will continue its focus on the



following areas: energy for sustainable development, industrial development, air pollution/atmosphere and climate change. For more information, contact: UN Division for Sustainable Development; tel: +1-212-963-8102; fax: +1-212-963-4260; e-mail: dsd@un.org; internet: [http://www.un.org/esa/sustdev/csd/csd15/csd15\\_ipm.htm](http://www.un.org/esa/sustdev/csd/csd15/csd15_ipm.htm)

#### SECOND INTERNATIONAL AGARWOOD

**CONFERENCE:** This conference, organized by the Rainforest Project Foundation, will be held from 4-11 March 2007, in Bangkok, Thailand. It will follow up on the experience and the feedback of the First International Agarwood Conference, held in Vietnam in November 2003. For more information, contact: Rainforest Project Foundation; tel: +31-20-624-8508; fax: +31-20-624-0588; e-mail: trp@euronet.nl; internet: <http://www.therainforestproject.net/>

**EIGHTEENTH SESSION OF THE FAO COMMITTEE ON FORESTRY (COFO):** The 18th biennial session of COFO will convene at FAO headquarters in Rome, Italy, from 12-16 March 2007. COFO-18 will bring together heads of forest services and other senior government officials to identify emerging policy and technical issues and advise FAO and others on appropriate action. For more information, contact: Douglas Kneeland, FAO Forestry Department; tel: +39-06-5705-3925; fax: +39-06-5705-5137; e-mail: douglas.kneeland@fao.org; internet: <http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=6868&sitetreeId=35913&langId=1&geoid=0>

**CARBON MARKET INSIGHTS 2007:** Point Carbon's annual event on the carbon market is taking place in Copenhagen, Denmark, from 13-15 March 2007. This event will reflect on, among other major issues, the opening up of the EU Emissions Trading Scheme to the global carbon markets. For more information, contact: Point Carbon; tel: +47-2240-5340; fax: +47-2240-5341; e-mail: conference@pointcarbon.com; internet: <http://www.pointcarbon.com/Events/Carbon%20Market%20Insights/category401.html>

**SEVENTH SESSION OF THE UNITED NATIONS FORUM ON FORESTS:** UNFF-7 will be held from 16-27 April 2007, at UN headquarters in New York. For more information, contact: UNFF Secretariat; tel: +1-212-963-3160; fax: +1-917-367-3186; e-mail: unff@un.org; internet: <http://www.un.org/esa/forests>

**IPCC MEETINGS:** The 26th meeting of the Intergovernmental Panel on Climate Change (IPCC) will take place in Bangkok, Thailand, on 4 May 2007, immediately following the 9th session of Working Group III, to be held from 30 April to 3 May 2007. Prior to this, the tenth session of Working Group I will be held in France from 29 January to 1 February 2007, and the eighth session of Working Group II will be held in Brussels, Belgium, from 2-5 April 2007. For more information, contact: Rudie Bourgeois, IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-730-8025; e-mail: IPCC-Sec@wmo.int; internet: <http://www.ipcc.ch/>

**TWENTY-SIXTH SESSIONS OF THE UNFCCC SUBSIDIARY BODIES AND KYOTO PROTOCOL AD HOC WORKING GROUP:** The 26th sessions of the subsidiary bodies to the UNFCCC will take place in Bonn, Germany, from 7-18 May 2007, alongside the third session of the Kyoto Protocol's *Ad Hoc* Working Group and various workshops and other events. For

more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: <http://www.unfccc.int>

**WORLD TRADE FAIR FOR FORESTRY AND WOOD INDUSTRIES:** The LIGNA+ Hannover 2007: World Trade Fair for the Forestry and Wood Industries will take place from 14-18 May 2007, in Hannover, Germany. This exhibition provides a marketplace for wood and timber processing innovations, particularly for medium and small industries. For more information, contact: Anja Brokjans, tel: +49-511-89-31602; fax: +49-511-89-32631; e-mail: anja.brokjans@messe.de; internet: <http://www.ligna.de>

**EXPERT MEETING ON REGIONAL IMPACTS, ADAPTATION, VULNERABILITY, AND MITIGATION:** Sponsored by the IPCC's Task Group on data and scenario support for Impact and Climate Analysis (TGICA), the Global Change System for Analysis, Research and Training (START) and the Pacific Centre for Environment and Sustainable Development at the University of South Pacific (PACE/USP) in Nadi, Fiji, from 20-22 June 2007. The meeting will explore innovative research approaches for addressing the multi-scale and multi-disciplinary challenges associated with climate change impacts, adaptation, vulnerability and mitigation. For more information, contact: IPCC Secretariat tel: +41-22-730-8208; fax: +41-22-730-8025; e-mail: ipcc-wg1@al.no.gov; internet: <http://ipcc-wg1.ucar.edu/meeting/TGICA-Regional/>

**THIRTEENTH CONFERENCE OF THE PARTIES TO THE UNFCCC AND THIRD MEETING OF THE PARTIES TO THE KYOTO PROTOCOL:** UNFCCC COP 13 and Kyoto Protocol COP/MOP 3 are expected to take place from 3-14 December 2007, in Indonesia. For more information, contact the UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: <http://www.unfccc.int>

For more upcoming meetings, please visit: <http://www.iisd.ca/upcoming/linkagesmeetings.asp?id=5>

#### ACRONYMS

A/R	Afforestation and Reforestation
CDM	Clean Development Mechanism (of the Kyoto Protocol)
FAO	UN Food and Agriculture Organization
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
IUCN	The World Conservation Union
LULUCF	Land use, land-use change and forestry
OECD	Organization for Economic Cooperation and Development
SFM	Sustainable Forestry Management
UNEP	UN Environment Programme
UNFCCC	UN Framework Convention on Climate Change
UNFF	UN Forum on Forests