

## SUMMARY OF THE UNFCCC WORKSHOP ON METHODOLOGICAL ISSUES RELATING TO REDUCING EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION IN DEVELOPING COUNTRIES: 25-27 JUNE 2008

The UN Framework Convention on Climate Change (UNFCCC) Workshop on Methodological Issues Relating to Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD) was held from 25–27 June 2008 at United Nations University in Tokyo, Japan.

The workshop is part of a programme of work undertaken by the Subsidiary Body for Scientific and Technological Advice (SBSTA) in 2008 on methodological issues related to a range of policy approaches and positive incentives for REDD. Approximately 150 participants were in attendance, representing governments, UN agencies and constituted bodies, academia, non-governmental organizations and experts.

The workshop featured presentations and discussions on the development of methodologies specific to REDD (establishing reference emission levels, scale of implementation, implications and guidance), issues and challenges related to estimating, monitoring and reporting greenhouse gas emissions from deforestation and forest degradation, and options for assessing the effectiveness of actions and criteria. Participants also discussed needs and implications related to linking methodologies and policy approaches. A field trip, organized by the Japanese Forestry Agency, took participants to the Meiji Jingu shrine and its surrounding forest in central Tokyo on the last afternoon.

The draft summary of views expressed and issues discussed during the workshop regarding outstanding methodological issues related to REDD, presented on Friday 27 by Helen Plume, Chair of SBSTA will be included in her report to the *Ad Hoc* Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA) at its third session to be held in Accra, Ghana, in August 2008. Outcomes of the work on methodological issues, including any recommendations on possible methodological approaches, will be reported by SBSTA

29 to the UNFCCC Conference of the Parties (COP) at its fourteenth session, to be held in Poznan, Poland, in December 2008. SBSTA 29 is also expected to consider ways to move the process forward, including through possibly holding another workshop, expert meeting and/or informal consultations before SBSTA 30.

## A BRIEF HISTORY OF FORESTS AND CLIMATE CHANGE

In its Fourth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) calculates that about 20% of anthropogenic CO<sub>2</sub> emissions during the 1990s resulted from land use change, primarily deforestation. At the same time, 25% of total emissions is estimated to have been reabsorbed by terrestrial ecosystems through replacement vegetation growth on cleared land, land management practices and the fertilizing

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effects of elevated carbon dioxide and nitrogen deposition. Forests are therefore an integral part of the global carbon cycle.

Depending on the age of the forest, the management regime, and other biotic and abiotic disturbances (insects, pests, forest fires), forests can act as reservoirs, sinks (removing greenhouse gases from the atmosphere) or sources of greenhouse gases. Forests also provide a number of vital services, notably as repositories of biodiversity, regulators of the hydrological cycle, and as home to many people. Reducing deforestation and land degradation and improving forest cover are notable for being both mitigation and adaptation strategies.

However, including forest-related activities in a carbon accounting system is also notoriously complex for various reasons, including the non-permanent nature of carbon uptake by trees, the temporal variability of the carbon cycle, and the potential displacement of emissions as deforestation moves elsewhere. There are also critical social and environmental considerations to be taken into account, such as biodiversity and the existence of forest-dependent indigenous people and local communities.

**FORESTS UNDER THE UNFCCC AND THE KYOTO PROTOCOL:** Forests are covered under the UNFCCC as both sources of emissions and sinks. In defining the basic principles of the Convention, Article 3 states that policies and measures to combat climate change should “be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases ... and comprise all economic sectors.” Accordingly, Article 4.1 calls on all parties to develop and update inventories of greenhouse gas emissions and removals; formulate programmes and make efforts to address emissions by sources and removals by sinks; promote technologies that lead to lower greenhouse gas emissions in the forestry sector; promote sustainable management of sinks and reservoirs; and prepare to adapt to the impacts of climate change and develop appropriate plans for areas that might be affected by flooding, drought, or desertification.

Although under the UNFCCC all countries are expected to include their emissions and removals from land use change and forestry in their national inventories, only industrialized countries with binding commitments under the Kyoto Protocol are obliged to report on emissions and removals from certain land use, land use change and forestry (LULUCF) activities as part of their reduction targets.

In addition, the Kyoto Protocol’s Clean Development Mechanism (CDM) allows afforestation and reforestation project activities undertaken in developing countries to count towards emission reduction targets by Annex I parties. These project activities have to address a number of issues such as non-permanence, uncertainty, the risk of leakage and others. Moreover, there is a cap on the number of credits that an Annex I party can obtain through this type of projects. As with all other CDM activities, projects can be either large- or small-scale, the latter being limited to afforestation and reforestation project activities that are expected to result in net removals of less than 8 kilotonnes of carbon dioxide per year. These small-scale project activities should directly benefit low-income communities and individuals.

**REDD:** At COP 11 in Montreal in 2005, forests were taken up under the Convention at the request of Papua New Guinea,

Costa Rica and eight other parties, under a new agenda item on “Reducing emissions from deforestation in developing countries: approaches to stimulate action.” These ongoing discussions focus on existing and potential policy approaches and positive incentives for REDD, as well as the technical and methodological requirements related to their implementation. These two aspects and the possible links between them were the subject of a first workshop held at the end of August 2006 in Rome, Italy. Some of the issues addressed included: the role of forests (particularly tropical forests) in the global carbon cycle; definitional issues; data availability and quality; rates and drivers of deforestation; estimation of changes in carbon stocks and forest cover and related uncertainties; bilateral and multilateral cooperation; capacity building; and financial mechanisms and other alternatives.

This range of topics continued to be addressed at a second workshop, held in early March 2007 in Cairns, Australia. The discussions then focused on: ongoing and potential policy approaches and positive incentives and the technical and methodological requirements related to their implementation; assessment of results and their reliability; and improving the understanding of REDD. Parties also considered relevant provisions of other conventions (the Convention on Biological Diversity, the UN Convention on Combating Desertification, and the Ramsar Convention) and the work of multilateral organizations (the UN Forum on Forests, the International Tropical Timber Organization and the World Trade Organization). Updated proposals on approaches for reducing emissions from deforestation were presented at the Cairns workshop, including the establishment of a financial mechanism to provide positive financial incentives for developing countries that voluntarily reduce their emissions from deforestation.

Subsequent work at SBSTA 26 and 27 focused on drafting a COP decision, which was eventually adopted in Bali as Decision 2/CP.13, further to the adoption of a decision on long-term cooperative action on climate change under the Convention (also known as Bali Action Plan), which included reference to REDD. In Decision 2/CP.13, COP requested the SBSTA to undertake a programme of work on outstanding methodological issues related to a range of policy approaches and positive incentives for REDD.

The main methodological issues in need of further consideration were identified in an Annex to the SBSTA draft conclusions on REDD at its latest session held in early June 2008 (FCCC/SBSTA/2008/L.12). They include: means for estimating and monitoring changes in forest cover, carbon stocks and emissions; means to establish reference emission levels; means to identify and address displacement of emissions; implications of national and subnational approaches; capacity building; criteria for evaluating effectiveness of action; and cross-cutting issues (such as non-permanence, comparability and transparency, implications of different definitions, means to deal with uncertainties in estimates, and implications of methodological approaches for indigenous peoples and local communities).

## WORKSHOP REPORT

Helen Plume, Chair of SBSTA, opened the meeting. Masatoshi Wakabayashi, Minister of Agriculture, Forestry and Fisheries of Japan, thanked everyone for their participation. Highlighting the urgency of addressing climate change given its severe direct impacts on human life, he referred to REDD as a key challenge. He noted Japan's support for REDD in developing countries and for sustainable forest management (SFM), including through the Cool Earth Partnership, and underscored the importance of the workshop's discussions in order to raise awareness on the issue before the G8 Summit in July 2008.

Kyoji Komachi, Ambassador for Global Environmental Affairs, Japanese Ministry of Foreign Affairs, noted that two-thirds of Japan is covered by forest. He referenced Decision 2/CP.13 and highlighted the issues of estimating and monitoring forest cover and carbon stocks, reference levels and capacity building, which are all linked to expected global emissions reductions.

Yoshitsugu Minagawa, Forestry Agency of Japan, noted that REDD is difficult and complex but is also an innovative mechanism with the potential to curb global deforestation, given that global efforts on deforestation have not yet succeeded. He also noted that various actions related to REDD have already taken place at the subnational, national, and international levels. He underlined Japan's interest in: continuation of work to develop an international forest network and technical cooperation using its new satellite technology; information-sharing and enhanced partnership among countries; and the establishment of an effective and fair REDD mechanism.

In introductory remarks, Chair Plume recalled Decision 2/CP.13 and the need to address outstanding methodological issues as part of the SBSTA programme of work. She expressed gratitude to Japan for the generous support provided by its Forestry Agency and to other parties who had helped to ensure wide participation by developing countries.

Roberto Acosta, UNFCCC Secretariat, noted the building blocks in the Bali Action Plan, including action on REDD, and stressed the workshop's role in carrying out the methodological work within this mandate. He also noted the AWG-LCA ongoing work on policy approaches, saying that the two parallel processes will contribute to discussions at COP 14 and conclusions at COP 15.

The following summarizes presentations and discussions held during the workshop's four sessions, as well as the identification of needs for additional research and technical work, and the Chair's final reflections on issues discussed during the meeting. The presentations can be found at: [http://unfccc.int/methods\\_and\\_science/lulucf/items/4289.php](http://unfccc.int/methods_and_science/lulucf/items/4289.php)

### SESSION I: METHODOLOGIES AND TOOLS

María José Sanz, UNFCCC Secretariat, provided an overview of submissions by parties on outstanding methodological issues, noting: the view that IPCC provides an adequate basis but that there is a need for further development of methodological guidance; the preference for setting reference emission levels with a standard methodology based on historical emissions but taking into account national circumstances; the need to further develop methodologies and guidance on forest degradation; the

need to address displacement of emissions; and the importance of funding for capacity building. She noted a difference of views on whether to include only a national approach, both national and subnational approaches, or a subnational approach as a step towards a national approach. Sanz also outlined the main elements of Decision 2/CP.13, including clear mention of capacity building, demonstration activities and a programme of work on methodological issues, and highlighted that policy approaches and positive incentives would be discussed under the Bali Action Plan at the next session of the AWG-LCA to be held in Accra, Ghana, in August 2008.

Simon Eggleston, IPCC, reported on the evolution of the IPCC's guidelines related to LULUCF, noting that the basic methodological approach has not changed. He stated that the 2006 Guidelines are based on an "agriculture, forest, and other land use" (AFOLU) approach, which improves guidance such as for estimating direct and indirect emissions of CO<sub>2</sub> and N<sub>2</sub>O. It also improves default data, carbon accounting for harvested wood products, and integration of agriculture with other land uses, and eliminates double-counting while not preempting accounting choices. He noted that the effort and data requirements remain similar to those of the former LULUCF approach, using "tiers" and "key categories" for estimating inventories.

Martin Herold, Friedrich-Schiller University, Jena, Germany, presented on building national forest carbon monitoring capabilities for REDD as outlined in the Global Observation of Forest and Land Cover Dynamics (GOFD-GOLD) Sourcebook. He explained that the Sourcebook provides a synthesis of methods for producing estimates of changes in forest area and carbon stocks from deforestation and degradation in a user-friendly format, to complement IPCC guidelines. He stressed that building a national forest carbon monitoring system is a process, for which capacity building is critical. Noting that completeness and accuracy of estimates remain key challenges, he called for a conservative approach in order to avoid over-estimation, increase the credibility of estimates on REDD and allow comparability with other data. On deforestation, he recommended using historical satellite data as a starting point to develop basic data archives and capabilities and establish the drivers and factors influencing the processes. Highlighting the complexity of degradation, he suggested identifying significant degradation processes at work at the national level and then deciding a suitable observation approach. He pointed to the need for accuracy in assessments, with uncertainties quantified and reduced as far as possible, and for the building of databases and understanding.

Frédéric Archard, European Commission Joint Research Centre at Ispra, Italy, spoke on the use of remote sensing in detecting and monitoring forest area changes and changes in biomass in tropical countries. He addressed the utility of satellite imagery for forest cover monitoring and the availability of current medium resolution satellite imagery. He highlighted a new Japanese satellite with improved technologies and reported three levels of resolution for remote sensing; noting that coarse and medium-level resolution data are relatively cheap to obtain, but only high resolution imagery - not yet universally available - shows where single trees have been removed. He noted examples

of satellite imagery used by Brazil, India, Europe, Vanuatu, and the UN Food and Agriculture Organization (FAO), highlighting that: forest cover monitoring can be done with a variety of methods, while cautioning that monitoring of degraded forest is challenging and local expert information is needed.

Sandra Brown, Winrock International, presented methodological and practical examples of ground-based forest inventories in tropical countries. Noting that the existing suite of satellites cannot provide credible measures of forest carbon stocks, and that high uncertainty is associated with the IPCC guidelines Tier 1 default values, she stated that improving estimates with ground-based measurement was possible at modest costs. She recommended focusing on estimating carbon stocks for forests most likely to be deforested and degraded, and said stratification is key to reducing uncertainty and costs. On stratifying, she pointed to the need to think of the patterns of deforestation (whether it is planned or unplanned) and where it occurs (frontier-type pattern in less accessible forests or mosaic-type pattern in more accessible forests). She called for improving estimates of carbon stocks by assessing existing data quality and noted the limited consideration of the full impacts of logging in IPCC guidance.

**DISCUSSION:** On questions from the European Commission, Herold noted that the GOF-C-GOLD Sourcebook does not make assumptions about which countries can report at which tier, and noted that the FAO's quinquennial Forest Resource Assessment now reports on carbon stocks but that data from past assessments are not necessarily useful in this context.

To questions from Brazil, Eggleston clarified that: default values in the IPCC guidelines are approved by the IPCC plenary; the guidelines aim to estimate the net emissions or removals of greenhouse gases that result from changing land use; and the IPCC good practice guidance (GPG) covers only managed land because human-induced emissions are assumed to result from managed, not natural, land.

Brown said that some systems for estimating forest degradation are more complex than others noting the key is to assess the quality of data for a particular country. She also observed that logging represents a persistent loss in carbon but that opportunities exist for gaining carbon stock by improving management and noted that estimating carbon in litter and soil can be cost-effective depending on the conditions or on the loss of carbon to be incurred.

## **SESSION II: DEVELOPMENT OF METHODOLOGIES FOR REDD**

The session addressed the development of methodologies specific for REDD, including establishing reference emission levels, scale of implementation (national and subnational approaches), implications and guidance.

Gabon spoke on forests in the Congo Basin countries, saying they have the lowest rate of deforestation and degradation but that the challenge is to maintain this state of affairs given evidence of the beginning of fragmentation in the forests. Noting linkages between deforestation and degradation in the region, he cautioned that these cannot be treated separately and highlighted growing pressure on the forest as a result of the impacts of climate change and desertification. He pointed to the great increase in logging permits in the Congo Basin, but noted

that many of these permits are increasingly for SFM. Warning that the Congo Basin could "go the way of West Africa," he underscored the need to value standing forests.

Indonesia reported on a national REDD study and stakeholder consultations to address relevant issues and methodologies. He noted Indonesia's commitment to: stop illegal logging; suspend permits for palm oil plantations on peatland; address land rehabilitation; and provide incentives for local governments that maintain and rehabilitate land and forest cover. He also highlighted land use mapping exercises carried out from 1985 – 2003 with ongoing monitoring, but said neither these nor studies of area change are yet sufficient to establish REDD reference emissions levels. He also noted the existence of a forest plot network but said there is little to no data on carbon stocks. He stated that Indonesia faces challenges on data availability, including a lack of data on historical carbon stocks, and on matching existing monitoring systems to REDD requirements.

Noting the loss of almost 82% of forest land coverage since the mid-twentieth century and a present deforestation rate of 180,000 ha/yr, Paraguay elaborated on his country's attempts to address the situation, including through: a non-deforestation law; an environmental service law; and an innovative mechanism whereby those who do not conserve the required 25% of forest in their lands must compensate others who preserve more than 25%. He stressed links between REDD and greenhouse gas inventories in national communications, and said his country's experience is suitable as a subnational first step towards a national approach, for which greater capacity is needed. As constraints, he identified technical capacity and financing as well as legal aspects, given that 95% of the land is privately owned.

Papua New Guinea highlighted its experiences with REDD, noting the need for political leadership and clear objectives. One speaker reported on the country's "phase one REDD readiness approach," beginning with forests and agriculture, and its desire for "phase two early actions" in order to be ready for the post-2012 era. He said that in Papua New Guinea's experience the basic data is available, sometimes in surprising places, and can be cost-effective and IPCC-compliant. He called for policy discussions to consider national circumstances and for consistent revenue streams for developing countries. Another speaker noted difficulty in projecting the future using different data sets. He explained that Papua New Guinea is testing methodologies for reference scenarios and has found that deforestation is less of a problem methodologically than is degradation, although both can use the same data set. He confirmed their use of the indirect approach from the GOF-C-GOLD Sourcebook and a plot sampling system for the years 1990 and 2000 but said the wall-to-wall approach will be used when appropriate satellite data becomes available.

Mexico reported on national REDD preparations. He noted various sources of information, including land use and land cover maps, satellite imagery, forest inventory data which is currently forest-based but will include carbon stock data beginning in 2009, and auxiliary data. He acknowledged that estimated deforestation between 2003 and 2006 was about 350,000 ha/year, and said drivers of deforestation and degradation include illegal logging, forest fires and pests, authorized land use changes, roads, settlements and population density, and stated

that a vulnerability map had been developed to identify forests under threat. He said Mexico considers forestry and climate change as national security issues and is committed to a zero deforestation target. He highlighted government programs to reduce deforestation and degradation including payments for environmental services, sustainable forest management, sustainable community forestry, and soil conservation and restoration.

Costa Rica recounted its efforts to recover forest cover through various legal and institutional measures, including through a Payment for Environmental Services programme, a consolidated system of protected areas, a ban on land use change, reforestation programmes, enhancement of ecotourism, and national strategies to combat illegal logging. As challenges to maintaining carbon stocks he highlighted the operational costs of the protected areas system and other programmes, and the increasing land opportunity costs given demand for timber and biofuels, noting these considerations should be taken into account in any future system on REDD. He stressed monitoring as a strong pillar of any programme and said the risks of leakage are greatly reduced by a comprehensive approach. On reference levels, he supported a flexible approach according to national circumstances and said the baseline must recognize risks and pressures related to maintaining carbon stocks noting a national approach should prevail. He cautioned against striving for inordinately costly data for accuracy's sake and noted the need for international sources of funding.

Tuvalu presented on issues associated with international emissions displacement. He pointed to modeling studies on forest conservation, which suggest that under current trade conditions, estimated emissions displacement ranges from 45% to 90%, with an average of 70% for most regions. He highlighted the timber trade as a driver, along with production of other commodities such as oil palm, beef and veal, and soy. He said policy to address international emissions displacement could include an "all in" approach to allow all tropical forest countries to build capabilities for national forest inventories and the necessary policy and legal frameworks to manage their forests on a sustainable basis; tackling illegal logging and trade; and/or creating "disincentives" for importing "REDD-unfriendly" forest products, such as through "carbon deficit levies" as the opposite of carbon credits.

Japan elaborated on his country's initiatives on SFM and their applicability to REDD activities, including Japan's contributions to the World Bank's Forest Carbon Partnership Facility (FCPF), workshops on forest fires as an element of REDD, and the Japan-Asia REDD seminar for capacity building for REDD readiness. He identified three key problems: limited human, infrastructural and financial resources; the numerous causes and stakeholders involved; and difficulties in institutionalizing and scaling-up a model area into a national programme. He stressed coordination and consultation among multiple sectors and stakeholders and the need to synthesize the various benefits from forests.

**DISCUSSION:** In the ensuing discussion, Mexico responded to a question from Brazil by explaining that land use subsidies in Mexico are changing toward improving and intensifying, rather than expanding, productive systems. He pointed to the need for financial systems and international support for the forestry

sector and explained that land conversion for farming requires a permit, but in areas where the forest is already disappearing due to hurricanes it becomes easier for illegal conversions for agriculture to take place, leading to permanent deforestation.

Brazil queried Paraguay on its preference for starting with a subnational approach, with Paraguay pointing to the need for more time and practice in monitoring and demonstrative activities and for creating capacity among institutions.

Australia drew attention to how results might reflect differences in monitoring and reporting given inter-annual and spatial variability. Guyana and others supported inclusion of positive incentives for carbon storage in countries with low deforestation rates and Nepal stressed community forestry.

In response to a question on logging of tropical timber as a primary driver of emissions from deforestation, Tuvalu cited a reference linking logging and opening roads to the clearing of forests and reiterated that cutting primary forest, even if followed by replacement of forest, still causes net emissions.

On international displacement of emissions, France suggested a carbon tax based on a product's carbon footprint as the second best solution after the "all in" option. Responding to a question on his proposal for a carbon deficit levy, Tuvalu noted the irony that some countries that claim to have reached SFM themselves are causing deforestation elsewhere through imports of unsustainably managed timber. He agreed with comments by Guyana that compensation for existing forests must be addressed, but stressed that the market will not provide appropriate measures to protect those forests now because it does not cater to countries with low current deforestation rates and/or with high risks, and called for consideration of other positive incentives for those countries.

Brazil questioned the need for complex and detailed methodologies given the urgency of REDD, and drew attention to forest and carbon loss due to extreme events and other factors beyond the will of governments, emphasizing the lack of knowledge on how forests will respond to climate change. With regard to concerns expressed by Brazil and the United Kingdom about flooding the market with carbon credits, Papua New Guinea said that for small countries with a low GDP, market instruments are the only way to overcome the carbon emissions associated with deforestation, but stressed that industrialized countries must agree on much higher emission reduction targets. On permanence, he noted that if engagement is ongoing the permanence issue becomes irrelevant.

The International Tropical Timber Organization (ITTO) recalled the lack of success of previous efforts at reducing deforestation and suggested market-wide economic interventions.

### ***SESSION III: ESTIMATING, MONITORING, AND REPORTING GREENHOUSE GAS EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION***

On Thursday morning, the third Session addressed methodological and monitoring issues, challenges and further areas of work regarding the estimation, monitoring, and reporting of greenhouse gas emissions from deforestation and forest degradation.

Brazil explained her country's experience in monitoring deforestation and degradation, noting that the latter entails identifying "anomalies" in the forest cover using more coarse

resolution satellite data than that used to identify deforested areas. She explained that geo-referenced information on anomalies is sent to local government enforcement entities every two weeks, functioning as an “early warning system” in identifying areas of potential deforestation. She said problems exist, however, in the definition of forest degradation as a direct, human-induced long-term loss of a percentage of forest carbon stocks which does not qualify as deforestation, because: degradation may be due to seasonal or other natural (or climate change-related) causes rather than human-induced; it is difficult to discriminate human-induced from natural changes; and changes in the understory beneath the canopy can go unnoticed. On selective logging, she noted that it is even more difficult to estimate loss because thin forests or wetlands can be mistaken for logged forests if monitored using infrared imaging and because not all selective logging leads to deforestation. She noted two studies on selectively logged areas which tended to show that 30% of selectively logged areas that are abandoned in early stages actually regrow into forest; 30% became fully deforested, while for the remaining 40% it was impossible to predict its fate. She called for further consideration of whether selective logging activities should be assumed to lead ultimately to full clearcut or a fractional clearcut and, if the latter, how to estimate the degree of degradation that would occur in the absence of a REDD programme. She also questioned whether a business-as-usual scenario should be assumed and whether satellites currently in use can be relied upon to continue to provide consistent, reliable data throughout the duration of REDD.

Japan presented on monitoring of deforestation and degradation using remote-sensing techniques for REDD policy implementation. He noted two methods of monitoring for land cover change using remote sensing: wall-to-wall, characterized by no leakage, high cost and applicability for local policy but affected by relative lack of cloud-free data; and sampling, characterized by being cost-effective and easier to acquire with cloud-free data but for which sampling rates accuracy needs to be defined and which is less applicable for local policy. He emphasized the need for capacity building in interpreting remotely-sensed data, and stressed the importance of field survey in combination with remotely sensed data. Noting variety in forest fires depending on their type, intensity and development, he underlined the need to understand causes of degradation. On technologies, he said high-resolution satellite data can only trace canopy surface so assumptions are needed to estimate crown diameter and height, but this can be reasonably done. He said three-dimensional remote-sensing, which reflects canopy as well as ground cover, allows for reconstructing ground surface and estimating standing volume. He identified technical problems related to local and seasonal data acquisition (related to rainy seasons and cloud cover in coastal areas, for example), and topographic effects (related to the difficulty of monitoring forest in mountainous areas either by satellite or optical means). In concluding, he emphasized, *inter alia*, the need for adequate methodologies, consistency of satellite data and results, appropriate definitions, and field surveys.

India presented on estimating and monitoring methodologies for forest carbon stock in her country. She said India favors

a comprehensive REDD mechanism including conservation, increase of forest cover, SFM, and reduced deforestation, with incentives for all. On methodological issues, she supported: national level accounting; a baseline year (for example 1990, when India first adopted participatory community forestry programmes); and assessment at regular intervals (every 2 or 5 years). She said reference emission levels should be based on historical data, with starting dates chosen according to national circumstances. She noted that since 1987 forest cover assessment has been done on a biennial cycle, and includes digital interpretation of satellite data, intensive ground-truthing and accuracy assessments. She said forest cover has stabilized in the last 20 years and that model-based projections estimate an increase in carbon stocks in the country’s forest from 8.79 GtC in 2005 to 9.75 GtC in 2030, and possibly much more. She confirmed strong political will to achieve this increase, noting current important reforestation, afforestation and conservation programmes.

**DISCUSSION:** In discussion of the presentations, India, in response to a question from the European Commission, clarified that all data used in her presentation was model-based, and that soil carbon content is modeled as making a significant contribution in the post-2015 period.

To a question from Nepal on estimating forest cover in mountainous areas, India said the problem is to be able to remove shadows when interpreting data, although the capacity to do this is increasing. Japan acknowledged the difficulty in monitoring mountainous areas, particularly as data from Landsat is becoming progressively worse. He stated that Japan therefore uses photos or ground-based inventory. He noted the development of specific remote sensing methods may be necessary for different countries. In response to Malaysia on the classification of forest according to canopy density, India noted that this has been done successfully in India for years and is a technical issue.

On a question from Papua New Guinea about the feasibility of Brazil’s methods for other countries, Brazil stated that its satellite technology is being transferred freely to anyone who wants to use it, cautioning that the challenge is how to use the information obtained to change undesirable practices on the ground. She noted that this becomes a social question requiring the generation of alternative livelihoods and therefore transcends the area of law enforcement. In answer to a question from the Russian Federation, Brazil noted that estimating changes in carbon stocks does not produce information about whether these are due to degradation or to natural processes or whether carbon stocks may recover.

Canada said UNFCCC already has well-established definitions for deforestation with crown cover parameters and referred to the experience of reporting under the Protocol with regard to degradation, adding that some solutions may lie in the methodological realm while others may need policy or accounting approaches. Guyana called for clear definitions of what is meant by selective logging, for example distinguishing between selective species logging and selective logging areas.

France emphasized understanding what is happening in the forest and drew attention to contracts and laws, noting that clear land rights or forest certification for example can act as

incentives for the prevention of degradation and deforestation. Cuba drew attention to links with legal and institutional policies and programmes, saying that management plans are necessary and policies should depend on the existence of national plans, adding that “this can’t be a one-size fits all” approach.

Brazil asked India whether they had considered existing methodological approaches such as the CDM. On the latter, India recalled that only one afforestation/reforestation project activity in China had been approved to date under the CDM and noted difficulties in developing such project activities given high transaction costs.

Eggleston noted that the IPCC Guidelines provide guidance on forest degradation through the subject of carbon stocks, while the GPG provides information on comparing across countries, although neither give activity data nor other nationally-specific parameters. The United Kingdom noted that long-term reduction in carbon stocks is associated with degradation, while long-term increases are associated with SFM, and there are non-anthropogenic influences in both cases. He suggested identifying base levels and measuring differences over time in order to identify relevant trends. In answer to Brazil, he noted that as the non-anthropogenic influences would be present in both the base years and in subsequent years, they would cancel each other out. He also noted that the IPCC gives generic descriptions on the use of remote sensing, and that this topic is developing very quickly and the IPCC needs to keep an eye on developments. He noted that the GOFC-GOLD initiative serves that purpose.

On activity data, Herold pointed out that countries need flexibility to use the most appropriate method, emphasizing the key is to apply one method consistently over time. He also noted that the next generation of satellites is being developed and that the need for better satellite data under the UNFCCC is a driver for their development and deployment.

#### **SESSION IV: OPTIONS FOR ASSESSING EFFECTIVENESS OF ACTIONS AND CRITERIA**

The fourth Session addressed options for assessing effectiveness of actions and criteria, including lessons learned from ongoing work, capacity building and technical assistance.

Stephen Ogle, Colorado State University, US, presented on regional capacity building projects in Central America and Southeast Asia related to agriculture and land use inventory programmes, and elaborated on the Agriculture and Land Use Software Approach (ALU), a greenhouse gas inventory software programme. He explained that the ALU: produces tabular results and maps for LULUCF; may import activity data from remotely-sensed imagery and combine statistics from forestry and agriculture data; and can estimate national and subnational reference scenarios, estimate biomass carbon stock from deforestation and degradation, and facilitate verification, although it cannot address international displacement of emissions.

Australia reported on its AU\$200 million International Forest Carbon Initiative for REDD. She said this initiative focuses on developing a market in cooperation with Papua New Guinea and Indonesia and aims, *inter alia*, to: increase international forest carbon monitoring and accounting capacity; undertake trials to demonstrate robust and verifiable action on REDD; and support international efforts to develop and evaluate market-based

approaches to REDD. She said REDD can be part of an equitable and efficient international agreement on climate change and market mechanisms can be used to address REDD effectively.

The European Union presented on lessons learned from four demonstration activities in relation to the main outstanding methodological issues on REDD. The activities included: training of local communities in mapping boundaries and strata of community forests using GPS in Africa and Asia; monitoring deforestation in French Guiana by optical remote sensing; sustainable management of logging concessions in the Congo Basin; and a World Bank BioCarbon Fund project in Madagascar. He noted that the community-based inventories projects had resulted in good accuracy levels, when matched against remotely sensed data, and low costs. On the project on sustainable management of logging concessions, he noted numerous benefits for forest management and forest inventory, but expressed concern about the issues of biodiversity loss due to bush meat trade and income not reaching local communities. On the BioCarbon Fund project, he highlighted high start-up costs and the need for long-term partnerships with NGOs but also high “feel good value” given its positive impacts on biodiversity and community benefits. He said that although local displacement of emissions is a concern, local drivers can be addressed, for example through alternatives to slash and burn or a community development approach. In summarizing, he stressed that sustainable access to satellite data is critical and proposed it be made a global public good, and said that: forest policies are key to address displacement; capacity building is a large and long-term need; start-up costs are considerable and require diversified financing sources; and combining activities is important.

**DISCUSSION:** In the ensuing discussion, Australia responded to a question by Tuvalu, noting that the pilot project was not about creating credits but about working out methodologies that would create enough certainties for a market to be able to function. Indonesia took exception to Australia’s description of the demonstration activities, saying that these were only a small part of its master plan for the area.

#### **DISCUSSION ON LINKING METHODOLOGIES WITH POLICY APPROACHES**

Chair Plume introduced the discussion on the needs and implications of linking methodologies with policy approaches, saying that the choices made in each of these areas will affect outcomes.

The United Kingdom pointed out that the two basic approaches under discussion, for a market or a fund as advocated by Papua New Guinea and Brazil respectively, are similar methodologically, except for the question of market access. He said the main priority is to put significant global resources into this sector to save forests and spend them effectively, which requires forest inventory and use of reference scenarios. On the latter, he noted ambiguity in the terms “historical emissions” and “national circumstances” that has yet to be discussed.

The United States called for assessment of countries’ gaps and needs for producing the inventories to participate in a REDD system. She also agreed that a one size fits all approach may not be appropriate, but said all methods used must have rigor and comparability, highlighting the need for quality standards. She called for consideration of: the implications of the various

approaches; ways of dealing with leakage at many levels; and options for reference emissions levels.

Brazil asserted that the problems of leakage and permanence disappear if REDD is not used for offsetting other emissions such as under a market mechanism. Supported by Australia, she underscored the difficulty of predicting emissions based on historical trends and the resulting problem of distinguishing between business-as-usual and truly additional emissions reductions.

Australia cautioned that results from different national approaches have to be consistent in how they are derived, and that country efforts must be assessed in an equitable way. She noted significant methodological challenges in including degradation and a need to focus more on the question of permanence.

Costa Rica cautioned that policy should lead methodology, not the other way around, and said it would be fruitless to adopt high-cost methodologies that developing countries cannot afford, as occurred under the CDM. She called for avoiding perverse incentives and called for an adjustment factor that will reward countries that have done well in the past.

Tuvalu suggested a global approach on needs analysis to get everyone up to similar standards. He cautioned that some countries have been big losers in the CDM because they are not attractive to the market and expressed concern that the same phenomenon could occur with REDD, either because of market risk or because of already low rates of deforestation. He also noted that one difference between market and non-market approaches is that a non-market system that fails does not entail increased emissions as a market system would.

Saying that the world has agreed to mobilize around US\$3 billion for REDD since consensus on future action was reached in Bali, Papua New Guinea reiterated the need to address policy approaches and positive incentives. France drew attention to market failures, including the lack of willingness to pay for capacity building, and suggested that the market is not the only solution. The United Kingdom, supported by Switzerland and Australia, emphasized the need for sound methodologies in order to get the resources required. He cautioned against a binary view of market versus non-market options and called for imaginative approaches to ensure resources from either tax payers or market players become available.

Recalling that REDD is part of the UNFCCC mitigation discussions, the Russian Federation said any REDD mechanism must be cost-effective, demonstrable and verifiable. China emphasized common but differentiated responsibilities, and the need for deep and further commitments from developed countries, without which market approaches will not work. Brazil emphasized non-permanence as a concern under a market mechanism, given the possibility of large forest die-backs expected as a result of climate change.

#### **DISCUSSION PANEL WITH INTERNATIONAL ORGANIZATIONS IMPLEMENTING REDD ACTIVITIES**

On Friday, a discussion was held with invited international organizations implementing activities relating to REDD. The ITTO reported on work undertaken under the International Tropical Timber Agreement (ITTA) 1994 which relates to SFM and climate change. She noted that the ITTA 1994

encapsulates many of the principles of SFM for its member countries producing tropical timber, which together comprise 90% of the tropical timber trade and 80% of the world's tropical forests. She said the ITTO has resources to aid in implementing SFM, including for training, developing conservation reserves, improving trade transparency, and promoting a sustainable tropical timber trade through certification and criteria and indicators. She said the ITTO has REDD-relevant experience in: mangrove forest monitoring; reduced impact logging; forest restoration; criteria and indicators, forest assessment, mapping and inventory; capacity building and other work related to the CDM; and information-sharing on, *inter alia*, the status of tropical forest management, the world timber situation, and policy trends. The outputs of a recent ITTO expert meeting on tropical forests and climate change were presented by another speaker, who reported its conclusions that SFM should be considered a realistic approach for both mitigation and adaptation and that in order to reduce deforestation the value of tropical forests to landowners must be at least as great as alternative land uses. He noted ITTO's work in demonstration activities and provision of financial mechanisms to help countries scale-up activities to a wider level.

Ken Andrasko, World Bank Carbon Finance Unit, gave an overview of views expressed by countries on REDD in the context of its FCPF. He noted that: the national approach to estimation and monitoring is broadly interpreted; there is limited experience with national carbon accounting systems and little understanding of what degradation means; there is a vast body of programme experience but scaling-up remains a challenge; there is a strong desire to incorporate biodiversity and rural livelihoods co-benefits into REDD, but a marked lack of data, capacity and knowledge of how it might be methodologically done; and regional cooperation is deemed useful. He highlighted that REDD needs to be addressed both inside and outside forest lands, noted openness and interest in experimentation, building on existing methods and fast demonstration, and said that economic incentives will not work by themselves so stakeholder involvement is needed and governance issues must be addressed.

The UN Development Programme (UNDP) reported on the recently created UN REDD, a partnership of FAO, UNDP and UNEP that was launched in response to Decision 2/CP.13 request for international organizations' assistance in developing REDD programmes. He said this partnership has access to a multi-donor trust fund for work at the country level to: build REDD readiness for monitoring, assessment, accounting and verification of emissions; support risk management; give technical and scientific assistance; design pro-poor financial transfers; and facilitate dialogue. He explained that at the international level the UN REDD organizations engage in knowledge management and REDD awareness and data collection on, *inter alia*, global carbon stock mapping, biodiversity, and REDD co-benefits.

FAO presented on its programmes for monitoring deforestation and degradation at the global, regional and national levels. One speaker highlighted, *inter alia*: relatively good information on forest area but not on net changes; poor data availability on past and current deforestation rates; some information on carbon stocks but not on carbon stock changes; and lack of reliable information on emissions from deforestation.

She said most information on forest area and carbon stock in developing countries comes from independent reports and expert estimates using different methods of data collection, so comparability is low. She also commented on the Global Remote Sensing Survey, which aims to provide information on distribution of forests and trend statistics at regional, biome and global levels, and is expected to be launched this year. Another speaker from FAO presented on the National Forest Monitoring and Assessment programme, which uses an integrated land use assessment approach. He stressed the need to take other areas into consideration, including agriculture, woodland and forest, and to monitor all land for assessing carbon stocks.

#### **IDENTIFICATION OF NEEDS, RESEARCH, TECHNICAL WORK AND FURTHER ACTIONS ON METHODOLOGICAL ISSUES UNDER THE SBSTA**

The ensuing discussion addressed the identification of needs, additional research and technical work required, as well as further actions to facilitate the progress of work on methodological issues under the SBSTA. The United States cautioned that greater understanding is needed on the implications of the various options with regard to, *inter alia*, countries' eligibility and the capacities necessary for reducing deforestation. France called for further future joint presentations by UN REDD and for more deliberation on strengthening institutions that are already contributing to dissemination of REDD methodologies.

Vanuatu expressed satisfaction at the emerging level of consensus on methodologies and capacity building. He noted Vanuatu's experience in developing a national strategy but also its low level of capacity in forest monitoring, and called for capacity building on IPCC accounting and reporting methodologies. He agreed with the Tuvaluan proposal for an "all in" approach, said communities should be involved in the capacity-building process, encouraged coordinated use of existing satellites to make more historical data available for developing countries, and called for regional cooperation on remote sensing, carbon stock assessment, and capacity building. Australia noted the need to address cross-cutting issues and issues of governance.

Brazil noted its readiness to share its experience and technologies with all developing countries free of charge. The United Kingdom noted that more research is needed on understanding of historical trends for reference levels, but that application of these methodologies should now receive attention. He stated that even if implementation takes place at the national level countries still need subnational estimates and good policy design. He noted that the UN REDD organizations are able to engage in many efforts already without long, demanding negotiation processes.

France noted that the World Bank FCPF mechanism gives an example of 'moving ahead on implementation' without waiting for a complete methodology and suggested the possibility of establishing independent panels or peer review in order to progress further.

Bangladesh, highlighting common problems such as the high content of carbon in trees outside forests in countries like India, Nepal, Mexico, and his own, called for support for regional and international collaboration on methodological practices.

New Zealand supported further analysis of the implications of methodological approaches as part of broad and substantial policy discussions on REDD, noting the need to address the problem more accurately, including externalities, market failures and institutional arrangements, and to identify criteria such as efficiency, social impacts, practicality and transparency.

#### **SUMMARY OF MAIN ISSUES AND CLOSING OF THE MEETING**

In closing, Chair Plume read her draft summary of some of the views expressed, which, *inter alia*, notes general agreement that:

- cost effective systems for estimating and monitoring deforestation and changes in carbon stocks can be designed and implemented, perhaps most suitably through a combination of remote sensing assessments and ground based measurements or a selected but representative series of plots stratifying the forest types in a country;
- guidance is needed to ensure comparable estimates when remote sensing is used, along with access to data, know-how, and capacity building;
- the IPCC Guidelines and Good Practice Guidance provide methodologies that can be the basis for estimating and monitoring emissions reductions and carbon stock changes, but they need to be better understood and their applicability assessed;
- addressing forest degradation is more difficult than addressing deforestation, but knowing the causes of degradation in countries can help in estimating of associated losses of carbon;
- new remote sensing technologies that may allow the estimation of changes in biomass will take some years to become routinely available for developing countries;
- reference emission levels should be flexible, adaptive, based on reliable historical data and periodically reviewed;
- the implications of different approaches for their establishment also need consideration;
- national approaches should be used for estimating and monitoring, but subnational approaches can constitute an initial step and be scaled up progressively;
- national coordination and joint work with all relevant stakeholders could provide an enabling environment for timely and effective capacity-building efforts;
- capacity-building exercises need to be scaled up in the future and focus on needs identified by countries;
- capacity building is needed in many areas, including on data collection and archiving, development and implementation of national monitoring systems and forest carbon inventories, as well as on remote sensing and its interpretation and application to national circumstances such as complex topography and persistent cloud cover; and
- discussions on policy approaches and incentives can be initiated given the current knowledge of methodological issues, while the implications of different approaches will need to be further explored.

The summary also notes, *inter alia*, that: it was agreed that further work is needed on how to address displacement of emissions, that broad participation is one way to do this, and that actions on REDD should result in real global emissions

reductions; the view was also expressed that putting in place provisions to avoid international displacement of emissions should not lead to unrealistic requirements.

Some participants also expressed the view that as more resources become available to support developing countries, effectiveness of REDD activities must be ensured through, *inter alia*: focusing on specific needs of developing countries; avoiding duplication of efforts; taking into consideration potential co-benefits and synergies; and ensuring that the experiences gained lead to enhanced implementation of future activities.

The summary also notes that several cross-cutting issues were raised during discussion, including that:

- cost implications of more accurate methodologies should be carefully considered, as should the social implications of any REDD system particularly for indigenous people and local communities;
- the risk of diebacks including those associated with climate change, may affect the permanence of carbon stocks in the future;
- co-benefits such as protecting biodiversity and water resources should be promoted;
- choices of definitions could have implications for estimating emissions;
- a conservative approach could deal with uncertainties in estimates to ensure that there is no over-estimation of reduction in emissions;
- the contribution of natural versus anthropogenic causes in dealing with deforestation, forest degradation and carbon stock changes needs to be understood; and
- support from international organizations, in particular the UN system, will be important to advance the implementation of Decision 2/CP.13, the conclusions of SBSTA 28 and any further advance of REDD activities.

Chair Plume proposed, and participants generally agreed, to hold an expert meeting before COP 14, with limited participation, to advance understanding on remaining technical/methodological issues such as degradation.

Participants joined Chair Plume in thanking Japan for hosting the meeting. Japan expressed gratitude to the people who had made the conference possible and called on everyone to keep up the momentum in Accra and Poznan. Chair Plume drew the meeting to a close at 12:45 pm.

## UPCOMING MEETINGS

**WORKSHOP ON BIODIVERSITY AND CLIMATE CHANGE:** This workshop will take place from 29 June to 4 July 2008 in Kushiro, Japan. Co-organized by the UN Institute for Training and Research (UNITAR) and the Kushiro International Wetland Centre, in partnership with Japan-UNDP Partnership Fund and the Secretariats of the Ramsar Convention and the CBD, this workshop aims, *inter alia*, to support the sharing of scientific facts and policies on biodiversity, wetlands and climate change. For more information, contact Ms. Hiroko Nakayama, UNITAR; e-mail: [hiroko.nakayama@unitar.org](mailto:hiroko.nakayama@unitar.org); internet: <http://www.unitar.org/hiroshima/programmes/kushiro08/>

**DEVELOPING A TOOLKIT FOR FACILITATION OF SUPPORT FOR SMALL FOREST ENTERPRISES:**

This workshop will be held from 2-4 July 2008 in Edinburgh, Scotland. Sponsored by the International Institute for Environment and Development, the FAO, the World Bank Program on Forests, and Forest Connect, this workshop aims to develop a framework for a toolkit for the facilitation of support to small and medium forest enterprises. For more information, contact: Duncan Macqueen, IIED; tel: +44-131-226-6860; e-mail: [duncan.macqueen@iied.org](mailto:duncan.macqueen@iied.org); internet: <http://www.iied.org/pubs/display.php?o=G02271>

**G8 SUMMIT:** The G8 Summit will be held from 7-9 July 2008 in Hokkaido, Japan. For more information, contact: Japanese Ministry of Foreign Affairs, tel: +81-3-3580-3311; internet: <http://www.mofa.go.jp/policy/economy/summit/2008/index.html>

**INTERNATIONAL CONFERENCE ON FINANCING FOR CLIMATE CHANGE – CHALLENGES AND WAY FORWARD:** This conference will convene from 15-17 August 2008 in Dhaka, Bangladesh. Arranged by a Bangladesh-based think tank, Unnayan Onneshan, this conference will focus on financial mechanisms for supporting mitigation activities to combat climate change. For more information, contact: Nazmul Huq, Unnayan Onneshan; tel: +880-2-815-8274; fax: +880-2-815-9135; e-mail: [nazmul.huq@unnayan.org](mailto:nazmul.huq@unnayan.org); internet: <http://www.unnayan.org>

**REGIONAL WORKSHOP ON IMPROVING FOREST LAW COMPLIANCE AND GOVERNANCE IN TROPICAL WEST AFRICA:** Organized by the FAO and the ITTO, this regional workshop will take place from 15-17 July 2008 in Accra, Ghana, and will showcase possible approaches to improving forest law compliance at the country level. For more information, contact: Steve Johnson, ITTO; tel: +81-45-223-1110; fax: +81-45-223-1111; e-mail: [Johnson@itto.or.jp](mailto:Johnson@itto.or.jp); internet: <http://www.itto.or.jp/live/PageDisplayHandler?pageId=223&id=3970>

**THIRD SESSION OF THE AD HOC WORKING GROUP ON LONG-TERM COOPERATIVE ACTION UNDER THE UNFCCC AND SIXTH SESSION OF THE AWG UNDER THE KYOTO PROTOCOL:** The third meeting of the *Ad Hoc* Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA) and sixth session of the *Ad Hoc* Working Group on Further Commitments for Annex I parties under the Protocol (AWG-KP) are taking place in Accra, Ghana, from 21-27 August 2008. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); internet: <http://unfccc.int>

**INTERNATIONAL CONFERENCE ON ADAPTATION OF FORESTS AND FOREST MANAGEMENT TO A CHANGING CLIMATE WITH EMPHASIS ON FOREST HEALTH: A REVIEW OF SCIENCE, POLICIES, AND PRACTICES:** This conference will be held from 25-28 August 2008 in Umeå, Sweden. Co-hosted by the FAO, the International Union of Forest Research Organizations (IUFRO) and the Swedish University of Agricultural Sciences, the conference will focus on the current state of knowledge of ongoing changes in climatic conditions in different regions of the world, and the implications of these changes for forest health, and forest management and conservation. For more information, contact:

Alexander Buck, IUFRO; tel: +43-1-877015113; e-mail: buck@iufro.org; internet: <http://www.forestadaptation2008.net/home/en/>

**WORKSHOP ON FORESTS IN THE CHANGING ENVIRONMENT:** This workshop will be held from 3-5 September in Koli, Finland. The workshop is an integral part of the Work Programme of the Ministerial Conference on the Protection of Forests in Europe (MCPFE) and it lays a basis for a regional contribution to the eighth session of the UNFF. For more information, contact: Heikki Granholm, Counselor of Forestry; tel: +358-916052431; e-mail: heikki.granholm@mmm.fi; internet: <http://www.mcpfe.org/koli2008>

**29TH SESSION OF THE IPCC:** IPCC-29 is scheduled to take place in Geneva, Switzerland, from 1-4 September 2008. The meeting will celebrate the IPCC's 20th anniversary. For more information, contact: IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-730-8025/13; e-mail: IPCC-Sec@wmo.int; internet: <http://www.ipcc.ch/>

**INTERNATIONAL DIALOGUE ON FINANCING SUSTAINABLE FOREST MANAGEMENT:** This Country-Led Initiative in support of the UNFF, to be held from 8-12 September 2008 in Paramaribo, Suriname, is organized by the governments of Suriname, the Netherlands and the United States. For more information contact: Henry Mac; tel: +1-212-980-7029; e-mail: [suriname@un.int](mailto:suriname@un.int); internet: <http://www.un.org/esa/forests/2008.html>

**WORKSHOP ON HARVESTED WOOD PRODUCTS IN THE CONTEXT OF CLIMATE CHANGE POLICIES:** This workshop will be held from 9-10 September 2008, in Geneva, Switzerland. Organized by the UN Economic Commission for Europe (ECE), Ministerial Conference on the Protection of Forests in Europe (MCPFE) and Switzerland, the event will aim to: provide information on carbon storage and the substitution effects of harvested wood products (HWP); present core principles of HWP accounting and national experiences; and consider the opportunities and impacts of HWP accounting for different stakeholders. For more information, contact: Sebastian Hetsch, UNECE/FAO Timber Section; tel: +41-22-917-4170; fax: +41-22-917-0041; e-mail: [sebastian.hetsch@unece.org](mailto:sebastian.hetsch@unece.org); internet: <http://www.unece.org/trade/timber/workshops/2008/hwp/>

**INTERNATIONAL SCIENTIFIC CONFERENCE ON TROPICAL RAINFORESTS AND AGROFORESTS UNDER GLOBAL CHANGE:** This meeting, to be held from 5-9 October 2008 in Bali, Indonesia, aims to advance understanding of human-induced global change processes, such as agricultural intensification and climate change, which threaten rainforests, by using an integrated scientific approach linking ecological, economic and social approaches at different scales. For more information, contact the Organizing Committee: e-mail: [info@globalchange-2008.org](mailto:info@globalchange-2008.org); internet: <http://www.globalchange-2008.org>

**TROPICAL FORESTRY CHANGE IN A CHANGING WORLD:** This conference will take place from 17-20 November 2008 in Bangkok, Thailand to promote the exchanges of technology and experience in various aspects of tropical forestry among stakeholders, researchers, technicians and other professionals. It will focus on how society can create more sustainable uses of tropical forests, and how the changing

global physical and social environment affects the future of tropical forests. For more information contact: FORTROP II Secretariat; tel: +662-579-0170; fax: +662-561-4246; e-mail: [FORTROP2008@ku.ac.th](mailto:FORTROP2008@ku.ac.th); internet: <http://www.forest.ku.ac.th/fortrop2008/main/index.php>

**FOURTEENTH CONFERENCE OF THE PARTIES TO THE UNFCCC (COP 14) AND FOURTH MEETING OF THE PARTIES TO THE KYOTO PROTOCOL (COP/MOP 4):** UNFCCC COP 14 and Kyoto Protocol COP/MOP 4 are scheduled to take place from 1-12 December 2008 in Poznan, Poland. These meetings will coincide with the 29th meetings of the UNFCCC's subsidiary bodies and the fourth meeting of the (AWG-LCA) and resumed sixth session of the *Ad Hoc* Working Group on Further Commitments for Annex I parties under the Protocol.(AWG-KP) For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); internet: <http://unfccc.int>

## GLOSSARY

ALU	Agriculture and Land Use Software Approach
AWG-LCA	<i>Ad Hoc</i> Working Group on Long-Term Cooperative Action under the Convention
CDM	Clean Development Mechanism
COP	Conference of the Parties
FAO	UN Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
GPG	IPCC Good Practice Guidance
HWP	Harvested Wood Products
IPCC	Intergovernmental Panel on Climate Change
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
LULUCF	Land use, land use change and forestry
REDD	Reducing emissions from deforestation and degradation in developing countries
SBSTA	Subsidiary Body for Scientific and Technological Advice
SFM	Sustainable Forest Management
UNDP	UN Development Programme
UNFCCC	UN Framework Convention on Climate Change