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IUFRO World Congress Bulletin

A Summary Report of the XXIII IUFRO World Congress

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SUMMARY OF THE XXIII IUFRO WORLD CONGRESS: 23-28 AUGUST 2010

The XXIII IUFRO World Congress, organized by the International Union of Forest Research Organizations (IUFRO), took place from 23-28 August 2010 in Seoul, Republic of Korea. The Congress was themed, “Forests for the Future: Sustaining Society and the Environment,” and it drew over 2,700 participants from 92 countries, the largest number of participants in the Congress’ history. There were also 2,027 presentations and 1,053 posters. The six-day event began with a speech from Lee Myung-bak, President of the Republic of Korea, and continued with daily keynote speeches from prominent figures in forestry, 15 sub-plenaries, a special discussion led by IUFRO’s President on the future challenges of forest education, 150 technical sessions, many poster sessions, side events, and a trade and exhibition area. Participants also attended eight forest-related field trips on the fourth day of the Congress organized to illustrate innovative forest-related projects around the Republic of Korea.

The Congress and its technical and poster sessions focused specifically on: forests and climate change; biodiversity conservation and sustainable use of forest resources; forest environmental services; Asia’s forests for the future; forest products and production processes for a greener future; emerging technologies in the forest sector; frontiers in forest and tree health; forests, communities and cultures; and forests, human health and environmental security.

Despite the intense schedule, sessions were well attended and saw significant discussion on a number of recurring themes during the week. Of particular note were repeated references to the following issues: narrowing knowledge and other gaps between science and policy; the need for the discipline of forestry and forestry education to evolve with changing demands on forests; the need for greater interdisciplinary work efforts; the importance of adopting more socioecological perspectives, which recognize the social embeddedness of efforts to protect and improve forest ecosystems; and the need for, and role and approaches of, forestry in climate change mitigation and adaptation. Beyond these emerging concerns, participants also took time to discuss and review advances in areas of long-standing concern for forest research, including forest health and statistical modeling of forest growth.

During the closing ceremony, the 2010 Congress Resolution was distributed, which details focal areas for future work and institutional commitments for IUFRO as an organization. Finally, new members of IUFRO’s decision-making body, the International Council, were approved and a new president-elect announced.



Performance of the traditional Korean dance called the “Lotus Flower”

A BRIEF HISTORY OF THE IUFRO WORLD CONGRESS AND INTERGOVERNMENTAL FOREST-RELATED PROCESSES

IUFRO was founded as the “International Union of Forest Experiment Stations” in 1892, changing its name after the First World War to “International Union of Forestry Research Organizations.” Uniting 15,000 scientists from roughly 700 organizations in 110 countries, IUFRO works to promote the coordination and implementation of international cooperative science on research related to forests and trees to advance the wellbeing of forests and the people who depend on them.

The first IUFRO World Congress took place in 1893, with Congresses convening approximately every five years since 1948. Each Congress is organized around a specific theme and serves as an opportunity to discuss, exchange, and disseminate scientific knowledge within and beyond IUFRO’s global network of member organizations.

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IUFRO XX: The twentieth IUFRO World Congress was held in 1995 in Tampere, Finland, and was themed, “Caring for the Forest: Research in a Changing World,” and resolved to: enhance research in key forestry and forest product areas, such as climate change and restoration of degraded lands; expand the research capacity of developing countries, as well as their participation in IUFRO; increase frequency and intensity of interdisciplinary work, as well as communication with organizations outside IUFRO; and emphasize policy and problem oriented research, with a focus on more research in the social sciences.

IUFRO XXI: The twenty-first IUFRO World Congress was held in 2000 in Kuala Lumpur, Malaysia, and was themed “Forests and Society: The Role of Research.” The Congress focused on forest and forestry related issues moving into the 21st century, particularly on the relationship between sustainable forest management and water, fire, genetic resources, pests and pollution, technology, and society.

IUFRO XXII: The twenty-second IUFRO World Congress was held in 2005 in Brisbane, Australia, and was themed “Forests in the Balance: Linking Tradition and Technology.” The Congress adopted resolutions to promote: global cooperation in forest-related research, including by ensuring gender and cultural diversity in research and advancing participation by of developing country researchers; and science for decision making by enhancing provision of problem-oriented forest research and translating research findings into policy-relevant language.

SELECTED INTERGOVERNMENTAL FOREST-RELATED PROCESSES: Global forest policy has developed in a variety of fora, including the Intergovernmental Panel on Forests (IPF), the Intergovernmental Forum on Forests (IFF), the UN Forum on Forests (UNFF), the International Tropical Timber Organization (ITTO), and the Committee on Forestry (COFO).

IPF: At its third session in 1995, the Commission on Sustainable Development (CSD-3) established the IPF. During its two-year mandate, the IPF developed over 100 negotiated proposals for action on sustainable forest management. The IPF’s outcomes were endorsed by CSD-5 in April 1997 and at the Special Session of the UN General Assembly in June 1997. The UN Economic and Social Council (ECOSOC) then established the IFF to continue this work under the auspices of the CSD.

IFF: The IFF met four times between October 1997 and January 2000 to “identify the possible elements of, and work toward consensus on, international arrangements and mechanisms, for example, a legally-binding instrument.” The IFF also proposed the creation of the UNFF and invited relevant international organizations, institutions and instruments and UN organizations to participate in a Collaborative Partnership on Forests (CPF). CSD-8 endorsed these conclusions and invited the President of ECOSOC to initiate informal consultations on options for placing the UNFF within the intergovernmental machinery of the UN system.

UNFF: On 18 October 2000, ECOSOC adopted Resolution E/2000/35, establishing the UNFF as a subsidiary body of ECOSOC. The objective of the international arrangement on forests is to promote the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end. The

resolution also establishes the CPF to support the work of the UNFF and enhance cooperation and coordination. The UNFF convened nine times between 2000 and 2010.

The IPF/IFF processes produced more than 270 proposals for action towards SFM, which form the basis for the UNFF Multi-Year Programme of Work and Plan of Action. Country- and organization-led initiatives have also contributed to UNFF’s work.

ITTO: The International Tropical Timber Agreement (ITTA), 1983, established the ITTO, headquartered in Yokohama, Japan, to provide a framework for tropical timber producer and consumer countries to discuss and develop policies on issues relating to international trade in, and utilization of, tropical timber and the sustainable management of its resource base. The Agreement was renegotiated during 1993-1994, with a successor agreement, the ITTA, 1994, being adopted on 26 January 1994 and entering into force on 1 January 1997. A second successor agreement was then adopted on 7 January 2006, but has not yet entered into force.

The ITTO’s mandate was expanded to focus on the world tropical timber economy and the sustainable management of the resource base, simultaneously encouraging timber trade and improving forest management. The mandate also allows for consideration of non-tropical timber issues as they relate to tropical timber. The governing body of the ITTO is the International Tropical Timber Council, with 60 members, which has met 45 times.

COFO: The Committee on Forestry (COFO) is the FAO’s most significant Forestry Statutory Body, bringing together heads of forestry services and other senior government officials to identify emerging policy and technical issues, seek solutions and advise the FAO and others on appropriate action. This is achieved through: periodic reviews of international forestry problems and their appraisal; review of the FAO forestry work programmes and their implementation; advice to the FAO Director-General on the FAO’s future work programmes in the field of forestry and their implementation; reviews of and recommendations on specific matters relating to forestry referred to it by the FAO Council, Director-General or member states; and reports to the FAO Council. COFO has met 19 times.

REPORT OF THE XXIII IUFRO WORLD CONGRESS

OPENING CEREMONY

The XXIII International Union of Forest Research Organizations (IUFRO) World Congress opened on Monday, 23 August 2010 with a drum performance and film presentation on the Republic of Korea’s work promoting green growth.



Don Koo Lee, IUFRO President

Don Koo Lee, IUFRO President, highlighted IUFRO’s history of advancing global cooperation on forest science through the activities of its member organizations, saying that only through such cooperation can contemporary global challenges be overcome.

After calling for new strategies for green growth, he declared the Congress officially open.



L-R: Don Koo Lee, IUFRO President, and Su See Lee, IUFRO, presented the Host Scientific Award to Sung Gak Hong, The National Academy of Sciences, Republic of Korea

Eduardo Rojas-Briales, UN Food and Agriculture Organization (FAO), highlighted difficulties faced due to the simultaneous increase in financial constraints on the forest sector and the demand for forest environmental services (FES). He called for, *inter alia*: forests to be recognized as more than simply carbon; reducing emissions from deforestation and forest degradation in developing countries (REDD); and increased forest-related education.

Jan McAlpine, UN Forum on Forests (UNFF), for Ban Ki-moon, UN Secretary General, said IUFRO plays an essential role in promoting sustainable forest management (SFM) through collaborations on forest research activities and in generating knowledge and assistance for improving forest governance.

IUFRO President Lee and Su See Lee, IUFRO, presented the host's scientific award to Sung Gak Hong, National Academy of Sciences, Republic of Korea, in recognition of his work in elevating the profile of forest science and research. They then presented scientific achievement awards to eleven other recipients for their work advancing forest research.

Lee Myung-bak, President of the Republic of Korea, discussed his country's efforts to restore its once barren lands, noting that forests are the foundation of our lives and the source of our basic needs. He said the Republic of Korea now ranks fourth in the Organisation for Economic Co-operation and Development for its ratio of forests to total land area.



Lee Myung-bak, President of the Republic of Korea

PLENARY SESSIONS

Throughout the week participants attended daily plenaries led by a range of experts, from Nobel laureates to renowned scientists and poets.



Ko Un, Korean poet

On Monday morning, Ko Un, a famous Korean poet, called for the development of a Human Charter for the Forest to prevent future atrocities committed against forests, referring to the "cumulative crime of forest destruction perpetrated over previous centuries by human avarice." He stressed that

voluntary institutions are urgently needed to ensure that such a declaration does not become a mere slogan; said that the future of the human race can only be guaranteed by making the forest spirit the very spirit of humanity; and made suggestions on, *inter alia*: educating schoolchildren on the importance of forests; and raising the rank of the Korean Forest Service and other relevant government administrations to that of top government agencies. He concluded by stating that the nations of tomorrow will only succeed if they are nations of the forest.

On Tuesday morning Frances Seymour, Center for International Forestry Research (CIFOR), began by considering



Frances Seymour, CIFOR

lessons learned from forest and communities research for the multiple challenges of integrating climate change into future research, and commended work and progress on understanding the importance of institutions,

rights and market constraints. She highlighted key areas for future research, including investigating: how REDD will shape or be shaped by existing financing institutions; the significance of climate change's political dominance for community forests; possibilities to reduce tradeoffs between climate and community; and social biases entrenched in policy. Seymour emphasized that there is much to be gained from investing in global comparative studies, but because no single organization has the capacity to undertake such an operation on its own, collaborative research must be pursued now more than ever.

On Wednesday morning, José Joaquín Campos Arce, Tropical Agriculture Research and Higher Education Center (CATIE), provided the keynote speech in which he presented on the integration of scales and sectors to improve sustainability of livelihoods, landscapes and forests. He highlighted that system approaches are necessary for addressing the complex set of challenges facing the world, as well as for achieving sustainable development, which requires



Keynote Speaker José Joaquín Campos Arce, CATIE

interdisciplinary, multi-stakeholder platforms, mechanisms and intense coordination. Agroforestry systems, he said, are key to improving livelihoods of poor rural families. He then identified several components of such systems including: managing tree density and growth to enhance carbon storage without affecting yields; linking local communities with socially responsible companies; finding innovative approaches to lower transaction costs; and identifying ecosystem approaches to SFM, forest conservation, and the establishment of biological corridors. He also said social and ecological resiliency are interdependent and the key to sustainable livelihoods, landscapes and forests, and concluded that implementing SFM requires collective and participatory research, capable leadership and long-term commitment of policy makers and researchers.

On Friday morning, Elinor Ostrom, 2009 Nobel Memorial Prize in Economics, addressed the role of communities in sustaining forest resources. She explained that multiple factors create forest conditions, and hence a simple management model is neither useful nor satisfactory. She stressed that studying socio-ecological interactions requires both an understanding of dynamic processes and adaptive policies, and advocated avoiding the “paper park,” a static solution, as a panacea for conservation.

Ostrom then presented several case studies, which addressed, *inter alia*: how alternative systems of governance affect social and ecological conditions; what conditions favor collective action for the provision of common pool resource management; and how people respond to changing ecological and social conditions. She highlighted a number of results, including that: forests lacking effective law enforcement are more susceptible to degradation and that those with effective enforcement mechanisms have a higher probability of regeneration; and conservation potential is highly dependent upon an effective combination of official and local user involvement in management design and implementation. Ostrom stressed the feasibility of multidisciplinary and underlined the importance of careful research design, proper training and consistency in methods across regions.



L-R: Elinor Ostrom, Indiana University and Arizona State University, 2009 Nobel Laureate in economics, accepting a token of appreciation from IUFRO President Don Koo Lee



Peter Shaw Ashton, Harvard University

On Saturday morning, Peter Shaw Ashton, Harvard University, drew on decades of experience in South East Asia to expound on the trajectory of tropical rainforests. He said intact forests only remain on steep slopes or areas with limited access or agriculture potential, which means that the lowland *Dipterocarp* forests, the region’s most productive, have been reduced to small remnants of a former grandeur. He attributed this transformation to low-cost energy. Although temperate forests underwent a similar transformation and have since re-grown, he opined that tropical forests are unlikely to revive.

Shaw also emphasized that conserving tropical forest diversity provides resilience to invasive species outbreaks. To retain this hedge against pathogens, he said small pockets of protection may be sufficient, but that these must be in areas under high threat, such as *Dipterocarpo* forests, and that timber management would be highly risky due to the close coupling of species viability and the structural evolution of forest stands.

A more detailed summary of the presentations is available in the Congress’ daily reports at: <http://www.iisd.ca/ymb/forest/iufro/iufroxiii/>

SUB-PLenary SESSIONS

Throughout the week, participants attended 15 sub-plenary sessions on research related to forest health and restoration, biodiversity, and climate change. A more detailed summary of these presentations and discussions is available at: <http://www.iisd.ca/ymb/forest/iufro/iufroxiii/>

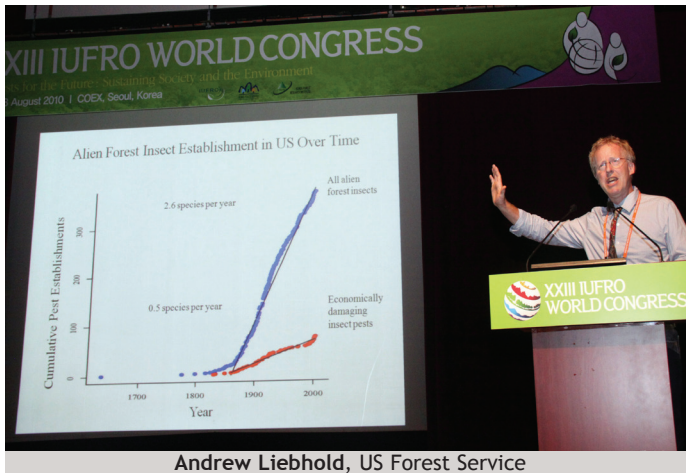
FOREST HEALTH IN A CHANGING

ENVIRONMENT: On Monday, Elena Paoletti, National Research Council Plant Protection Institute, Italy, presented on the compounding effects of air pollution on forest ecosystems given climate change, saying climate change exacerbates ozone and nitrogen impacts forest health and reduces forest-carbon sequestration.

Nicola La Porta, Edmund Mach Foundation, said altered temperature and precipitation patterns may increase the effects of fungal diseases on forests, either because trees will be more stressed or new threats may appear because of changing species composition and the arrival of new pathogens.



Nicola La Porta, Edmund Mach Foundation



Andrew Liebhold, US Forest Service, emphasized globalization as a key driver of invasive species. He described varied impacts of invasions on natural, plantation, and urban forests, and said work to prevent arrivals can reduce costs to control or eradicate established invasive species.

Martin Lorenz, Institute for World Forestry, presented on the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests, describing its work monitoring forest ecosystem conditions and spatial and temporal variation of forest health.

William Orosina, US Forest Service, described how land-use changes, including those resulting from fire suppression and agriculture, create sub-optimal conditions for certain species due to interactive effects with root pathogens.

Andrea Battisti, Padova University, presented on the importance of climate change for forest health, noting that direct and indirect effects of climate change will generally increase the activeness of herbivorous insects. When combined with expanded insect ranges, he said, this is likely to increase insect outbreaks.

KEEP ASIA GREEN: REHABILITATING AND RESTORING FOREST ECOSYSTEMS IN ASIA: On Monday, Don Koo Lee, IUFRO President, highlighted that the session summarized results of IUFRO's "Keep Asia Green" initiative.

Zhiqiang Zhang, Beijing Forestry University, presented on afforestation and ecological restoration in the East Asia region. He noted that despite deforestation and forest-land degradation, extensive forest-related land rehabilitation activities in his region have resulted in significant restoration of forest cover in some countries.

Victor Teplyakov, Seoul National University, discussed forest use and rehabilitation in the Russian Federation's Far East, noting reforestation efforts made.

Lucrecio Rebugio, University of the Philippines, presented successful cases and lessons learned on rehabilitating degraded forests in Southeast Asia, lamenting that in spite of efforts, forest cover decline continues in most of the regions' countries.

Promode Kant, Institute of Green Economy, India, reported on rehabilitating forests and extending tree cover in South Asia, highlighting the importance of: forest law and policy; community-based forest management; and establishment of rehabilitation projects.

Khosro Sagheb-Talebi, Research Institute of Forests and Rangelands, Iran, presented on the forest landscape restoration and rehabilitation activities in West Asia, highlighting: survey and site-specific planning; application of participatory approaches; watershed rehabilitation in mountainous regions; combating desertification; flood-water spreading; and rain-water harvesting.

Almazbek Orozumbekov, Kyrgyz National Agrarian University, presented on rehabilitating degraded forest landscapes in Central Asia, saying centuries of nomadic lifestyles have degraded forests through timber exploitation, uncontrolled grazing and fire. He then discussed rehabilitation efforts undertaken in the region.

BIODIVERSITY, CLIMATE CHANGE AND FORESTRY – PERSPECTIVES OF THE COLLABORATIVE PARTNERSHIP ON FORESTS: On Monday, Eduardo Rojas-Briales, FAO, spoke on the goals and achievements of the Collaborative Partnership on Forests. He also noted that 2011 will be the UN's International Year of Forests, to be organized by UNFF.



Lucrecio Rebugio, University of the Philippines



Khosro Sagheb-Talebi, Research Institute of Forests and Rangelands, Iran



L-R: Ahmed Djoghlaif, CBD; Bill Jackson, IUCN; Jan McAlpine, UNFF; Peter Mayer, IUFRO; Eduardo Rojas-Briales, FAO; Tony Simons, ICRAF; and Emmanuel Ze Meka, ITTO



L-R: Michelle Gauthier, FAO; Kjell Nilsson, University of Copenhagen; David Nowak, US Forest Service; and Jay Bolthouse, University of Tokyo

Bill Jackson, International Union for Conservation of Nature (IUCN), discussed the landscape approach for linking climate change, forest biodiversity and the needs of people. He recommended “nature-based solutions,” such as REDD, with an emphasis on all forest values.

Ahmed Djoghlaif, Convention on Biological Diversity (CBD), described the importance of the upcoming CBD’s tenth meeting of the Conference of the Parties, taking place in October in Nagoyga, Japan, to adopt a new global strategy for biodiversity, especially for improved access and benefit sharing and conservation of genetic resources. He hoped that an agreement would include a legally-binding monetary evaluation mechanism.

Emmanuel Ze Meka, International Tropical Timber Organization (ITTO), described reducing deforestation and forest degradation and enhancing environmental services in tropical forests (REDDES). He identified several REDDES research priorities, including: multi-purpose forest inventories; enhancement of environmental services in production forests; and capacity building and demonstration.

Tony Simons, World Agroforestry Centre (ICRAF), emphasized the importance of good communication. Saying that although the word “forestry” is now contained in 40 million Internet addresses, some much less inspiring searches bring up many times this number.

Jan McAlpine, UNFF, stressed the need to recognize that large populations depend on forests. On cross-sectoral connections, McAlpine described the UNFF 360 degree perspective on forests as an initiative valuing and creating institutional partnerships beyond the forestry sector, including with several UN conventions and the ITTO.

PROMOTING URBAN FOREST SERVICES IN PARTNERSHIP BETWEEN SCIENTISTS AND COMMUNITIES:

On Tuesday, Chair Cecil Konijnendijk, University of Copenhagen, said urban forestry should strive to be more: integrative, strategic, inter- and multi-disciplinary, participatory, and aware of modern urbanites’ demands, as they make up the majority of foresters’ “customers” today.



Chair Cecil Konijnendijk, University of Copenhagen

David Nowak, US Forest Service, discussed partnering with urban communities to secure data and promote urban management of forest services in the United States using the iTree tool.

Kjell Nilsson, University of Copenhagen, introduced the Peri-urban Land Use Relationships - Strategies and Sustainability Assessment Tools for Urban-Rural Linkages Project in which 14 European countries and China participated, and analyzed challenges and consequences of urbanization. Project results recommended responses, including: improved governance and integrated territorial policy approaches; and strengthening public sector control over urban sprawl.

Jay Bolthouse, University of Tokyo, illustrated how forests can bridge the urban/rural divide. He said managing urban forests can be treated as a leisure activity, presenting results of a study on a Japanese urban forest paradigm of volunteer management.

Michelle Gauthier, FAO, said FAO is increasingly requested to assist with rural-urban linkages in developing countries, primarily related to consequences of chronic urban watershed mismanagement, such as sinking water tables. Discussions focused on: the importance of partnerships; the need to develop internationally standardized assessment tools; the focus on matching policy to the needs and aspirations of the public; and integrating forestry issues into school education.

IUFRO AWARD WINNERS – THE NEXT

GENERATION: On Tuesday, Co-Chair Su See Lee, introduced this year’s awardees, noting that female and developing-country students were well represented. Co-Chair, Michael Rivoire, International Forestry Students’ Association, moderated a discussion on the students’ research.

Three people received the Student Award for Excellence in Forest Science: Lee Hong Tnah, Forest Research Institute Malaysia, for her work on a DNA database designed to help stop illegal logging; Marco Contreras, University of Montana, for using an innovative optimization technique to determine least-cost and environmentally friendly routes for wood transportation; and Mahbulul Alam, Ehime University, for characterizing the ecology and significance of “home gardens” in Bangladesh. Eight people received the Outstanding Doctoral Research Award.



Winners of IUFRO's Student Award for Excellence in Forest Science and Outstanding Doctoral Research participated in a panel discussion on their motivations, challenges and experiences in conducting their research projects

CAN FORESTRY AND FOREST SECTOR ACTIVITIES CONTRIBUTE TO MITIGATING CLIMATE CHANGE?:

On Tuesday, Werner Kurz, Natural Resources Canada, moderated the session and emphasized the importance of educating policy-makers about the forest sector's contributions to climate change mitigation.

Frank Werner, independent consultant, explained a model for effective long-term forest and wood management for GHG mitigation, emphasizing that an optimized life cycle of wood products should include a maximum but sustainable increment of harvestable wood, and continuous downcycling through a use "cascade" terminating as fuel for bioenergy.

Reid Miner, National Council for Air and Stream Improvement, reviewed the global forest industry's impact on greenhouse gasses (GHGs), highlighting that increasing the use of forest products can produce large benefits to society via GHG reductions.

Ben de Jong, El Colegio de la Frontera Sur, reported on the readiness of Mexico to begin carbon accounting based on REDD assessments. Richard Harper, Murdoch University,

spoke on bio-mitigation and, noting that forestry alone will not be able to solve carbon imbalances, proposed research on using abandoned farmland for mitigation to avoid the problem of the food versus fuel debate. William Keeton, University of Vermont, introduced a new study on the carbon storage potentials of temperate old growth forests based on an aggregated global dataset.

IUFRO DIRECTORS FORUM: FOREST MONITORING IN TIMES OF CLIMATE CHANGE:

On Wednesday, Co-moderator Konstantin von Teuffel, Forest Research Institute Baden Württemberg, introduced the Forum as a place to exchange views on management of forest research. Co-moderator Ann Bartuska, US Forest Service, added that the Forum also aims to make the theoretical practical.

Mette Loyche Wilkie, FAO, underscored the enormous data gaps researchers faced preparing for FAO's Global Forest Resources Assessment 2010, especially on: net changes in carbon stocks; previous and current deforestation rates; and carbon emissions from deforestation. She stressed that



L-R: Mette Loyche Wilkie, FAO; Ben Chikamei, Kenya Forestry Research Institute; Peter Mayer, IUFRO; José Joaquín Campos Arce, CATIE; Joon Hwan Shin, Korea Forest Research Institute; Klaus-Herman von Wilpert, Forest Research Institute of Baden-Württemberg; and George "Sam" Foster, US Forest Service

REDD-plus is a window of opportunity to improve forests and forest data that must not be passed over. Ben Chikamai, Kenya Forestry Research Institute, spoke on forest monitoring in Kenya and Africa. He noted that despite progress made in his country, only 11 African countries are set to benefit from REDD projects through the World Bank.

José Joaquín Campos Arce discussed forest monitoring in Latin and Mesoamerica, stressing it is an adaptive management tool, not a luxury, and that this, as well as research results, must be better communicated to stakeholders. Joon-Hwan Shin, Korea Forest Research Institute, stressed the need to answer four questions: What forest information is important for climate change? What is the appropriate structure of a global forest monitoring system? How can the needs of developing countries be met? Who will pay for such a system?

Klaus-Herman von Wilpert, Forest Research Institute of Baden-Württemberg, presented the outcome of forest monitoring in Central Europe as a basis for SFM. He purported that forest decline is the result of air pollution and soil degradation, and emphasized that monitoring should be a continuous bottom-up endeavor. George "Sam" Foster, US Forest Service, said there is a critical demand for increased forestry monitoring information and stressed the need for, *inter alia*: further integrating satellite data with ground level information; a focus on innovations to lower monitoring costs; and better understanding what forest change really means.

FOREST BIOMASS UTILIZATION FOR BIO-ENERGY: TECHNOLOGY, ECONOMICS AND ENVIRONMENT: On Wednesday, Woodam Chung, University of Montana, moderated the session explaining that biomass can be used as a tool for mitigating climate change.

Nathaniel Anderson, University of Montana, explained it was cost-effective and feasible to supply timber residue at US\$43 per ton in Oregon for energy production, and concluded that pyrolysis production of biochar has great potential. Christian Suchomel, University of Freiburg, described harvesting firewood via the coppice method, which generates dense and sustainable re-sprouting of forest stands, providing sustainable bioenergy. He concluded that coppice is good for conservation.

Han-Sup Han, Humboldt State University, emphasized that non-uniform forest residues are difficult and expensive to handle, and described challenges with four current residue collection and transport systems: centralized processing; on-site processing; slash bundling; and integrated systems. Xueyong Ren, Beijing Forestry University, presented on fast pyrolysis bio-oil production. Using this method, he said, biomass can be converted to biochar, bio-oil, or combustible gas in a single chemical reaction. Using a life-cycle approach, Young-Seop Choi, Kangwon National University, compared wood fuels, such as wood pellets and chips, and assessed the conditions, such as transportation distance, which shape the benefits of these fuels for consumers and producers.

On bioenergy in Japan, Kazuhiro Aruga, Utsunomiya University, lamented that though forest, sawmill, and construction waste residues largely go unused, subsidies to make them economically viable are unlikely to be introduced.



Han-Sup Han, Humboldt State University

Deborah Page-Dumroese, Michigan Technological University, highlighted the importance of soil science in forestry management and biomass harvest, stating that both alter soil processes physically, chemically, and

biologically. She said retaining the forest floor is key to forest.

Lisa Sennerby-Forsse, Swedish University of Agricultural Sciences, for Helene Lundkvist, summarized bioenergy development in Sweden, noting it had surpassed hydropower and nuclear power, and accounts for more than 25% of total energy supply.

CONSERVATION AND SUSTAINABLE USE OF FOREST GENETIC RESOURCES: On Wednesday, Zohra Bennadji, National Agricultural Research Institute, Uruguay, detailed a project identifying critical problems in forest genetic resource (FGR) conservation and sustainable use, which will inform the first FAO assessment on the global status of FGRs. She noted: the need for standardized indicators for forest species priorities and genetic diversity; a lack of good exchange mechanisms for information sharing on FGRs; and weak links between policy and science.

Judy Loo, Bioversity International, presented an approach for managing conservation of genetic diversity when reliable information on variability of FGRs is lacking, recommending that management decisions should assume that genetic diversity correlates with environmental variability until better information is available on this important resource.

Dag Lindgren, Swedish University of Agricultural Sciences, discussed how climate change has raised the profile and necessity of seed orchards and said they will become more important



Kyu-Suk Kang, Korea Forest Research Institute

in years to come. Kyu-Suk Kang, Korea Forest Research Institute, reviewed the history, advances and aims of tree breeding in the Republic of Korea, including work on breeding indigenous timber species and the establishing seed orchards. Yongqi Zheng, Chinese Academy of Forestry, detailed the role FGR can play in ensuring

that species and ecosystems can adapt and survive changing climatic conditions and greater variability in these conditions.

ENHANCEMENT OF SERVICE LIFE OF WOOD IN AN ENVIRONMENTALLY CONSCIOUS GLOBAL SOCIETY: On Friday, Gérard Deroubaix, Technical Industrial Center for Forest, Wood and Furniture, explained that the amount of carbon stored in wood products is small relative to forest stocks, but there are ways to increase it, including by extending the life of wood products in use, enhancing recycling and using wood products over other carbon-intensive materials. Koichi Yamamoto, Forestry and Forest Products Research Institute, said Japan is working to enhance forest carbon via:



Deborah Page-Dumroese, Michigan Technological University



Dag Lindgren, Swedish University of Agricultural Sciences

forest management; wood promotion policies to store carbon in products, such as by requiring 100% wood construction in government buildings of four stories or less; and expanding Japan's forest area.

Henrik Heräjärvi, Finnish Forest Research Institute, presented on the strength of wood-based construction materials compared to other materials.



Andrew Wong, Universiti Malasia Sarawak

He reviewed the life-cycle of construction timber from forest to disposal, and assessed opportunities for improving environmental performance of timber.

Andrew Wong, Universiti Malasia Sarawak, highlighted the need

to couple wood protection and wood durability, either via wood treatment or using naturally durable species. D. Pascal Kamdem, University of Michigan, said durability must involve protecting against biological, physical, chemical and mechanical degradation and noted ways to address this: proper design; use of naturally durable species; physical-chemical-mechanical modification; and use of wood preservatives.

Gyu-Hyeok Kim, Korea University, discussed work on fungi capable of degrading wood treated with copper chromium arsenate as a means to safely dispose of treated wood that ends up in the waste stream. He said they found eight fungal strains which were deemed effective in rotting the wood and that these were more effective than copper.



Gyu-Hyeok Kim, Korea University

AGROFORESTRY: THE WAY FORWARD: On Friday, Ramachandran Nair, University of Florida, described development of agroforestry as an approach for: poverty alleviation; attainment of MDGs; food security; carbon sequestration; combating deforestation and desertification; fodder and fuel-wood supply; and environmental protection. Eike Luedeling, ICRAF, discussed a study on the carbon

sequestration potential of agroforestry systems in the African Sahel. He noted that while adding trees to agricultural



Fergus Sinclair, ICRAF

areas can be a strategy for sequestering atmospheric carbon, climate change adaptation might be more important than mitigation. Fergus Sinclair, ICRAF, spoke on the potential timber supply from agroforestry, saying only a proportion of tree cover has any timber value.

Shibu Jose, University of Missouri, presented on North American agroforestry practices, claiming they need to

overcome many barriers, including a lack of public awareness. Francisco Javier Silva Pando, University of Santiago, Spain, spoke on silvopastoral systems for forest fire prevention. Tony Simons, ICRAF, summarized the history of agroforestry and listed several future



Shibu Jose, University of Missouri

recommendations, including looking at agroforestry systems as a way to "bullet-proof" farms in the face of climate change.

In the panel discussion, participants debated payment for environmental services' (PES) role in this field and the optimization of land use in the context of climate adaptation and mitigation needs. Many emphasized the need to attract new researchers and enlist more universities in helping communities with the complex analysis of agroforestry issues.

NEW FRONTIERS OF FOREST ECONOMICS:

On Friday, Moderator Shashi Kant, University of Toronto, announced that IUFRO has founded a new group on forest economics in recognition that "You cannot create new policies based on old science, and we must step up to the plate."

Elinor Ostrom spoke about challenges of establishing whether a forest is deteriorating or improving over time. Sharing results from an 11-country study, she recognized that plot-based measurements are widely accepted as a



L-R: Karl-Gustaf Löfgren, Umeå University; Urs Fischbacher, University of Konstanz; David Laband, Auburn University; and Elinor Ostrom, 2009 Nobel Memorial Prize in Economic Sciences

reasonable measure, but that it is expensive. As an alternative she highlighted how long term forest users can also provide information on forest condition. David Laband, Auburn University, presented on public choice theory, noting that, due to re-election pressures, politicians' are incentivized to care more about the short-term political and economic gains offered by the timber industry, rather than the longer-term goals of SFM.

Urs Fischbacher, University of Konstanz, spoke about benefits of economic experiments in understanding how long-term forest objectives can be managed. He said his models illustrate how conditional cooperation is capable of preserving common pool resources, but that enforcement can be a potential issue. Karl-Gustaf Löfgren, Umeå University, considered economic modeling in forestry to avoid the "Lucas critique," which says that when policies change, one must change the parameters of the model because using previously observed behavior is no longer adequate. He said forestry can largely avoid this problem due to the richness of historical data.

READING THE PULSE OF FOREST SCIENCE – IUFRO PRIORITIES 2010-2014: On Saturday, Moderator Niels Elers Koch, IUFRO, introduced the session and IUFRO research division coordinators and deputy coordinators, who were to describe the outlook for their respective thematic areas.

For Silviculture, Björn Hånell, Swedish University of Agricultural Sciences, said IUFRO should not restrict itself to only financially supporting conference participation of young scientists from developing countries. For Physiology and Genetics, Bailian Li, North Carolina State University, said the division's work is being shaped by increased wood demand, especially for biofuel production, noting intensive genetically modified and cloned plantation forestry is needed to meet increasing demand. For Forest Operations Engineering and Management, Hans Heinemann, ETH Zurich, said his division aims to: increase interdisciplinary work; compile best practices for bioenergy supply; develop inventory input/output models for harvesting; and analyze eco-profiles for eco-efficiency. For Forest Assessment, Modeling and Management, Margarida Tomé, Technical University of Lisbon, highlighted research priorities for her division as: improved forest monitoring; multisource inventories at a reasonable cost; methodologically new, more complex forest modeling; and designs for adaptive forest management.

For Forest Products, Dave Cown, Scion and New Zealand Forest Research Institute, stressed that IUFRO must: improve public outreach by ensuring public access to knowledge and popularizing forests through the media; and find ways to ensure that developing country board members can afford to come to meetings. For Social, Aspects Of Forests and Forestry, Perry Brown, University of Montana, said the way forward is to



Margarida Tomé,
Technical University of
Lisbon



Dave Cown, Scion and New Zealand
Forest Research Institute



IUFRO delegates with the IUFRO Congress mascot mixing a giant serving of "Bibimbap"

improve forest education, stating that "it is only when people realize what they have to lose that they'll get interested." For Forest Health, Mike Wingfield, University of Pretoria, said biological invasions have reached a terrifying state and feared that genetic modification may be the only way to grow trees in the future. For Forest Environment, Jean-Michel Carnus, French National Institute for Agricultural Research, focused on new priorities for the division, including: climate and forest ecosystems; feedback between land cover, disturbances and climate change; forest and water interaction; and effects of land-use change on watershed hydrology.

AN HONEST CONVERSATION ABOUT DECENTRALIZATION AND FOREST LIVELIHOODS IN A GLOBALIZED WORLD: On Saturday, Carol Colfer, CIFOR, moderated the session and introduced the first all-female IUFRO panel.

Reem Hajjar, University of British Columbia, presented findings from six case studies examining the devolution of management authority to community forests in Brazil and Mexico. In spite of variation across the cases, she said the communities have received limited decision-making authority for their forests, as governments remain heavily involved in medium- and long-term planning. Monika Singh, University of British Columbia, presented two case studies on community-forestry experiences of indigenous communities in India and Canada. With both, she said, the final management authority remained with government, albeit with different but minimal processes for involving indigenous people.

Joleen Timko, University of British Columbia, described an assessment of Cameroon's approach to community forestry. She explained that legal, administrative and procedural frameworks for such communities are in place, as well as monitoring and enforcement provisions, but that the model could be further improved by, *inter alia*, reducing administrative costs. Juan Chen, University of British Columbia, reviewed two case studies in China exploring the challenges facing communities in managing collective forests, including illegal activity and unclear or insecure forest tenure.

S. Denise Allen, University of British Columbia, discussed the experiences of the Wet'suwet'en First Nation in Canada in a globalizing world, and called for more culturally sensitive decentralization of land-use management in recognition that cultural and ecological preservation are at stake.



L-R: Joleen Timko, University of British Columbia; Juan Chen, University of British Columbia; Reem Hajjar, University of British Columbia; S. Denise Allen, University of British Columbia; and Monika Singh, University of British Columbia

In the discussion, participants considered, *inter alia*: ensuring community forests are not “designed to fail,” and situations where local elites control decision-making to the detriment of the larger community.

FOREST BIODIVERSITY – THE KEY TO HEALTHY AND RESILIENT FORESTS: On Saturday, Moderator Ian Thompson, Canadian Forest Service, opened the session with a UN Environment Programme (UNEP) film celebrating the UN International Year of Biodiversity. He then presented an overview of the relationship between forest biodiversity, resilience and climate change.

Robert Nasi, CIFOR, Indonesia, presented on defaunation and tropical ecosystem resiliency. He noted biodiversity

as important for ecological, economic and social function, and that certain creatures act as keystone species on which an entire system depends, highlighting the example of bushmeat. He urged for balance between forest conservation

and valuation. Yusuf Bahtimi, International Forestry Students’ Association (IFSA), looked at the effect of invasive *Acacia* species on forest resilience in Indonesia.

Summarizing, Thompson described the session’s three main points: the relationship between biodiversity and resilience; and the great impacts of biodiversity loss and those of invasive species on goods and services.



Robert Nasi, CIFOR, Indonesia

TECHNICAL SESSIONS

On Monday, Tuesday, Wednesday, Friday and Saturday, participants attended 150 technical sessions organized around the Congress’s nine thematic areas. IISD RS covered 15 of these sessions below. A more detailed summary of technical sessions is available in the Congress’ daily reports at: <http://www.iisd.ca/ymb/forest/iufro/iufroxiii/>

FORESTS AND CLIMATE CHANGE

Seventeen technical sessions under the theme forests and climate change discussed topics including: climate change impacts and interactions in the boreal forest zone; adapting to future wildland fire regimes; and impacts of climate change on forest ecology, ecosystem processes, and management.

BIODIVERSITY AND CLIMATE CHANGE: DIRECT AND INDIRECT LINKAGES IN ADAPTATION AND MITIGATION: On Tuesday, M. Danesh Miah, University of Chittagong, presented challenges of harmonizing requirements of the Kyoto Protocol’s Afforestation/Reforestation Clean Development Mechanism (CDM) and those of the CBD. He emphasized potential benefits of Afforestation/Reforestation credits, but cautioned that alien species may arrive via the plantation process. Jürgen Baus, University of Freiburg, noted conflicts between silviculture, which aims to enhance select forest functions, and nature conservation, which aims to maintain an ecosystem’s historic conditions. He said planning for desired future ecosystem functioning may reduce these conflicts.



M. Danesh Miah, University of Chittagong



Participants heard presentations on linkages between biodiversity and climate change

David Flaspohler, Michigan Technical University, explained that demand for plant-based biofuels could intensify forest management in ways that harm native species, but that well designed intensive management can be developed to sustain ecosystem services.



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David Flaspohler, Michigan Technical University

Eckehard Brockerhoff, Scion and New Zealand Forest Research Institute, said impacts of climate change on forest biodiversity include range-boundary changes and phenological shifts, which can create new patterns of invasive species. Chan-Ryul Park, Korea Forest Research Institute, presented on the effects of climate change and forest decline on bird ranges, and said eco-tourism may support retention of habitat.



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Eckehard Brockerhoff, Scion and New Zealand Forest Research Institute

Alexander Belokurov, WWF, stressed that protected areas remain paramount for biodiversity conservation, providing vital climate change mitigation and adaptation benefits.

COMPETING ROLES OF FORESTS IN CLIMATE CHANGE MITIGATION: On Friday, Marc Hanewinkel, Forest Research Institute of Baden-Württemberg, forecasted that Germany's business as usual timber harvest volume and growing forest stock will increase carbon stocks until 2026 on a level above the national cap set by Kyoto Protocol targets. Bishnu Chandra Poudel, Mid Sweden University, showed that temperature rise will significantly increase forest biomass production in Sweden and that a large net reduction of carbon emissions is possible if wood replaces concrete and biomass residues replace fossil fuels.

Lauri Valsta, University of Helsinki, stressed that climate policy must recognize that forests provide multiple benefits. Hans Verkerk, European Forest Institute, explained



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Lauri Valsta, University of Helsinki



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Hans Verkerk, European Forest Institute

that European forests are expected to remain a net carbon sink, but that this sink will decline with business-as-usual practices and that the increased harvest levels could exacerbate the decline.

Dodik Ridho Nurrochmat, Bogor Agricultural University, warned that a strong REDD scheme will have negative multiplier effects on associated industries and communities in timber exporting countries, thereby increasing illegal logging.



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Dodik Ridho Nurrochmat, Bogor Agricultural University

Yoon-Hyung Kim, Ohio State University, discussed the impact of US and European biofuels policies on forest carbon. Kim found that the US and EU will lose significantly more forests than predicted by other models, and that Southeast Asia will

actually gain forest. Christine Fürst, Dresden University of Technology, spoke about the land-use modeling tool "pimp your landscape" to help communities and decision-makers choose from scenarios to mitigate climate change in Saxony, Germany. This tool uses a visual matrix for assessing trade-offs among social, ecological and economic objectives.

BIODIVERSITY CONSERVATION AND SUSTAINABLE USE OF FOREST RESOURCES

Under this, 28 technical sessions were held on topics, including: long-term forest monitoring and its importance for decision-makers; frontiers in wildlife ecology and management; the contribution of science to the fight against illegal logging; and challenges and progress with silvicultural systems for tropical forests.

INNOVATIVE APPROACHES TO FOREST ECOSYSTEM RESTORATION: On Tuesday, John Stanturf, US Forest Service, highlighted the significant opportunity of forest restoration and suggested ways to integrate social and natural science approaches with a resiliency science framework. Ekeoba Drawing from a study in southern Nigeria on restoration of agricultural lands, Isikhuemen, Ministry of Environment and Public Utilities, Nigeria, explained that appropriate eco-friendly cropping mixtures and agroforestry practices can be effective restoration tools. Keiko Nagashima, Kyushu University, reviewed patterns of vegetation recovery on abandoned plantation clearcuts on the Kyushu Island of Japan. She said deer grazing was the main factor inhibiting tree species recovery, and that slope form, adjacent natural broadleaf forests and abandoned sites influence vegetation types that emerge.



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Keiko Nagashima, Kyushu University

Arno Thomaes, Research Institute for Nature and Forest, Belgium, outlined the influence of oak and poplar species on soil pH and how this, in turn, shapes the abundance of

ancient forest herbs in post-agricultural forests. Coert J. Geldenhuys, University of Stellenbosch, discussed species richness in secondary forests of the Congo Basin and South Africa as an indicator of recovery. He explained how such recovery could serve as the basis for restoration projects matched with local agro-forestry systems.

IDENTIFYING AND MONITORING OLD GROWTH FORESTS IN BOREAL, TEMPERATE AND MEDITERRANEAN ENVIRONMENTS:

On Wednesday, Thomas Spies, US Forest Service, focused on old growth forests in the US Pacific Northwest, highlighting varied and complex definitions for old growth and different pathways by which these forests develop. Rod Keenan, University of Melbourne, reviewed the operational definitions used to map and designate protected areas in Australia and stressed the need for adaptive management approaches, particularly given climate change. Anna Barbati, University of Tuscia, said a structural approach is a fast and practical way to identify old growth forests, emphasizing that to find European old growth forests one needs to look in hard-to-access or unmanaged areas. William Keeton, University of Vermont, discussed a study on harvesting treatments designed to encourage development of old growth attributes in secondary forests of the US Northeast.

Grant Wardell-Johnson, Curtin University, outlined the importance of climate change for old growth protection given that shifting temperature and precipitation regimes will alter the viability of protected areas to sustain specific ecosystems. He also stressed that forest protection plays a role in mitigating climate change given the large carbon storage of their soils. Jan Bannister, University of Freiburg, discussed stand dynamics of swamp and upland *Pilgerodendron uviferum* forests in Patagonia and said, counter to previous knowledge, the tree species is stress and shade tolerant and can regenerate in the absence of large disturbances, such as fire.

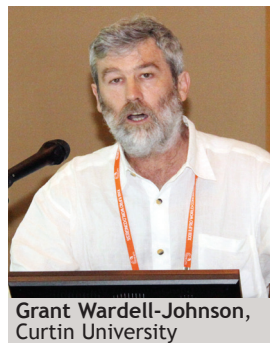


Jan Bannister, University of Freiburg



Coert J. Geldenhuys, University of Stellenbosch

Alfredo Di Filippo, University of Tuscia, described work on life histories of beech stands in Italy where he used to analyze the transition of these forests towards old growth status. Kris Verheyen, Ghent University, reviewed long-term changes in understory vegetation in European forests and offered a synthesis quantifying the rate and nature of change and the key environmental drivers.



Grant Wardell-Johnson, Curtin University

FOREST ENVIRONMENTAL SERVICES

Sixteen technical sessions were held under the theme, "Forest Environmental Services," and examined such topics as: the impact of global environmental change on forest ecosystem services; agroforestry for climate change adaptation; and forest carbon credit markets and the forest sector.

ECONOMIC VALUATION OF FOREST ECOSYSTEM SERVICES: On Monday, Larry Mason, University of Washington, sketched the policy challenges to successfully valuing and compensating for FES, citing administrative costs of forest certification and carbon markets. He advocated, place-based approaches to forest management instead. Richard Yao, Scion and New Zealand Forest Research Institute, discussed research on non-market valuation of recreational use of New Zealand's Whakarewarewa forest, and noted, *inter alia*, differences in how users valued recreational opportunities and forest characteristics.

Peter Herbst, IUFRO, described the habitat-scoring methods used to determine the offsets needed to compensate for forest habitat destruction in Georgia related to an international pipeline right-of-way. Robert Deal, US Forest Service, described the challenge of coordinating across regulatory agencies, avoiding double counting and demonstrating additionality when valuing bundles of ecosystem services.

Shuirong Wu, Chinese Academy of Forestry, presented a meta-analysis of FES valuation in China. She concluded that there is great variation in FES



Shuirong Wu, Chinese Academy of Forestry

values, and that predicting values based on previous studies is unreliable. Eduardo H. Ditt, Ecological Research Institute, Brazil, discussed valuation and policy in the context of the Atlantic Forest of Brazil and presented a range of ecosystem value scenarios - US \$49-60 million per year - differentiated by land use type and valuation method.

TO WHAT EXTENT CAN PAYMENTS FOR FOREST ENVIRONMENTAL SERVICES BE PRO-POOR?:

On Wednesday, Sim Eun Suh, Seoul National University, questioned motivations for linking poverty to PES, saying that PES' focus on cost efficiency actually benefits from

poverty and may create an environmentally "sustainable poverty." Lisa Petheram, Charles Darwin University, shared lessons from engaging communities on PES near a Vietnamese national park. She noted, *inter alia*, limited trust in government led respondents to favor payments from other sources and a combination of monetary and in kind payments was preferred.



Lisa Petheram, Charles Darwin University



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Stephen Garnett, Charles Darwin
University

Stephen Garnett, Charles Darwin University, on behalf of Pham Thu Thuy, shared findings of a pro-poor PES case study in Vietnam. Main messages included that: influential stakeholders can fuel inequity and inhibit participation; neutral intermediaries are hard to find; PES may not cover opportunity and transaction

costs of poor households, but monetary gain is not the sole motivation to participate; and that understanding locals' definition of poverty should be central to project planning.

Marieka Sandker, CIFOR, presented on participatory modeling of potential REDD outcomes in Ghana. She discovered that in areas with high population, low forest density and valuable cash crops, REDD does not offer enough incentives to overcome planned conversion. Additionally, she said that the limited ownership of forests by the poor will limit their access to REDD proceeds, creating the danger that landowners may repatriate leased lands in order to collect these proceeds.

ENERGY FORESTS – SOCIAL IMPACTS AND ENVIRONMENTAL SERVICES: On Saturday, David Neil Bird, Joanneum Research, discussed using forests to provide energy for climate change mitigation. He said using transient biomass, which decays quickly, shows short-term emissions increases but these decrease significantly over time. Ioannis Dimitriou, Swedish University of Agricultural Science, illustrated that short rotation willow coppicing can have positive impacts on water quality in Sweden when using water from wastewater storage ponds. He said more innovation in multifunctional biomass production systems is needed.

Graham von Maltitz, Council for Scientific and Industrial Research, South Africa, talked about potential impacts of *Jatropha* plantations on key ecosystems services in South Africa, including that: yields are likely to be an order of magnitude less than expected; water impacts are negligible; and biodiversity impacts are similar to other woody crops. Arviand Reddy, Winrock International India, presented an investigation of social impacts of bio-energy programmes in India, finding that the government's programme offers the least social benefit, using the indicators of: community and institutional structure; political and social resources;

community and family change; and community resources.

Jennifer Harrison, Newcastle University, spoke about social impacts and need for stakeholder involvement in Indian and Ugandan bioenergy production. Heru Komarudin, CIFOR, analyzed expanding oil palm plantations in Indonesia's Papua region, finding that while some communities enjoyed



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Jennifer Harrison, Newcastle
University

economic and social benefits from such plantations, others experienced restrictions on or loss of traditional land uses. Yufang Su, ICRAF, China, discussed energy challenges facing China and options for developing forest-based energy in the country. She recommended that policy focus on, and



Yufang Su, ICRAF, China

support research and development of, decentralized wood-based energy technology as well as implementation of small to medium-scale bioenergy projects. Jolien Schure, CIFOR, reported that fuelwood is the main source of energy in the Democratic Republic of Congo, even among large urban populations. She said this decimates local forests and

policies must be developed to reconcile tradeoffs between environment and livelihoods.

ASIA'S FORESTS FOR THE FUTURE

Seventeen technical sessions were held in which participants discussed: recreation management in protected areas: Asian perspectives; biology, ecology and management of *Pinus koraiensis* in East Asia; and advances in plantation forest management in Asia.

CHALLENGES AND ISSUES OF FOREST MANAGEMENT AND UTILIZATION IN ASIAN COUNTRIES: On Tuesday, Matti Palo, independent scientist, discussed deforestation and poverty challenges in the Democratic People's Republic of Korea, Mongolia and tropical Asian countries. He reviewed deforestation drivers, an empirical model assessing poverty and ecological drivers, and the difficulty of acquiring relevant data. Ho Sang Kang, Seoul National University, discussed an ecotourism training programme as one possible approach to addressing the challenges to Indonesia's forests.

Dar-Hsiung Wang, Taiwan Forestry Research Institute, discussed Japanese cedar plantations in Taiwan, linking them to Japan's occupation of Taiwan and a forest management paradigm prioritizing the replacement of "unproductive" native forests with "productive" plantations. Shirong Liu, Chinese Academy of Forestry Sciences, reviewed China's 2003 forest governance reforms, including transforming collective ownership into private



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Shirong Liu, Chinese Academy
of Forestry Sciences

ownership, and underscored China's low forest productivity and forest area per capita, and the damages caused by pests, diseases and invasive species.

Juan Chen, University of British Columbia, discussed China's national forest protection and conversion of cropland back to forest programmes. Despite successes with afforestation of degraded lands, she noted challenges regarding unemployed forest workers and in ensuring the longer-term vitality of planted forests.

Nabaghan Ojha, Regional Centre for Development Cooperation, India, discussed the evolution of Indian forests and forest laws, including provisions for participatory forest management and the Forest Rights Act that recognizes rights of forest dwelling peoples, stressing implementation challenges.

Mohammad S.H. Chowdhury, Shinshu University, Japan, described the use of medicinal plants in 36 Bangladeshi villages surrounding the Rema-Kalenga Wildlife Sanctuary, and made recommendations on balancing community and conservation needs.

MANAGING ASIAN BAMBOO FOREST IN A CHANGING WORLD:

On Wednesday, Jian Gao, International Center for Bamboo and Rattan, China, reviewed water quality problems in China's Chaohu Lake. Drawing on field plots, she said bamboo forests are useful for water conservation and reducing pollutant runoff because they retain more water in the litter layer than other forest types. Masaharu Sakai, Forestry and Forest Products Research Institute, Japan, detailed a study of soil and water conditions in bamboo and conifer forests, and explained the problem of bamboo encroachment lowering soil moisture content owing to higher water transportation in bamboo stands.



Masaharu Sakai, Forestry and Forest Products Research Institute, Japan

Yueqin Shen, Zhejiang Forestry University, drew on a household survey to discuss how different management



Ramasamy Yasodha, Institute of Forest Genetics and Tree Breeding, India

approaches for bamboo affect economic benefits, local employment opportunities, and income distribution in China. Ramasamy Yasodha, Institute of Forest Genetics and Tree Breeding, India, noted high demand for bamboo is complicated by its unpredictable reproductive cycle, limiting production. She explained the intricacies of in vitro micropropagation and said

Bambusa nutans works well with these methods, but stressed that costs limit commercial production.

Benzhi Zhou, Zhejiang Forestry University, said bamboo is China's most important forest type, and reviewed its carbon sequestration properties. He discussed dry-weight biomass and carbon content to soil depth of 60 cm of a *Dendrocalamopsis vario-striata* plantation, finding 95.5 tonnes of carbon per hectare, with a third captured in plant biomass and two thirds by soil. Guomo Zhou, Zhejiang Forestry University, discussed carbon storage capacity of *Phyllostachys pubescens*, an economically important bamboo and said its carbon storage capacity can increase up to 40 fold in one month due to its quick growth rate.

FOREST PRODUCTS AND PRODUCTION PROCESSES FOR GREENER FUTURE

Ten technical sessions were held under this theme on topics including: green forest products marketing and business management; value chain optimization in the forestry industry context; and sustainability impact assessment of the forest based materials to promote sustainability.

GREEN FOREST PRODUCTS MARKETING AND BUSINESS MANAGEMENT: On Friday, Bob Smith, Virginia Tech, said the hardwood industry was slow to adopt the "greening" movement, which is perceived as more regulation. He discussed low interest in green products among US consumers, and that companies know more about forest certification than green building initiatives. Lei Wang, University of Helsinki, said corporate social responsibility (CSR) is a western concept and has not done well in the Chinese market. He proposed a culturally recognizable approach to CSR that draws on Confucianism and Taoism.

Masami Shiba, University of Kyoto, said 4.3% of Japanese forests are certified, mostly through the Forest Stewardship Council (FSC), but that Japan accounts for roughly 10% of all global chain of custody certificates. He said market demand and societal expectations were key drivers of corporate interest



Masami Shiba, University of Kyoto

in certification. Francisco Aguilar, University of Missouri, detailed a study of how product origins, certification agencies, and timber prices affect market shares and UK and US consumer preferences. He noted that, *inter alia*, government agency and NGO certifications were favored in the UK, and that government schemes and temperate forest products were favored in both countries.



Francisco Aguilar, University of Missouri

Ashlee Tibbets, Oregon State University, reported on interviews with US and Australian architects, engineers, builders and developers probing environmental impacts of building materials. She said interviewees felt the use of timber is a "double-edge sword," bearing environmental benefits but also historical conflicts over forest practices. Alison Kriscenski, FSC, emphasized that certification is more than verifying practices as it involves a multi-stakeholder governance process for deliberating forest management issues. She highlighted challenges FSC faces in communicating its benefits to consumers and called for research directed to improving FSC's work.

EMERGING TECHNOLOGIES IN THE FOREST SECTOR

Eleven technical sessions were held under this theme on topics including: detecting, monitoring and modeling forest fire and carbon emission using remote sensing; and biotechnology applications in forest breeding and plantation management.

MANAGING THE DATA DELUGE: THE CHALLENGE OF EMERGING TECHNOLOGIES:

On Friday, Roger Mills, Oxford University, stressed the need for data-management toolkits built upon a short- and long-term strategy for maintaining, managing and using data. Margaret Sraaku-Lartey, Forestry Research Institute of Ghana, stressed the need for institutional repositories to preserve forestry information. She described the potential for establishing such a repository in her institute, sketched its contents and possible users, and stated that it ought to concentrate on intellectual knowledge, electronic publishing and open access.

Stella Britwum Acquah, Forestry Research Institute of Ghana, introduced an on-line gateway established by the Forestry Research Network for Sub-Saharan Africa for exchanging forestry and natural resource information in the sub-region. Vanda Santos, FAO, outlined FAO's web-based forestry education platform, which serves as a repository for forestry education materials, and links to national, regional, and global forest information and reviewed its work in Central America and the Caribbean.



Vanda Santos, FAO

Andrea Wirth, Oregon State University, discussed the Oregon Spatial Data Library, which provides access to GIS data created and managed by the State of Oregon. She reviewed the library's searching mechanisms and a new "clip, zip and ship" option that allows users to download small parts of GIS layers.



Andrea Wirth, Oregon State University

Mills, for Gillian Petrokofsky, Oxford University, outlined many biases that affect decision-making and discussed evidence-based forestry as a corrective. This approach, he said, involves systematic attention to defining our questions, reviewing the relevant evidence, and disseminating of results. He stressed that the review needs to be rigorous, peer-reviewed, transparent, and repeatable.

Randy McCracken, US Forest Service, said the guiding principle of web design should be: "give the users what they want, and don't create obstacles."

FRONTIERS IN FOREST AND TREE HEALTH

On this theme, 20 technical sessions were held on topics including: damage caused by insect pests, pathogens and air pollution; invasive species; and climate change.

ADVANCES IN FOREST PEST SURVEILLANCE AND MONITORING:

On Wednesday, Olle Anderbrant, Lund University, talked about forest insects in pest control and conservation and the use of pheromone bait trap-catch at large scales. Richard Hofstetter, Northern Arizona University, said trap-catch yields correlate with infestation density, meaning that trap-catch may be a good large-scale predictor of beetle abundance and tree mortality. Hongbin Wang, Chinese Academy of Forestry, described research to identify beetle population density at different elevations and cardinal directions in a forest using pheromone bait methods. Steven Seybold, US Forest Service, reviewed invasive beetle populations, explaining that an "improved" rather than commercial pheromone bait showed better empirical results than models predict.



Olle Anderbrant, Lund University

Robert Rabaglia, US Forest Service, presented on an early detection and rapid response project that had identified 10 high-risk bark beetle species. He said traps baited with either



Zhen Zhang, Chinese Academy of Forestry

Research Institute, reported the work of his research team in the construction of a Korean Forest Insect Pest DNA barcode



Wonhoon Lee, Korea Forest Research Institute

database. He noted that DNA barcoding has potential applications in insect pest monitoring and quarantine.

species-specific pheromones or generally attractive host volatiles are monitoring high-risk sites in 17 states. Zhen Zhang, Chinese Academy of Forestry, presented work on detecting and trapping the red turpentine beetle introduced to China from North and Central America and the damage it inflicted on the Chinese pine.

Wonhoon Lee, Korea Forest Research Institute, reported the work of his research team in the construction of a Korean Forest Insect Pest DNA barcode database. He noted that DNA barcoding has potential applications in insect pest monitoring and quarantine.

Natalia Kirichenko, Institute of Forests, Russian Federation, detailed work to identify poorly known pests and diseases that, if introduced to Europe or North America, may present a threat. Choi Won IL, Korea Forest Research Institute, reported

findings of a study conducted by his research group on the occurrence and distribution of invasive insect pests in Republic of Korea after 2000.

FORESTS, COMMUNITIES AND CULTURES

On this theme, 23 technical sessions were held on topics including: the importance of traditional knowledge in forest management and biodiversity; community management of forests; the role of small-scale forest-based enterprises; and emerging issues and opportunities for forest users in the trend towards decentralized forest management.

INCOME FROM SMALLHOLDER FORESTRY – CAN IT BE A DRIVER OF POVERTY ALLEVIATION?:

On Monday, Divine Foundjem-Tita, Ghent University, discussed how creating institutional arrangements for informal NTFP markets can improve livelihoods of farmers in Cameroon through increased point of sale prices, market certainty and bargaining power.

In two case studies, Verina Ingram, CIFOR, found only small financial benefits and even economic losses arise from shifting to communal forest usage in some cases, but estimated that communal farming is more sustainable than traditional methods in Cameroon. Dede Rohadi, CIFOR, discussed the role of teak harvesting in income generation, and introduced a tree valuation system to ensure smallholders receive fair market prices. He concluded that though teak is financially feasible it is often not the best source of income for smallholders.




Kazuhiro Harada, University of Hyogo

Kazuhiro Harada, University of Hyogo, highlighted that small group timber certification can play a role in poverty alleviation in Indonesian communities by providing financial support, income security, and reducing in illegal logging due to improved income from certified products. Aziza Rbivate, University of Johann Heinrich von Thünen-Institut, analyzed the Malagasy

forest fringe and the development of adaptation incentives in the context of REDD. She noted that motivations to deforest or degrade forests are highly dependent on social and economic structures, and that these should form the basis of any REDD related incentives or alternatives.

Kazi Kamrul Islam, Kyushu University, talked about how participatory agroforestry in Bangladesh is hindered by: bureaucracy; monopoly market structures; poor infrastructure; and exploitation by middlemen.

Shoana Humphries, FSC, expounded on the economic feasibility of community-based forest enterprises in Brazil. She found that although these enterprises can be successful, donors must incorporate options for long-term support in order to alleviate poverty sustainably. Sushila Kumari Thapa Magar, ForestAction, discussed community forest enterprises in Nepal, noting their success is a function of appropriate regulation, stakeholder participation in decision-making and project ownership. Ousseynou Ndoeye, FAO, discussed the need for regulatory policy reform in the development of NTFP enterprises in Central Africa. He highlighted that current use-right law criminalizes the sale of NTFPs by smallholders and that mid-level corruption creates financials burden for smallholders.

CONTRIBUTION OF POLITICAL THEORY TO POLICIES FOR SUSTAINABLE USE OF FOREST RESOURCES:

On Saturday, Bas Arts, Wageningen University, compared five theories used in policy sciences and assessed their use in forest policy research: the advocacy coalition framework; network analysis; and rational, institutional and critical policy analyses. Wil De Jong, Kyoto University, introduced the idea of "territorialization," the process of imposing territorial control over, resources or people, in pursuit of national increased security. He examined this process in the Bolivian Amazon, a porous territorial border over which the Bolivian government is attempting to exert increasing territorial control.



Bas Arts, Wageningen University

Mistuhiro Nose, Research Institute for Humanity and Nature, Japan, analyzed financial constraints facing the Japanese forest administration and its impacts on forest sector productivity. He said forestry investment has not been successful in improving economic productivity and advocated for directed investments to enhance the viability of certain local forest areas. Dodik Ridho Nurrochmat, Bogor Agricultural University, presented three practical options for converting political theory on green fiscal policy into practice in Indonesia: implement PES via a conservation fund; enforce the liability rule through revision of fiscal balance law; regulate the mechanism for purchasing land use rights; and greening the gross domestic product calculation.

Bruno Salomon Ramamonjisoa, University of Antananarivo, illustrated the relevance of sociocultural institutionalism to forest policy management in Madagascar, which, he said, is a way to better integrate local knowledge into policy. Olufunso Somorin, CIFOR, presented three climate policy discourses: mitigation policy only; adaptation and mitigation policy separately; and integrated adaptation and mitigation policy. He proposed that the separatist policies of the North and South cause political problems in the analysis of climate change solutions.

FORESTS, HUMAN HEALTH AND ENVIRONMENTAL SECURITY

On this theme, eight technical sessions were held on topics including: the interrelationships between forests and human health; the impacts of environmental changes on the well-being of social groups in and around forests; and the role of forests in promoting community health, security and well-being.

HEALTH BENEFITS OF FORESTS: On Tuesday, Si Hyung Lee, Comprehensive Research Institute for Korea Natural Medicine, proposed that a 2-3 day wilderness retreat may positively increase levels of human serotonin, a neurotransmitter which reduces depression, eating disorders and aggression. Kjell Nilsson, University of Copenhagen, presented on the role of the environment in healthy lifestyles. He mentioned that several international working groups are evaluating forests' role in the prevention of illness and its effect on mental status. Tatsuya Kushida, NalaPro Technologies, summarized biochemical research on flavonoids, substances contained in tree bark, amongst others, which have been found to improve human immune function.

Nor Azah Mohamad Ali, Forest Research Institute Malaysia, presented her institute's work on bioprospecting, i.e. the search for applications, processes or products in nature with useful health benefits. She said her team assists in the development, and quality and safety assurance, of products for cosmetics and toiletries manufacturers, especially lotions and creams, anti-inflammatory agents and mosquito repellants. Julius Adebayo John, Forest Research Institute, Nigeria, talked about perceptions and use of traditional herbal medicines in Nigeria, the popularity of which is returning as health risks of fake pharmaceuticals become more apparent. He recommended that policy-makers take steps to formally recognize herbal medicines and encourage their use.

SPECIAL EVENTS

FIELD TRIPS

On Thursday participants braved the rainy, foggy weather and headed into the field on eight trips organized to illustrate innovative forest-related projects around the Republic of Korea. Of the eight field trips, IISD RS covered two: Landscape Restoration and Sub-alpine Forest; and Old-aged Natural Forests and Landfill Restoration. The remaining field trips included excursions about: a protected area for biological diversity; non-timber forest products (NTFPs); conservation and utilization of forest genetic resources; forests and human health; SFM and the ecosystem approach; and the wood processing industry.



IUFRO participants in an excursion to the World Cup Park, a landfill site turned Eco-Park

IUFRO PRESIDENT'S DISCUSSION: FUTURE CHALLENGES FOR FOREST EDUCATION:

On Wednesday, Florent Kaiser, IFSA, lamented that current forestry curricula lack: practical learning opportunities for students; adequate global focus; and student exchange opportunities. Yoon Soo Kim, Chonnam National University, said forestry graduates worldwide have declined by 30% since the 1990s, and that students cannot find jobs after graduation because current university programs are not matched to modern demands. He suggested a three-year technical education as more relevant.

Hosny El-Lakany, University of British Columbia, criticized that although forestry is now high on the global agenda, foresters are not adequately incorporated into these discussions. He highlighted the need for, *inter alia*: halting over-specialization of departments; and increased national and international collaboration. Emmanuel Ze Meka, ITTO, emphasized that, in reality international agreements are often constrained and undermined by sovereignty issues, and said although their overall impact has been questionable, their role and relevance is becoming more central due to concerted international efforts to resolve global problems.

Hideki Nose, Sumitomo Forestry Group, said highly specialized students often lack comprehensive judgment on contemporary forest industry issues and it must be remembered that one "cannot see the forest by only looking at the trees." Gerald Steindlegger, WWF, said forestry must change to demonstrate "it no longer serves only a sector but an entire landscape— of values and people." He also noted that primary drivers of deforestation lie outside the forest sector and that, therefore, SFM alone is not the answer.

CLOSING CEREMONY

On Saturday, the ceremony opened with a medley of songs sung by Lee Tae Won, singer and actress, accompanying a video compilation of Congress highlights.

Jung-Hwan Park, Chair of the Congress Organizing Committee, thanked the government of the Republic of Korea and the Korea Forest Research Institute for their contributions, and acknowledged efforts of: John Parrotta, Chair of the IUFRO Congress Scientific Committee; IUFRO President Don Koo Lee and the IUFRO team; the Korea Forest Service; and all participants and exhibitors. He also acknowledged IUFRO for financing participation of 182 developing country participants.

Su See Lee, IUFRO Board member, then announced the IUFRO 2010 Best Poster Award winners:



Korean musician and actress Lee Tae Won entertained participants during the closing plenary of XXIII IUFRO World Congress

- Pifeng Lei, University of Freiburg: Belowground niche separation and productivity in tree species mixtures;
- Yoshihiro Hosoo, Shinshu University: Isolation and analysis of a gene encoding a potassium membrane transport protein from *Cryptomeria japonica*;
- Sungcho Choi, Korea University: Predicting the changes in forest distribution using the thermal and hydrological indices;
- Lee Su-Yeon, Seoul National University: Analysis of terpenoids released during the drying process of *Cryptomeria japonica*;
- Maija Faehnle, Finnish Forest Research Institute: Evaluating the use of social information in urban forest planning;
- Takahashi Yukiko, University of Tokyo: Genetic diversity of the pathogen of Japanese oak wilt, *Raffaelea quercivora*, in the gallery bored in an oak tree, and mycangia of the ambrosia beetle, *Platypus quercivorus*; and
- Ahn Young San, Korea Forest Research Institute: Historical change in sediment yield in Lake Toro catchment, Kushiro-mire, northern Japan, over the past 300 years.

Don Koo Lee announced that the IUFRO International Council had met and adopted the 2010 Congress Resolution and approved its new Council members. Risto Seppälä and Eric Teissier du Cros were acknowledged as honorary Council members. He then revealed that the 2014 XXIV IUFRO World Congress will be held in Salt Lake City, Utah, USA.

Parrotta presented the 2010 Congress Resolution, stating that IUFRO will strive to promote the themes of: forests for people; climate change and forestry; bio-energy; forest biodiversity conservation; forests and water interactions; and forest resources for the future. The Resolution also commits IUFRO to:

- improving communication within and outside of IUFRO;
- expanding work on the science-policy interface;
- renewing and strengthening forest monitoring activities;
- expanding the IUFRO membership; and
- promoting high-quality forest-related research and interdisciplinary cooperation.

Incoming IUFRO President Niels Elers Koch introduced the new Board of Directors and President's nominees. He acknowledged the accomplishments of Don Koo Lee. In closing, Koch highlighted the strength and dedication of



L-R: Risto Seppälä and Eric Teissier du Cros, received Honorary memberships to IUFRO from IUFRO President Don Koo Lee and Peter Mayer, IUFRO



IUFRO President Don Koo Lee handed over the IUFRO flag to Ann Bartuska, US Forest Service on behalf of Salt Lake City, US, the host of the XXIV IUFRO World Congress

IUFRO's international network and volunteers, and called on members to "look outside the forest box," across sectors and at the science-policy interface.

IUFRO President Lee handed over the IUFRO flag to Ann Bartuska, US Forest Service, who invited participants on behalf of the host city Salt Lake City to the XXIV IUFRO World Congress in 2014.

President Lee delivered closing remarks, expressing his appreciation to participants for their contribution to the success of the Congress, and closed the Congress at 5:15pm.

UPCOMING MEETINGS

Workshop on Forest Governance, Decentralisation and REDD in Latin America: This workshop will discuss regional perspectives on REDD and help prepare for the 9th session of the UN Forum on Forests. **dates:** 31 August - 3 September 2010 **location:** Oaxaca, Mexico **contact:** Claudia Greco, Intercooperation **phone:** +41 31 385 10 60 **email:** claudia.greco@intercooperation.ch **internet:** <http://www.cifor.cgiar.org/Events/CIFOR/decentralisation-redd.htm>

Japan-CARICOM Public Symposium on Climate Change and Biodiversity: This symposium will bring together the foreign ministers of CARICOM's 15 member countries and explore further cooperation between CARICOM and Japan. **date:** 2 September 2010 **location:** Tokyo, Japan **contact:** Yaeko Higo, UNU-ISP **phone:** +81-(0)3-5467-1212 **fax:** +81-(0)3-3499-2828 **email:** higo@unu.edu **internet:** http://unu.edu/events/#caricom_201009

Seminar on the Vulnerability of International Trade to the Carbon Footprint: This seminar will examine the possible impacts of the "carbon footprint" on trade in Latin America and the Caribbean.

dates: 2-3 September 2010 **location:** Santiago, Chile **contact:** Joseluis Samaniego **phone:** +56-2-210-2291 **email:** joseluis.samaniego@cepal.org **internet:** <http://www.eclac.org/default.asp?idioma=IN>

Workshop on a Practical Guide for Integrating Climate Change into National Forest Programmes: This workshop will bring together results from four previous workshops in Cambodia, Paraguay, South Africa and Tanzania to develop generic guidelines for integrating climate change into national forest policy. **dates:** 20-21 September 2010 **location:** Rome, Italy **contact:** Jerker Thunberg **fax:** +39 06 570 55137 **email:** Jerker.Thunberg@fao.org **internet:** <http://www.nfp-facility.org/63721/en/>

Workshop on Improving the Regional Distribution of CDM Projects in Asia and the Pacific: This workshop aims to actively increase the number of Clean Development Mechanism (CDM) projects in countries currently hosting fewer than ten registered CDM projects. **dates:** 8-9 September 2010 **location:** Manila, Philippines **contact:** Alma Cañarejo **email:** acanarejo.consultant@adb.org **internet:** <http://www.adb.org/>

International Seminar on the Role of Agrobiodiversity in Addressing Hunger and Climate Change: This seminar will highlight the role of agricultural biodiversity for food security in the context of climate change and the importance of international cooperation for its protection and sustainable use. **dates:** 13-15 September 2010 **location:** Cordoba, Spain **contact:** International Treaty on Plant Genetic Resources for Food and Agriculture Secretariat **phone:** +39 06 570 53441 **fax:** +39 06 570 56347 **email:** pgrfa-treaty@fao.org **internet:** http://www.planttreaty.org/gbnex_en.htm

Global Expert Workshop on Biodiversity Benefits of Reducing Emissions from Deforestation and Forest Degradation in Developing Countries: This workshop supports the efforts of parties in addressing Reducing Emissions from Deforestation and forest Degradation in developing countries (REDD) in the framework of the UN Framework Convention on Climate Change (UNFCCC) in a way that contributes to the implementation of the CBD programme of work on forest biodiversity. **dates:** 20-23 September 2010 **location:** Nairobi, Kenya **contact:** CBD Secretariat **phone:** 1-514-288-2220 **fax:** 1-514-288-6588 **email:** secretariat@cbd.int **internet:** <http://www.cbd.int/doc/?meeting=EWREDD-01>

World Habitat Day 2010: The theme of this event is "Better City, Better Life." **dates:** 5 October 2010 **location:** Shanghai, China **contact:** The Coordinator, World Habitat Day **phone:**



Niels Elers Koch, President elect of IUFRO, introduced the members of the new IUFRO Board

(254 20) 762 5311 fax: (254 20) 762 3477 email: whd@unhabitat.org internet: <http://www.unhabitat.org/categories.asp?catid=643>

UNECE Timber Committee Market Discussions and Policy Forum: The forum, under the theme “Innovative Wood Products are the Future,” will address: wood energy, carbon markets and certified forest products markets, and the role of wood products in mitigating climate change. **dates:** 11-15 October 2010 **location:** Geneva, Switzerland **contact:** UNECE Forestry and Timber Section **phone:** +41-22-917 1286 **fax:** +41-22-917 0041 **email:** info.timber@unece.org **internet:** <http://timber.unece.org/index.php?id=302>

5th Latin American Carbon Forum: This forum promotes knowledge and information sharing on the CDM while facilitating business-opportunity environments among main carbon market stakeholders. **dates:** 13-15 October 2010 **location:** Santo Domingo, Dominican Republic **contact:** Miriam Hinostroza **email:** milh@risoe.dtu.dk **internet:** <http://www.latincarbon.com/2010/english/index.htm>

CBD COP 10: This meeting is expected to assess progress on the 2010 target to reduce significantly the rate of biodiversity loss, adopt an international regime on access and benefit-sharing and celebrate the International Year of Biodiversity 2010. **dates:** 18-29 October 2010 **location:** Nagoya, Japan **contact:** CBD Secretariat **phone:** 1-514-288-2220 **fax:** 1-514-288-6588 **email:** secretariat@cbd.int **internet:** <http://www.cbd.int/meetings/>

UNECE Forum on the Potential of Forests in Europe for Climate Change Mitigation and Adaptation: **dates:** 22-24 November 2010 **location:** Geneva, Switzerland **contact:** UNECE Secretariat **phone:** +41(0)22 917 44 44 **fax:** +41(0)22 917 05 05 **email:** info.ece@unece.org **internet:** <http://www.unece.org/meetings/meetgen.htm>

International Conference on Forestry Education and Research for the Asia-Pacific Region: This conference aims to assess the state of forestry education and research in the Asia-Pacific, identify priorities, and make recommendations on future goals. **dates:** November 23-25, 2010 **contact:** Forestry Development Center, University of the Philippines **location:** Laguna, Philippines **email:** fored2010@uplb.edu.ph **phone:** +63 49 536-3097 | 536-2341 **internet:** <http://www.jericotolentino.com/fored.uplb.edu.ph/>

Forest Day 4: This event will be held alongside the 16th session of the Conference of the Parties to the UNFCCC. **dates:** 5 December 2010 **location:** Cancun, Mexico **internet:** <http://www.cifor.cgiar.org/Events/ForestDay4/>

46th meeting of the International Tropical Timber Council: This meeting will take place together with associated sessions of the four committees. **dates:** 13-18 December 2010 **location:** Yokohama, Japan **contact:** ITTO **phone:** 81-45-223-1110 **fax:** 81-45-223-1111 **internet:** <http://www.itto.or.jp>

9th Session of the UN Forum on Forests: The theme for UNFF 9 is ‘Forests for people, livelihoods and poverty eradication’ and the forum is expected to complete discussions on approaches for implementing sustainable forest management. **dates:** 24 January - 4 February 2011 **location:** New York, USA **contact:** UNFF Secretariat **phone:** 1-212-963-3401 **fax:** 1-917-367-3186 **email:** unff@un.org **internet:** <http://www.un.org/esa/forests/>

XXIV IUFRO World Congress: The XXIV IUFRO World Congress location and approximate date was announced at the close of the XXIII Congress, further details are currently unavailable. **dates:** August 2014 **location:** Salt Lake City, Utah, USA **internet:** <http://www.iufro.org/>

GLOSSARY

CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
FAO	Food and Agriculture Problem of the United Nations
FES	forest environmental services
FGR	forest genetic resources
FSC	Forest Stewardship Council
PES	payment for environmental services
ITTO	International Tropical Timber Organization
IUFRO	International Union of Forestry Research Organizations
MDGs	Millennium Development Goals
NTFP	non-timber forest product
REDD	reducing emissions from deforestation and forest degradation
SFM	sustainable forest management
UNFF	United Nations Forum on Forests



Children reminding Congress participants that children are the future