In the morning, participants met in plenary followed by eight parallel sessions and a poster session. In the afternoon a four hour forum was held on forests and energy which consisted of three panels and a show of hands at the end of the forum on the question: will the development of bioenergy be good or bad for the forest sector? The result was inconclusive, with participants being divided fairly evenly in their opinions. Numerous side events also took place throughout the day.

**José Carlos Carvalho**, Secretary of Environment and Sustainable Development from the State of Minas Gerais, Brazil, called for a strong assertion of SFM principles from the forestry sector to the climate change meetings in Copenhagen to end inconclusive international dialogues. He said a new paradigm in forest management requires interdisciplinary, integrated approaches incorporating environmental, social and economic aspects. He cautioned however, that as long as standing forests remain less valuable than cleared lands, generating change would be arduous. He stressed that only by recognizing the value of ecosystem services provided by forests in public policy, international markets and fora, will SFM be realized.

**Jan McAlpine**, Director, UNFF, said a cross-sectoral approach is needed to manage forests for sustainable development. She said the NLBI adopted by the UNFF in 2007 is a milestone in the global forest dialogue, and that after many years of discussion, all UNFF member countries agreed in 2009 to a four-year process on forest financing. In this regard, the UNFF Secretariat has started a facilitative process to analyze existing financing mechanisms, identify gaps and suggest innovative approaches. She urged the forestry community to look beyond REDD and forest carbon benefits, and recognize all the values of forests to forest-dependent communities.

**David Carter**, Minister of Agriculture, Biosecurity and Forestry of New Zealand, described key environmental, economic and social challenges of deforestation, and the threat to forests from fires, storms, pests, and diseases associated with...
climate change. He discussed the effects of illegal logging on timber prices and carbon emissions, and risks to forests from an increasing number of houses and farms due to population growth. He noted that public awareness is increasing regarding benefits provided by forests for: storing carbon; purifying water; and replacing petroleum products with innovative wood products and fossil fuels with bioenergy.

In the ensuing discussion, Carvalho said the WFC should mobilize public opinion in order to persuade politicians of the importance of forests. Carter said strong cooperation between developed and developing countries is needed if progress on climate change and forests is to be achieved. Regarding the possibility of a legally-binding agreement on forests, McAlpine urged implementation of existing agreements, including the NLBI, and working to ensure that all relevant instruments and institutions, such as the CBD, UNFCCC and FAO, work collaboratively.

### SELECTED PARALLEL SESSIONS

#### 1.2 DEFORESTATION AND FOREST FRAGMENTATION

Mette Loyche Wilkie, FAO, gave a global overview of status and trends in deforestation and forest loss and main drivers of deforestation. She said the data shows that deforestation is continuing at an alarming rate globally, but the net rate of forest loss has diminished due to replanting and natural expansion of forests. She noted that deforestation drivers vary regionally, with poverty and food insecurity leading in Africa, large-scale commercial agriculture in Latin America and a mix of these in Asia, respectively. She concluded that “Zero Deforestation by 2020” is unrealistic, and that some of the agricultural expansion needed to feed increasing numbers of hungry people will occur at the expense of forests.

Steffen Fritz, International Institute for Applied Systems Analysis, Austria, presented work on a cross-border deforestation index based on satellite and other land-use data, which can be used to: understand underlying drivers of deforestation; rank countries; and help compare similar areas. He gave examples of starkly contrasting trends in cross-border deforestation in Africa, Latin America and South East Asia.

Valerie Kapos, UNEP-WCMC, presented the development of measures to identify trends in forest fragmentation and assess biodiversity-relevant fragmentation. She said fragmentation reduces the ability of forests to support biodiversity and to provide ecological services, and that its effects differ among landscapes and taxa.

Valentina Robiglio, consultant, reported the shifting cultivation patterns of smallholders in Cameroon as measured by Geographic Information Systems (GIS) methodology over a 50-year period. She described how forests are cleared for crops and land reverts back into forests when areas lie fallow for a few years. This reduces net forest loss, she said, and needs to be accounted for in REDD programs.

Ririn Salwa Purnamasari, World Bank, analyzed small-scale deforestation in Indonesia by overlaying maps of deforested areas with maps based on poverty surveys. She indicated that transport and market access of small producers affects deforestation.

Discussion centered on methodological questions, and the moderator proposed that the panel make recommendations. Panel members suggested that: policymakers use cross-sectoral land-use planning with the participation of local communities, and that REDD+ be included as a mechanism to maximize benefit valuation of forest ecoservices.

#### 2.2 PLANTED FORESTS

Rubens Garlipp, Sociedade Brasileira de Silvicultura, said planted forests provide 40% of global supply of wood, and noted a large proportion of the world’s forests are state owned. He emphasized the need to overcome ideological conflicts to present a good case for planted forests within the ongoing international negotiations on climate change, highlighting that planted forests are a strategic vector of sustainable development.

Frederick Cubbage, North Carolina State University, USA, presented research exploring investments in forest plantations. He said it focused primarily on Latin America, where investment is hindered, despite high rates of return, by high costs of doing business stemming from, *inter alia*, complicated regulations, and political and other risks. He said while substantial environmental protection legislation exists in most nations, implementation and enforcement problems are hindering the realization of SFM.

Brad Sanders, APRIL, Indonesia, said mosaic plantations are a way to confront the challenge of dwindling natural cover in rainforests. He provided an overview of measures to balance development, environment and commercial aspects of forestry, highlighting: certification, resolution of tenure conflicts with communities, research and development for improving water use and sequestering carbon, and risk management. He explained how mosaic plantations in Sumatra: include the creation of biological corridors; are able to conserve high conservation value forests; and use or rehabilitate low conservation value areas.
Héctor Arce, Fondo Nacional de Financiamiento Forestal, Costa Rica, presented the results of three decades of government subsidies and PES in Costa Rica. He noted an increase in demand for wood from planted forests, although harvest rates for planted forests have been reduced. Noting that changing agricultural demands are increasing opportunity costs of choosing forestry over other crops, he highlighted the need to reorient government support schemes to creatively address current challenges for the forestry sector.

6.2 INDUSTRY AND FOREST DEVELOPMENT

José Urtubey, Argentinian Forestry Association, presented the development of the forest industry sector in terms of sustainable development. Stressing the social, economic and environmental significance of the forest industry, including its potential contribution to climate change mitigation, biodiversity protection and the prevention of desertification, he urged wide, multi-stakeholder involvement to ensure that industrial development in the forest sector is environmentally sustainable. He said key challenges to achieving this are: putting in place proper institutional and legal frameworks; and ensuring the forest industry can meet increasing demands for sustainable forest products.

Daphne Hewitt, Rainforest Alliance, and Monica Castro, Global Consultants in Sustainable Development, Bolivia, presented a study of relationships between companies and communities in forest value chains, based on case studies conducted in 14 Latin American countries in which communities provide forest products to companies. They noted that the study looked for practical ways to incorporate communities into value chains in ways that would be successful for both parties. They concluded that factors determining success include: the financial and business management capacities of parties; high levels of trust; technical assistance; and a supportive environment, including appropriate policies and access to financing for communities.

Luis Díaz Balteiro, Polytechnic University of Madrid, Spain, presented an analysis of the sustainability of the European timber industry. He said the study ranked the sustainability of the timber industry in 17 EU countries, which represents about 70 percent of total EU timber production, on the basis of 40 indicators and parameters reflecting the social, environmental and economic dimensions of sustainability.

Władysław Strykowski, Director, Wood Technology Institute, Poland, presented activities of the Polish Technology Platform for the Forest and Wood Sector in a post-socialist state. He outlined the Platform’s history and activities, noting its key objectives are to help integrate the Polish forest sector into the world economy and to ensure its competitiveness and sustainability.

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**FORUM ON FORESTS AND ENERGY**

Adrian Whiteman, FAO, opened the Forum by projecting growth in bioenergy supply and changes away from predominant traditional uses for heating and cooking to biofuels such as biogas, ethanol and biodiesel. He said wood fuel power stations are already common, and outlined variables of bioenergy viability, including: waste usage; resource availability; crop type; and incentive policies.

**PANEL ON THE CURRENT STATUS OF TECHNOLOGY FOR WOOD ENERGY PRODUCTION**

Michael Jack, Scion, New Zealand, presented a study assessing the opportunities and challenges of large-scale bioenergy production from forests for New Zealand’s future energy requirements. He noted that the displacement of fossil fuels with forest biomass has land-use, economic and environmental implications. He said results showed that energy forests could significantly reduce GHG emissions and have macroeconomic benefits, but noted social aspects of land use must be considered, as economic competitiveness alone is not sufficient to convince farmers to change land use.

John Saddler, University of British Columbia, Canada, presented current stages of biorefining in the forestry sector.

He suggested Canada use the die-off of millions of trees, killed by pine beetles now surviving warmer winters brought on by climate change, for bioenergy; saying that otherwise, carbon will be emitted into the atmosphere through decomposition and forest fires. He also noted biomass and residues are geographically more evenly distributed than fossil fuels, and thus are a more “democratic” energy source. He explained that production of lignocellulosic ethanol should be commercially viable in the near future, noting research and development is spurring the sector, and remarked that development of bioenergy by-products is also key to making biorefining economically viable. Highlighting energy security and climate change as drivers for new policies for and investment in second generation biofuels, he reminded participants that “the stone age did not come to an end because of lack of stones...”

In the discussion, panelists responded to questions concerning: the implications of cellulosic ethanol for land use change and forests; bioenergy production for developing countries with expanding food production; and the use of...
biodiesel technologies for crude palm oil production in Malaysia, stressing that palm oil biodiesel could make an important contribution to combating climate change.

Derek Byerlee, World Bank, said land use for first generation biofuels is accelerating rapidly, threatening forests through direct and indirect land use changes. He noted biofuels could be potentially important for livelihoods in poor countries and presented the case of oil palm production as the most profitable, efficient, fast growing- but most controversial, feedstock for biodiesel. He noted that oil palm accounts for half of the forest conversion in Indonesia. He suggested ways to better manage biofuel-forest conflicts, inter alia to: improve governance of forestlands, reduce subsidies to non-sustainable biofuels, facilitate use of degraded lands, map land suitability for biofuel production; regularize land rights to reduce transaction costs; and implement certification schemes and codes of conduct.

In the discussion, one participant reflected on whether it made sense to refer to land for agriculture or forestry separately, and suggested looking at integrated land use assessments. Another participant asked for an example of sustainable palm oil production, with Byerlee responding that there are some examples of plantations in previously degraded lands, and Hoi noting current palm oil production in Malaysia is obtained from residual palm oil and thus is not affecting forests as a whole. A question was posed to the audience on whether increased bioenergy production is good or bad for forestry, with results showing a divided audience with similar levels of support for each side.

**PANEL ON BIOENERGY POLICIES AND MEASURES:**

Maria Michela Morese, Global Bioenergy Partnership (GBEP), FAO, highlighted GBEP’s role in providing a venue for dialogue and cooperation among countries and international organizations on the issue of bioenergy. She noted sustainability is one of GBEP’s main focus areas, for which it is developing a set of C&I, as well as a methodology to assess GHG reductions of biofuels for transport and solid biomass. She also mentioned studies currently underway investigating indirect land use change and bioenergy.

Jary Parviainen, Director of Research, Finnish Research Institute, explained the role of the Ministerial Conference on the Protection of Forests in Europe (MCPFE) in setting standards for bioenergy use. He recommended that MCPFE assess performance and verification of SFM standards in European countries, and strengthen SFM for mitigation of, and adaptation to, climate change.

Christer Segersteen, President, Confederation of European Forest Owners (CEPF), discussed bioenergy developments from the perspective of family forest owners. Noting that over 60% of forests in Europe are owned by families in mostly small-scale holdings, he said the EU’s decision to increase renewable energy use to 20% by 2020 from the current 8.5% represents a significant opportunity for forest owners, provided they increase forest production in a sustainable way, balancing forest production and biodiversity.