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Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## ASIA-PACIFIC FORESTRY COMMISSION

### TWENTY-SECOND SESSION

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## FORESTS AND CLIMATE CHANGE: ADAPTATION AND MITIGATION

### SECRETARIAT NOTE

## INTRODUCTION

1. The first commitment period of the Kyoto Protocol (2008-2012) recently began and intensive deliberations on the post-2012 arrangements were launched at the thirteen Conference of the Parties (COP13) of the United Nations Framework Convention on Climate Change (UNFCCC), held in Bali Indonesia in December 2007. Attention on forests' role in climate change mitigation and adaptation can be expected to increase in the coming years, providing both challenges and opportunities for the forestry sector.

## IMPACTS OF CLIMATE CHANGE ON FORESTS IN ASIA-PACIFIC

2. The Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC) concludes that global greenhouse gas (GHG) emissions are likely to continue to grow over the next few decades. The report further indicates that impacts in various parts of Asia are likely to include: decreased freshwater availability; increased risk of coastal flooding; increased pressures on natural resources and the environment; and more frequent floods and droughts. Risks for the Pacific include: increased incidence, intensity and impact of extreme weather events such as inundation, storm surge, erosion and other coastal hazards; reduced water resources; severe flooding and cyclones and increased invasion by non-native species.

3. Areas affected by warm spells and increased drought will be subject to land degradation, reduced yields of forests products, and increased risk of wildfires. Temperate and boreal areas may experience increased forest yields, but also increased insect outbreaks and dieback.

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## FORESTS AND CLIMATE CHANGE MITIGATION

4. IPCC AR4 identifies the following main mitigation options in the forest sector:
  - maintaining or increasing forest area through reduced deforestation and degradation and afforestation/reforestation;
  - maintaining or increasing stand-level carbon density through better forest management;
  - maintaining or increasing landscape-level carbon density through forest conservation and forest management measures;
  - increasing off-site carbon stocks in wood products; and
  - enhancing fuel substitution to reduce use of fossil fuels.

### *Afforestation and reforestation projects*

5. The Clean Development Mechanism (CDM) provides public and private entities in developed countries the opportunity to fulfill part of their emissions reductions obligations under the Kyoto Protocol by investing in “clean development” projects in developing countries. Within the land use, land use change and forestry sector, only afforestation and reforestation (AR) activities qualify for the CDM. However, AR CDM projects have been slow to materialize; as of March 2008, only one AR CDM project (in China) had been approved. Impediments to progress include relatively high transaction costs and complex modalities.

6. In 2005, UNFCCC adopted simplified modalities and procedures for small-scale project activities to promote projects involving low-income communities, and at COP13 UNFCCC decided to increase the limit on the size of small-scale AR projects.

7. Carbon markets for AR projects are developing through various trading schemes and funds, including those administered by the World Bank. Emerging voluntary carbon markets are growing rapidly and offer possibilities beyond CDM project types. As of mid-2007, forestry projects accounted for the largest share -- about 36 percent -- of the carbon credits sold on the voluntary carbon market.<sup>1</sup>

### *Reducing emissions from deforestation in developing countries*

8. According to IPCC, “forestry” accounts for 17.4 percent of global greenhouse gas emissions, a majority of which derives from deforestation. Emission reductions from reducing deforestation (or “avoided deforestation”) were not included in the CDM, mainly for technical and methodological reasons. This mitigation option is again under discussion in UNFCCC. A related COP13 decision encouraged Parties to strengthen and support efforts to reduce emissions from deforestation and forest degradation and to undertake related demonstration and capacity strengthening activities. It also called for further methodological work.

9. The World Bank launched the *Forest Carbon Partnership Facility (FCPF)* at COP13. The objectives of FCPF are to strengthen countries’ capacities to access a future system of financial incentives for reduced emissions from deforestation and degradation (REDD), and to pilot carbon finance transactions for “ready” countries before the post-2012 regime is in place.

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<sup>1</sup> K. Hamilton, R Bayon, G. Turner and D. Higgins. 2007. State of the voluntary carbon market 2007 – picking up steam . Ecosystem Market Place and New Carbon Finance. July 17, 2007. <http://www.ecosystemmarketplace.com/documents/acrobat/StateoftheVoluntaryCarbonMarket17July.pdf>

Envisioned “REDD-readiness” activities include training in the use of the IPCC’s Good Practice Guidance and other assistance for assessing and monitoring forest carbon, setting a REDD “reference level” (or baseline), and for developing strategies for reducing forest emissions. Six countries from the Asia-Pacific region (Lao PDR, Malaysia, Pakistan, Papua New Guinea, Indonesia and Vanuatu) have expressed interest to participate in FCPF (as of January 2008).

10. In addition, Australia’s Global Initiative on Forests and Climate was launched in March 2007, and the Government of Norway announced at COP13 its contribution of about US\$ 500-600 million annually over five years for efforts to reduce deforestation and forest degradation.

11. Initiatives to reduce emissions from deforestation and degradation may bring financial support for sustainable forest management (SFM). The wealth of existing experience, tools, approaches and partnerships in implementing SFM should be applied to deal with climate change challenges. IPCC has stressed the need for “comprehensive intersectoral programmes that combine measures to control deforestation and forest degradation with measures to increase agricultural productivity and sustainability.”

## CLIMATE CHANGE ADAPTATION AND FORESTS

12. Greater attention has been given to adaptation since UNFCCC at COP12 (Nairobi, November 2006) filled in many details of a five-year work plan launched two years before in Buenos Aires, and renamed it the *Nairobi Work Programme on Impacts, Vulnerability, and Adaptation to Climate Change*. The plan includes a series of workshops and reports from 2007 through 2009 on topics including climate data and modeling, adaptation tools and methods, climate variability and extreme events, and economic diversification.

13. Adaptation measures in forestry include efforts both to help reduce the impacts of climate change on vulnerable people and to adapt forest management practices to reduce the vulnerability of forests to climate change impacts. Forest policy responses and field activities in climate change adaptation appear to be limited and relatively *ad-hoc* as yet. A more systematic approach to the needs and opportunities for adaptation in the forest sector, as part of the overall forest policy and planning processes (i.e. national forest programmes) and in concert with mitigation efforts, is needed.

14. Various UNFCCC-designated funds are available to support countries’ adaptation measures, including three administered by the Global Environment Facility (GEF): the Least Developed Country Fund (LDCF), the Special Climate Change Fund; and the Adaptation Fund. The LDCF is earmarked for support to Least Developed Countries (LDCs) for the preparation and implementation of National Adaptation Programmes of Action (NAPAs). Seven of the 13 least-developed countries in Asia and the Pacific have prepared NAPAs.

15. In 2007, two additional funds were established: the GEF’s “Sustainable Forest Management” programme (a cross-cutting programme to support countries’ forestry efforts related to biodiversity, climate change and sustainable land management) and the Millennium Development Goals (MDGs) Achievement Fund of the Government of Spain and UNDP. In addition, UNFCCC reached agreement at COP13 on the management of the Adaptation Fund, which is supported by a two percent levy on projects generating emission credits through the CDM. A board was established to manage the fund; GEF was designated as the fund’s secretariat; and the World Bank as its trustee, on an interim basis.

## FORESTS AND BIOENERGY CONSIDERATIONS

16. Wood in various forms (fuelwood, pellets, charcoal, gas, black liquor) has traditionally been a major source of energy. Globally, about 50 percent of all wood harvested annually is used for energy. About 30 percent of all wood removals in East Asia and 80 percent in South Asia have been used for energy purposes (FRA 2005). According to the International Energy Agency (IEA), bioenergy (mostly generated from woodfuels) contributed about 11 percent to the global primary energy supply in 2003, with the trend still rising.

17. Bioenergy generated from biofuels (generic term for any fuels of biological origin) can contribute to stabilization of greenhouse gases, in particular CO<sub>2</sub>, in the atmosphere, and thus to climate change mitigation. As a result, the use of biofuels is encouraged and supported in many countries. Climate change issues, increasing fossil fuel prices and concern over energy security have triggered an increase in demand for liquid biofuels such as bioethanol and biodiesel produced from agricultural crops. A major biodiesel crop in Southeast Asia is oil palm.

18. Growing demand for palm oil for biodiesel production is resulting in the expansion of the area of oil palm plantations, at the expense of forested areas. However, there are increasing concerns over such forest conversion. A number of scientists doubt that the energy generation from liquid biofuels actually results in a net positive carbon emission balance, in particular, when peat swamp forests are converted to oil palm plantations.

## CONCLUSIONS

19. Climate change brings new challenges and opportunities to the forest sector: it is essential that forestry institutions are prepared and fully engaged in national and international discussions regarding forests and climate change mitigation and adaptation. Experience in SFM gained over the past few decades, including the existing voluntary codes and guidelines, represents a sound foundation ready to be deployed for rapid action in climate change adaptation and mitigation, including reducing emissions from deforestation and forest degradation.

20. Forest-related efforts in climate change mitigation can produce significant co-benefits in terms of ecosystem services and livelihoods support, but may have negative environmental and social side effects if poorly designed. Experience in climate change adaptation in the forest sector is limited and more research and systematic approaches are needed.

21. Forest-related adaptation and mitigation measures, including the reduction of emissions from deforestation, will need to address the forestry-agriculture interface and be integrated in national forest programmes.

## DISCUSSION ITEMS FOR THE COMMISSION

22. APFC members may wish to consider taking action and to provide guidance for FAO support on the following points:

- integrating climate change mitigation and adaptation measures in national forest programmes;
- strengthening countries' capacities for forest carbon monitoring, assessment and reporting;

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- establishing reference levels for reducing emissions from deforestation and forest degradation, including through support from FAO programmes on capacity building for national and global forest resources assessments;
  - developing adaptation projects in the forest sector and implementing demonstration activities for reducing emissions from deforestation and forest degradation;
  - compiling and disseminating information and organizing training related to forests and climate change, specifically to increase awareness of and access to funding opportunities;
  - assessing the trade-offs between different land-use options, e.g. forests and liquid biofuel crops;
  - assisting the Subsidiary Body for Scientific and Technological Advice of UNFCCC on methodological issues related to reducing emissions from deforestation and forest degradation; and
  - enhancing coordinated activities to support country efforts in forests and climate change, together with the UNFCCC Secretariat, other members of the Collaborative Partnership on Forests (CPF) and other partner organizations.