Session 17. Opportunities for combining adaptation and mitigation

Summary report

1. Past or present impacts of climate change on forests and the forest sector

- Reported periodic calamities of spruce budworm in intensively managed forests of Canada are projected to spread further north with global warming, making adaptation of ecosystems of balsam fir and spruce a necessity. The mountain pine beetle outbreak in Canada necessitates reactive adaptation in the form of salvage.
- The 2005 storms and floods inundated the coast of Guyana, causing damages representing 60 percent of GDP.

2. Future impacts of climate change on forests

Calamities will affect harvest levels, economic returns and carbon storage. Hydrology of the affected areas will change, e.g. rising soil water tables due to elimination of forest as biological pump.

3. Future impact of climate change on people and institutions

Acute calamities and bleak prospects in Guyana have motivated the serious offer to sell all of the countries forests under REDD (reduce emissions from deforestation and forest degradation) to obtain finances for the country's development. Effects of afforestation and reforestation in developing countries include effects on water yields, fuelwood supply and availability of grazing lands. Similarly, planned afforestation of wastelands in India will affect not only carbon storage, but the supply of services from this land to people. Even wastelands are utilized by someone.

4. Adaptation and potential management actions

Mitigation will only function in the long-term if forests are adapted. Therefore, even Clean Development Mechanism (CDM) projects need carefully planned anticipatory adaptation, such as species choice and thinning regime. In contrast to the mountain pine beetle, spruce budworm impacts can be modified by foliage spraying, salvage logging. An optimal regime to adapt harvest levels and carbon storage was developed by a linear programming approach that maximized economic returns and on- and off-site carbon storage. Even reactive adaptation needs to be planned in the form of contingency planning, so that the after effects of a calamity can be dealt with swiftly. Proceeds from salvage logging can be used for future adaptation. In A/R projects, adaptation must account for the needs of the local population, e.g. water, firewood, and grazing land.

5. Policy actions

Monitoring of carbon storage faces practical restriction in all pools besides standing biomass; other pools are usually just modeled or calculated with default values. Mitigation and adaptation needs to include neighboring sectors, such as agriculture, which may otherwise cause leakage.

Monitoring is also necessary under REDD - carbon stock estimates in the Guyana forest varied wildly. In developing countries, adaptation or mitigation in the forest sector may affect the entire

country and its development. Reactive adaptation, e.g. salvage of timber for fuelwood use, links mitigation of emissions with reactive adaptation.

A/R projects for mitigation could help people with environmental and social services. However, stringent rules curb A/R projects.