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## Reduced Emissions from Deforestation and Forest Degradation (REDD): A Climate Change Mitigation Strategy on a Critical Track

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### Abstract

According to UN-FAO/ECE's Forest Resources Assessment (FRA) 2005, the world's forests store 283 gigatonnes of carbon in their biomass. The FRA 2005 however also shows that the destruction of forests adds almost two billion tonnes of carbon to the atmosphere each year. Following recent discussions, there is hope that a mechanism for reduction of emissions from deforestation and forest degradation (REDD) will be agreed by the Parties of the UNFCCC at their 16<sup>th</sup> meeting in Mexico in 2010 as an eligible action to prevent climate changes and global warming in post-2012 commitment periods. While the potential of REDD has been widely discussed, minor attention has been drawn to the implication of uncertainties and costs associated with the estimation of carbon stock changes. Countries introducing a REDD regime in order to generate benefits need to implement sound monitoring and reporting systems and specify the associated uncertainties. The principle of conservativeness addresses the problem of estimation errors and requests the reporting of reliable minimum estimates (RME). Here the potential to generate benefits from applying a REDD-regime is proposed with reference to sampling and non-sampling errors that influence the reliability of estimated activity data and emission factors.

The presentation shows a framework for calculating possible carbon benefits by including assessment errors. After the identification of several assessment errors, theoretical, sample based considerations as well as a simulation study for five selected countries with low to high deforestation and degradation rates show that even minor assessment errors may outweigh successful efforts to reduce deforestation and forest degradation. This leads to the conclusion that the generation of benefits from REDD is possible only in situations where assessment errors are carefully controlled.

**Keywords:** Deforestation, degradation, error, estimate, monitoring, REDD, RME, uncertainty