



Workshop on Vulnerability of Carbon Pools of Tropical Peatlands in Asia

FIRST ANNOUNCEMENT

Pekanbaru, Riau, Sumatra, Indonesia

24-26 January 2006

[23 January optional field trip]

Background

Ecosystem responses that cause carbon loss to the atmosphere as a result of warmer climates and land practices could greatly accelerate climate change during this century. Potentially vulnerable carbon pools that currently contain hundreds of billion tons of carbon could release an amount equivalent to 200 ppm of atmospheric CO₂ by 2100 (Gruber et al. 2004), so rivaling the expected release from fossil fuel combustion.

Tropical peatlands are among the high density carbon regions of the world (ie, carbon hot spots) vulnerable to destabilization. Other vulnerable systems are high-latitude peatlands, frozen soils (permafrost), and boreal and tropical vegetation susceptible to losses through combustion (disturbances, mainly land use change and fire).

Despite the potential large impacts of tropical peatlands at the regional and global scales, there is limited knowledge of their carbon content and dynamics as they are forced by land use practices, fire, and climate variability and change. Commensurate with this limited level of knowledge, there have been no efforts in including such ecosystems and dynamics into large scale biogeochemical and climate models which are used to drive future atmospheric CO₂ growth. Our working hypothesis is that failure to account for these vulnerable pools, biogeochemical and climate models are likely to be underestimating the future growth of atmospheric CO₂, and therefore, the level of anthropogenic driven climate change.

In recognition of the importance of this potential major Earth System feedback and its implications for policy formulation and evolution of international treaties dealing with climate change and regional sustainability, an effort has been established to foster new research and synthesis of the vulnerability of tropical peatlands.

Objectives

The objectives of this activity is i) to quantify the carbon content of tropical peatlands in the Asia region and its vulnerability to large releases of carbon over this century; and ii) to design adaptation strategies that increase system resilience and therefore reduce vulnerability to losses of tropical peatlands iii) to contribute to the management strategies for peatlands in the region.

A series of activities and workshops will be organized to address the above objectives. The first workshop will be held in Riau Sumatra 24-26 January 2006 to initiate a synthesis of current knowledge and design a protocol for data collection and modeling experiments.

The specific goals of this first workshop in Riau are:

- To compile and synthesize existing datasets on carbon content of tropical peatlands in Se Asia.
- To assess the processes affecting the uptake and release of carbon, including the identification of potential "thresholds" beyond with rapid releases of carbon emissions would take place.
- To test model algorithms for integrating the carbon dynamics of peatland pools in terrestrial C models.
- To document the main human impacts on peatland carbon stores
- To design a protocol for modeling experiments using available data (extension and carbon content), scenarios of future climate and land use change (for the Asia Pacific region and sub-regional assessments for hot spots)



- To develop first-order analyses of the possible net C emissions from tropical peatlands and the magnitude of the feedback to global warming.

Outcomes

The specific outcomes from the first workshop in Sumatra will be the design and initiation of activities that will aim to produce:

- A new synthesis of the extent of tropical peatlands in S E. Asia.
- A new synthesis of carbon content of these peatlands
- An analysis of the possible net carbon emissions from peatlands under different scenarios of climate and land use change.
- First-order analyses of the plausible positive feedback of peatland C emissions on global warming.
- A number of publications in peer-reviewed journals to accommodate the various synthesis and future scenario studies. (If there is enough interest and material we are keen in submitting a proposal for a full special issue in a peer reviewed journal)
- Identification of possible management implications of climate scenarios and C emissions for peatlands
- Dissemination of information on possible impacts of different land use practices on vulnerability to climate change
- The development of a methodology to assess the vulnerability of tropical peatlands and plan adaptation strategies
- The engagement of the large research community working on tropical peatlands with a willingness to contribute to a coordinated effort.
- Alignment of this work with specific calls for research funding to support field and modelling studies.

Partnership and Sponsors

The objective of this activity is to support the research community working on tropical peatlands and carbon in the region of Asia and generate information of importance for the management of peatlands. The project is coordinated by the Global Environment Centre, the Global Carbon Project, and CIFOR. Financial support is provided through a grant from the Asian Pacific Network for Global Change Research and the US National Science Foundation through the Global START Secretariat. Additional support is being provided from CIFOR, the Global Carbon Project, the Climate Change Forest and Peatland Project led by Wetlands International and Wildlife Habitat Canada and funded by CIDA; and the WI-GEC project on integrated management of Peatlands for Biodiversity and Climate Change being funded by UNEP-GEF.

The modest funding available will be used to partially support the workshop/s to link together the various interested groups and facilitating the necessary coordination and scientific vision. In order to be successful, the activity will need to rely on the contributions of individual scientists and institutions to support part of the research, data gathering, and modelling runs.

Venue

To be determined in the city of Pekanbaru, Riau Province, Sumatra, Indonesia

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