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GHG-exchange and economic effects of climate friendly peatland management in Germany

M. Drösler (1), J. Augustin (2), Ch. Förster (1), A. Freibauer (4), M. Hahn-Schöfl (4), H. Höper (5), J. Kantelhardt (6), H. Liebersbach (5), M. Minke (2), L. Müller (7), U. Petschow (3), L. Schaller (6), P. Schägner (3), M. Sommer (7)

(1) Department of Ecology, Chair of Vegetation-Ecology, Technische Universität München, Germany (droesler@wzw.tum.de / Tel +49 8161-713715) (2) Institute of Soil Landscape Matter Dynamics, Leibniz-Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany, (3) Institute for Ecological economy Research, Berlin, Germany, (4) Max-Planck Institute for Biogeochemistry, Jena, Germany, (5) State Authority for Mining, Energy and Geology, Bremen, Germany, (6) Institute of Agricultural Economics and Farm Management, Technical University of Munich, Germany, (7) Institute of Soil Landscape Research, Leibniz-Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany

GHG-exchange of managed peatlands amount to 2.3-4.5 % of the anthropogenic emissions in Germany (Byrne et al. 2004). Previous studies of the partners give hints to a climate mitigation potential via peatland restoration, depending on the dominating factor – the water table. In face of this we definitely must further span the site conditions and restoration measures for a large scale assessment of peatlands GHG-exchange processes in the temperate region. To fill these gaps, the German Ministry of Education and Research funded an interdisciplinary research project (2006-2010) focusing on the GHG-exchange and economic consequences of climate friendly peatland management. At six sites (2 bogs and 4 fens) spread over Germany´s major peatland areas and an associated natural fen site in Poland (Rzecin) gas exchange of CH_4 and N_2O as well as NEE of CO_2 is measured since beginning 2007. Process studies with peat columns in the lab will help to further parameterize the models. Up-scaling of the plot measurements to the landscape level will be done with remote sensing technologies. Socio-economic consequences of climate friendly peatland management are studied to identify, if alternative land-use or even complete restoration provoke microeconomic

restrictions at the farm level, but may lead to higher economic welfare for the society. The speech will present an overview over the project, the research aims and methodologies, the sites and the first results after the first half of the project-time. The focus of the results will be on the NEE, the C-balance and the net climate effect.

Literature:

Byrne, K.A., B. Chojnicki, T.R. Christensen, M. Drösler, A. Freibauer, et al. (2004). EU peatlands: Current carbon stocks and trace gas fluxes. CarboEurope-GHG Concerted Action – Synthesis of the European Greenhouse Gas Budget, Report 4/2004, Specific Study, Tipo-Lito Recchioni, Viterbo, October 2004, ISSN 1723-2236.