

# Cultivating the climate: socio-economic prospects and consequences of climate-friendly peat land management in Germany

Lena Schaller · Jochen Kantelhardt ·  
Matthias Drösler

Published online: 17 May 2011  
© Springer Science+Business Media B.V. 2011

**Abstract** About 30% of the world's soil carbon is stored in peat soils. Peat land's functional principle of carbon storage greatly depends on management strategies. Therefore, agricultural peat land use becomes a focal point of interest in the current debate on climate protection. Agricultural management demands a draw-down of the water-level that causes degradation of the soils, as well as trace-gas emissions which have a negative impact on greenhouse-gas balance. Climate-friendly peat land management strategies, however, demand enhanced groundwater tables and decreased land-use intensity. Against this background, we analyse ways of re-organising agricultural peat land use within a case study located in Germany, where intensive peat land use accounts for 2.3–5.1% of the

country's overall greenhouse-gas emission. The study takes place in six regions which represent all possible socio-economic and natural conditions with regard to the range of existing peat land types, range of management and cultivation types, as well as the range of land-use intensity. To analyse potentials and effects of re-organising peat land use, stakeholder workshops and extensive farm surveys were carried out. The results indicate that reservations exist as regards a re-organisation of peat land management. Financial compensation for farmers appears necessary. The results also show that the potential of rearrangement throughout the regions varies significantly, mainly according to the existing level of interconnection and cooperation between local stakeholders, the technical feasibility of restoration and water logging and the level of agricultural profitability of peat land cultivation with regard to income, capital commitment and the share of affected peat land area.

---

Guest editors: Dominik Zak, Robert McInnes, Jörg Gelbrecht / Restoration, biogeochemistry and ecological services of wetlands

---

L. Schaller (✉) · J. Kantelhardt  
Institute of Agricultural and Forestry Economics,  
University of Natural Resources and Life Sciences  
Vienna, Feistmantelstr. 4, 1180 Vienna, Austria  
e-mail: lena.schaller@boku.ac.at

J. Kantelhardt  
e-mail: jochen.kantelhardt@boku.ac.at

M. Drösler  
Department of Ecology and Ecosystem-Management,  
Technical University of Munich, Emil-Ramann-Str. 6,  
85350 Freising, Germany  
e-mail: droesler@wzw.tum.de

**Keywords** Agricultural peat land use · Reduction of greenhouse gases · Farm survey · Economic consequences

## Introduction

The role of peat lands in the global climate

Worldwide peat lands represent 3% of the land and freshwater surface of the planet. Despite this small