

Natural Capital Germany – TEEB DE case study

Mecklenburg-Western Pomerania:

Peatland protection as an investment in climate change mitigation

Living, intact peatlands store large quantities of carbon and water. They also provide habitats and refuges for many endangered species, e.g. the lapwing or the black tern. Today, however, 95 per cent of all major peatlands in Germany have been drained for agriculture, forestry or peat cutting. As a result, important natural services such as climate regulation through carbon fixation and water regulation through filtering and retention are no longer available. Active peatland protection with rehydration therefore not only has benefits for the conservation of biological diversity, but also makes a contribution to climate protection. Wet management of peatland soils by growing appropriate plant species may also be compatible with their climate change mitigation functions.

Location:

i.a. Polder Kieve

Actors:

Science, Citizens, Associations, Federal stat

Project description:

The drainage of German peatlands has released large quantities of carbon that were stored in the peat for thousands of years. With nationwide greenhouse gas emissions of more than 40 million tonnes of carbon dioxide equivalent per year (UBA 2012), dry peatland soils account for one third of such emissions by the German agricultural sector – and this on only eight per cent of the production area (SRU 2012). Peatland protection thus offers a comparatively large savings potential of between 5 and 30 million tonnes of carbon dioxide equivalent per year.

Conventional agriculture on peatland areas is not site-appropriate. In particular, maize growing on peatland soils for biogas purposes leads on balance to higher greenhouse gas emissions than using fossil fuels.

For Mecklenburg-Western Pomerania, drained peatland soils are the biggest emission source with a current figure of 6.2 million tonnes of carbon dioxide equivalent (LUMV 2009). The aim of the Mecklenburg-Western Pomerania State Ministry of Agriculture, Environment and Consumer Protection (LUMV) is therefore to rewet peatland areas in consultation with landowners and users. The focus here is on the potential of alternative, peatland-friendly land uses that also function at higher water levels.

A team of experts from the University of Greifswald was commissioned by the LUMV to devise a model for assessing the climate relevance of peatland areas. On the basis of water level and vegetation it is possible to draw conclusions about the greenhouse gas emissions of peatland sites. Whereas a drained and intensively used peatland site releases an annual average of between 18 and 40 tonnes of carbon dioxide equivalent per hectare (UBA 2012), this figure could be reduced by 10 to 20 tonnes through rewetting (Schäfer 2009). By contrast, intact and growing peatland sites can store up to 1.6 tonnes of carbon per hectare per year (LUMV 2009).

On wet sites, peatland soil use could take the form of "paludiculture", which maintains the natural functions and services of peatland soils. This involves the use of wet farming techniques, e.g. growing sphagnum for producing peat substitute substrate, various types of reeds, or alder trees as building materials, as an energy resource or for wood production. The results of the research project "Western Pomerania Paludiculture Initiative" (VIP) open up economically viable alternative uses that can have positive impacts on climate and environmental protection and also on nature conservation.

"Targeted peatland protection measures on just under 30,000 hectares of land in Mecklenburg-Western Pomerania succeeded in substantially reducing greenhouse gas emissions between 2000 and 2008," says Achim Schäfer from the University of Greifswald. "The benefit of this ecosystem service for society lies primarily in the climate impacts it avoids, the monetary value of which is put at around €30 million per year." As the study by the University of Greifswald shows (Schäfer 2009), expanding the rehydrated areas by 70,000 hectares by 2020 could be expected to have an economic benefit of more than €70 million per year.

"To open up this development for private enterprise, the ministry in Mecklenburg-West Pomerania has placed new emission allowances in the form of 'MoorFutures' on the voluntary emissions trading market", explains Monique Ziebarth (LUMV). MoorFutures give investors the opportunity to optimise their future greenhouse gas emissions balance through bogland protection. As Ziebarth points out, "This is not only good for the climate, but also benefits nature with the numerous ecosystem services it provides for us."

Nature conservation is a multifunctional activity.

Literature:

UBA (2012) Berichterstattung unter der Klimarahmenkonvention der Vereinten Nationen und dem Kyoto-Protokoll 2012. Nationaler Inventarbericht zum deutschen Treibhausgasinventar 1990 - 2010. Umweltbundesamt: Dessau.

LUMV (2009) Konzept zum Schutz und zur Nutzung der Moore. Fortschreibung des Konzeptes zur Bestandssicherung und zur Entwicklung der Moore in Mecklenburg-Vorpommern (Moorschutzkonzept). Ministerium für Landwirtschaft, Umwelt und Verbraucherschutz Mecklenburg-Vorpommern (LUMV).

Schäfer, A. (2009) Moore und Euros - die vergessenen Millionen. Archiv für Forstwesen und Landschaftsökologie 43, 156-160.

SRU (2012) Verantwortung in einer begrenzten Welt. Sachverständigenrat für Umweltfragen, Berlin.

Ecosystems:

Peatlands

Ecosystem services:

Regulating service: carbon storage
Habitats: for animal and plant species
Cultural service: recreation
Cultural service: tourism
Cultural service: aesthetic pleasure

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More Information

Link to the project's webpage: <http://www.moorfutures.de/>

„Natural Capital Germany – TEEB DE“ is the national follow-up project to the international TEEB initiative (The Economics of Ecosystems and Biodiversity). It was commissioned by the Federal Agency for Nature Conservation (BfN) with funding from the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in order to analyze the manifold values of nature and of the so called ecosystem services in Germany as well as the consequences of species loss also in economic terms and to make them visible. The project is coordinated at the Helmholtz Centre for Environmental Research (UFZ) within the period 2012-2015. More information can be found at: www.naturkapital-teeb.de
