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# FARMERS' PREFERENCES FOR AN AGRI-ENVIRONMENTAL MEASURE DESIGNED FOR CLIMATE FRIENDLY PEATLAND MANAGEMENT

Kati Häfner, Ingo Zasada, Julian Sagebiel

kati.haefner@zalf.de

Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF)

Eberswalder Straße 82

15347 Müncheberg



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# **FARMER'S PREFERENCES FOR AN AGRI-ENVIRONMENTAL MEASURE DESIGNED FOR CLIMATE FRIENDLY PEATLAND MANAGEMENT**

## **Summary**

To reduce greenhouse-gas emissions from agriculturally used peatlands a new agri-environmental measure for peatland protection through water logging was established. To investigate which factors influence the willingness of farmers to participate in the measure we apply a discrete choice experiment. Measure characteristics such as contract length, assured acceptance of the cut grass, support in the cooperation with neighbours, effort to register and financial compensation are considered. The very new scheme targeted at climate protection could therefore be adjusted and better tailored to different farm types.

## **Keywords**

Agri-Environmental Measure, Peatland, Climate Change, Farmer's preference, Discrete Choice Experiment.

## **1 Problem Statement**

Across EU Member States in 2014, greenhouse gas emissions were the highest in Germany (21.9 % of the EU-28). Germany is committed to reduce its greenhouse-gas (GHG) emissions by 40 % by 2020 compared to 1990 and aims at cutting them by 80 – 95 % by 2050. To reach those goals more effort needs to be made.

Drained and agriculturally used peatland areas are one major GHG source and make up 5 % of overall German GHG emissions. These emissions are mainly driven by the water level and its respective land management. Currently, most peatlands are managed as grassland (53 %) and about 20 % as cropland. A reduction of GHG emissions from peatlands can be reached through a) improved water table management and water logging, as the emission is lowest with a water table just below the surface, and b) extensive management.

To compensate for profit loss and forgone income a new agri-environmental and climate protection measure for peatland protection through water logging (Moorschonende Stauhaltung) on grasslands was established. The aim is on the one hand to protect and re-establish peatlands and to keep water in the landscape system, but on the other hand to allow farmers to manage their land, and to maintain their business activities. Until now, only limited knowledge and experiences are available about the measure uptake, effectiveness and optimal measure design.

With our study we try to answer, which factors influence the willingness of farmers to participate in an agri-environmental measure designed for climate friendly peatland management targeted at reducing GHG emissions and improving habitat quality. We further investigate how important cooperation, coordination and neighbouring effects are.

## **2 Methods**

We apply a discrete choice experiment to access, which factors influence the willingness of farmers to participate in the agri-environmental measure for climate friendly peatland management.

The selection of attributes and the respective levels were based on the following steps. First, a list of attributes was collected from literature, several workshops and initial interviews with

farmers that manage peatlands. Second, an online pre-test was conducted among people from the field of peatland farming, science, administration and other concerned organisations to rank the list of attributes in their importance for the measure uptake. Third, the most important attributes were discussed with peatland farmers in cognitive interviews to set the levels. In the final choice experiment the following five attributes and the respective levels were considered.

*Table 1. List of attributes and their respective levels considered in the choice experiment.*

<b>Attributes</b>	<b>Levels</b>
Contract length	2 / 5 / 10
Support in the cooperation with neighbours	No / Yes, by the office for agriculture / Yes, by the water and soil association
Effort to register for the measure	Low / middle / high
Acceptance of cut grass is assured	No / Yes, for a fixed price of 50 €/t DM / Yes, at market prices
Financial compensation (€/ha*a)	140 / 220 / 300 / 380 / 460 / 540

Each respondent faced 9 choice situations with two different measure designs and an opt-out (status quo) option. We used a mixed-method approach (pencil and online) to enhance participation. 3000 letters were sent to farmers in North-Germany. And we additionally distributed the online link via farmers associations. We received 454 responses, of which 155 farmers were managing peatland and completed the choice experiment. The data were analysed by estimating a conditional logit model.

### **3 Results**

We find that all considered attributes are important for the willingness to participate in the measure. Farmers have a significantly higher preference for a medium contract length of 5 years. Furthermore they would like the water and soil association to support the cooperation with neighbouring land managers and would appreciate, if the acceptance of cut grass would be assured. Only a high effort to register for the measure has a significant negative influence on the farmers' willingness to participate. However, while 75 % of respondents consider participating in the measure, one out of four always chose the opt-out option. One reason is, e.g., that the incentive still cannot compete with the prices in very intense agricultural systems (especially in intense agricultural regions such as Niedersachsen). Further in-depth analyses considering socio-economic and farm characteristics are carried out. With our results the very new scheme targeted at climate protection could be adjusted and better tailored to different farm types.