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The PEATWISE project: reducing greenhouse gas emission in drained peatlands while maintaining biomass production

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Drained peatlands are a large source for CO_2 emission in Europe (500 Million ton a-1). The ERA-GAS project PEATWISE has the aim to analyse assessment practices and sustainable techniques for the mitigation of greenhouse gases from drained peatlands within Northern Europe and New Zealand. The projects that are part of PEATWISE all focus on reducing greenhouse gas emissions while maintaining the land for agricultural purposes or forestry. The measures used can be divided into three main categories:
• Elevation of water table with the same land-use (grading; submerged drains)
• Change in water table and change in crop (paludiculture) or land-use (renaturation)
• Change in soil properties (peat inversion; sand, gipsen, charcoal or ash addition)
This presentation will give an overview of the first evaluation of the effect of the different measures on the greenhouse gas emission within Europe. Elevation of the water table seems only to be effective if the water table is close to soil surface. So far, there is no clear positive results found for CO_2 reduction in changing the drainage system (grading, submerged drains). More research is needed to the effectiveness of small increase in water table. A better result is found with paludiculture, where the whole soil is rewetted. CO_2 emission can strongly decrease, but the water table should stay below the soil surface, otherwise CH4 will increase to high numbers. The effect of nutrients in the topsoil on the CH4 production will be investigated.
Sand addition and ash addition give promising results in an experimental setting.
Some projects are in an early stage and data are not yet available. Therefore, these results will give an general but not a complete overview of the possibilities to reduce greenhouse gas emissions from drained peatlands.