

Exploring the potential of reed as a bioenergy crop in the Netherlands

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Second-generation biofuels that produce biomass for combustion or ethanol production do not yet appear to be a viable alternative to agriculture as they are low-value products. This may change, however, when energy prices increase and their production is combined with the provision of other services. The current analysis explores the potential for the production of reed, an often overlooked biomass feedstock that can be combined with water and nature management objectives. This crop has the additional advantage that it can be grown under conditions that are unfavourable to most other crops.

Land Use Scanner, a widely applied economics-based land-use modelling tool, is used to simulate the local competition between reed and grassland used for dairy farming under four different future scenarios in the Netherlands. Based on a location-specific assessment of potential costs and benefits of these crops under scenario-based conditions, this analysis shows that the cultivation of reed for bioenergy, in combination with providing additional land-use functions is not viable option under current economic and political conditions. However, it may become competitive within the next twenty years if any of the following developments occur: energy prices increase substantially; water tables rise in the low-lying western parts of the country due to climate change; a policy is implemented that increases bioenergy prices; or a policy is implemented that stimulates water buffering and the preservation of peat soils.

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