



ABSTRACT SUBMISSION

Title: A Landscape generator as tool for integrated landscape level environmental impact assessment of bioenergy activities

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Abstract

Biomass from renewable resources for bioenergy uses offers a great opportunity for the replacement of fossil fuels, especially for future energy demand scenarios. However, modified land use change may lead to new or increased environmental impacts, additionally modulated by climate change. For the assessment of bioenergy impacts on the environment, there is need for regional studies, which integrate a variety of impacts, and which go further than classical Life-cycle-assessments (LCAs), e.g. by including effects on biodiversity, or on river and streams. Especially it is important to include the effects on biodiversity, as such studies are at its beginning.

To tackle these questions, we present a landscape generator, which aims to understand the environmental impacts of bioenergy use on the environment including future climate change at the landscape level. This approach will include exemplary studies of bioenergy impacts on biodiversity, aspects of spatial effects of the landscape on populations, and is planned to include the effect of cropping systems on rivers and streams.

The landscape generator will vary systematically spatial structures of model-landscapes, e.g. landscape configuration and composition, and relative distribution of cropping systems. It generates a set of model-landscapes, which can be investigated consistently by several collaborating projects with specific questions related to the bioenergy impact on the environment. The use of the same model-landscapes for all collaborating projects ensures a consistent multi-criterial impact analysis.

The results of the specific modelling studies will be used for the analysis of the environmental bioenergy impacts at the landscape and the regional scale.

Approval Confirm

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