



## **‘Energy Crops, Economy and Environment’ - an integrated assessment of the effects of land use change induced by biogas plants**

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The increased use of biomass as a source of energy is a central element of the German climate protection policy. One result of this is an increasing number of biogas plants. For a cost-effective operation, energy crops, e.g. maize, have to be cultivated for the whole life time on a certain area of arable land in the vicinity of each biogas plant. Therefore the installation of such a plant may lead to considerable changes of land use and, subsequently, affect ecological indicators like biodiversity and nutrient cycling. Additionally, the recent raise of world market prices for foods leads to an economic competition between food and energy crop production.

To evaluate the ecological and economic consequences of land use change induced by increased installation of biogas plants, the German Research Foundation funds the new Transfer Unit (TU) ‘Energy Crops, Economy and Environment’ within the Collaborative Research Centre ‘Land use Concepts for Peripheral Regions’ (SFB 299). Within this TU, four scientific projects of the model network ITE2M (Integrated Tools for Ecological and Economic Modelling), established within the SFB 299, work on the integrated assessment of the effects of biogas plant installations and on an optimisation of their location in South-Hesse, central Germany. Beside this site-optimisation different cultivation techniques such as fertilising strategies or cultivation of different substrates for biogas fermentation will be evaluated in the model network. Subjects of evaluation are economic aspects, water quality and quantity, energy balances and biodiversity. A fifth project deals with aspects of public relations and aims to inform the broad public as well as children and pupils in the project region about environ-

mental and economic aspects of energy crop production as well as integrated impact assessment in general.

The local power supplier is the business partner of the project and the operating company of the planned biogas plants. The conception and the structure of the new TU is presented.