

7.2 SEBASTIAN AUBURGER, ENNO BAHRS

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POTENTIAL AVAILABILITY OF ARABLE LAND FOR ADDITIONAL SUGAR BEET CULTIVATION AS A BIOGAS CROP IN GERMANY

Disponibilité potentielle de surfaces agricoles pour une culture supplémentaire de betteraves sucrières, en tant que fournisseur de biogaz en Allemagne / Potentielle Verfügbarkeit landwirtschaftlicher Flächen für den zusätzlichen Anbau von Zuckerrüben als Biogaslieferant in Deutschland

ABSTRACT

Biogas production is inhomogeneous distributed over Germany. Especially with regard to the most important biogas substrate maize, the impact of this kind of renewable energy production on e.g. soil parameters, biodiversity or landscape is different between regions or even municipalities. As an alternative sugar beet gets into focus as a biogas crop. Sugar beet cultivation for food production is mostly concentrated in regions with good soil and climate conditions. By contrast sugar beet cultivation as an energy crop is also placed in non typical sugar beet production areas. In our FNR sub-project we focus on the nationwide influence of sugar beet cultivation as a biogas crop in energy crop rotations. This includes impacts on land and food markets. Therefore the potential of additional sugar beet cultivation was calculated first. The theoretical potential of additional sugar beet cultivation in Germany is about 2.7 Million hectare, if a maximum share of sugar beet of 25 percent in crop rotations is taken into account and restrictions concerning soil or climate parameters are neglected. The regional distribution of the calculated potential availability of arable land for additional sugar beet cultivation shows that it is distributed inhomogeneous overall Germany. To ensure that potential estimation considers only municipalities which certainly enable sugar beet cultivation, we calculated the potential only for municipalities with sugar beet cultivation in 2007 in a second step. Thus the estimated potential of additional sugar beet cultivation decreases down to 1,1 million hectare. Hence, the real economic potential should be in between 2,7 and 1,1 million hectare.
