
Impact of energy plant cropping and irrigation on farmland birds on a regional scale

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Abstract

Indicators have been showing biodiversity decline in agricultural landscapes throughout Germany and much of the EU. This negative trend has triggered intense discussions about the reasons and appropriate counteractions. However, profound changes within agricultural production systems continue, induced by various factors like governmental support of agriculturally produced bioenergy or by technological advancements. How do these broad scale trends relate to the regional biodiversity in agricultural landscapes? How do they fit to regional biodiversity targets? In a scenario study we present a methodological approach to identify regional land use responses to large scale changes of frame conditions and their implication on the habitat provision for farmland birds as important biodiversity indicator. To this end we combine ecological impact assessment with economic farm models and link cropping systems at the field scale to regional distributions of crops. This approach allows the analysis of farmers' response to changing frame conditions and to combine impacts of regional land use changes with regional environmental characteristics.

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