Is small beautiful? Structural development in the organic farming and its consequences for nature and landscape

Earlier studies (Langer et al. 2005, Levin et al. 2006, Levin 2007) have shown that part of the organic farming sector in Denmark follow a structural development, which results in larger and more specialized farms. In international literature (Kratochvil and Leitner, 2005) this has been interpreted as a "conventionalization" of the organic farming sector, with subsequent risk of negative effects on environment and nature.

The period from 2000 to present has been characterized by large changes in the agricultural policy, such as the introduction of the single-payment scheme in 2004, the phasing out of the compulsory fallow requirement during 2007 and 2008, and the demands for phasing out conventional fodder use in organic agriculture. Furthermore, recent developments in the energy sector and the subsequent technology development in biomass transformation to energy fuels open new avenues for farming in general.

The resulting trends in the structural development (size, specialization) of different farm types as well as the main driving forces for these changes within the organic sector are largely unknown. Although farm enlargement has been shown to have negative impacts on the abundance of non-cultivated agricultural land on Danish organic farms (Frederiksen and Langer 2005), the underlying mechanisms as well as the implications for the fulfillment of nature and landscape conservation claims of the organic sector have not been investigated.

Therefore, the general objective of the suggested study is to contribute to uncovering in which direction(s) and by which driving forces the organic farming systems develop and which consequences this may have for nature and landscape.

Specific objectives are:

- To investigate the development in land use, management and non-agricultural economic activities in the organic farming in the period 2001-2008. The analysis build on a former study from 2001 (Nature Quality in the organic farming, carried out under DARCOF II) and includes a follow-up study, as well as a methodological development in approach and in dissemination of policy-relevant information.
- to investigate the importance of different driving forces for the structural development, and the potentials and barriers of response to these, including
    - the implications of agricultural policy changes
    - the technology development within use of biomass for energy purposes
    - the regionally restrain on access to land
- to analyse the consequences of the described development for nature and landscape management and conservation
- to contribute to the development of relevant indicators for communicating the relationship between farm development (changes is size, management, land use, etc.) and the changes in nature and landscape

Methods

The study will use and further develop the methods used in the former investigation. Data from the general agricultural registry will be used for the analysis of land use and management elements, crop diversity and up-take of environmental measures. Survey methods will be used for collection of data on farm management and changes in landscape elements, and semi-structured interviews

allowing for inclusion of qualitative data will be used when exploring the importance of different driving forces and the barriers or potentials for farmers to respond to these driving forces.

Cross-cutting aspects

The proposed study is anchored in existing interdisciplinary research collaboration between the Department of Agricultural Sciences, University of Copenhagen and the Department of Policy Analysis, National Environmental Research Institute, University of Aarhus, where the collaboration concerns agricultural systems in a broad sense, including non-agricultural activities on farms, and the development in environment, nature and landscape within organic farming. The proposed study will be attached to LIFE-CPH with assistant supervisor at NERI-AU.

References

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