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On diversity effects of alternative agricultural policy reforms in Finland: an agricultural sector modelling approach

Keywords agricultural policy reform, agricultural sector model, biodiversity, landscape diversity, land use, nutrient balances, production intensity,

Abstract

The European Union has decided to reform its agricultural policy and decouple Common Agricultural Policy support partially from production. The aim of this study is to predict the diversity effects of agricultural policy reforms in which direct aid payments are decoupled from production, and compare the outcomes with the effects of a policy in which Common Agricultural Policy support is coupled to production. The study employs a dynamic regional sector model of Finnish agriculture. The sector model predicts regional agricultural land use, crop production, livestock, stocking densities, pesticide application areas, and nutrient balances. Diversity of agricultural land use is measured using a diversity index. The results indicate that if agricultural support is independent from production, the amount of fallow land will increase considerably in the future. This will decrease the diversity of agricultural land use at landscape level, but may not be harmful to biodiversity at the level since green fallow has some positive effects, especially on the densities and abundance of farmland birds. Instead, the increase in bovine animals is likely to run down biological diversity, since it simplifies crop rotation and diminishes grazing.

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