

FarmLand – European network on farmland heterogeneity, biodiversity and ecosystem services

Agricultural landscapes occupy 40% of the available land area in Europe. They also play an important role in providing habitat for wild plants and animals that contribute significantly to agricultural production through services such as crop pollination and control of crop pests. In many regions farm fields are becoming ever larger, and many agricultural regions are now dedicated to a small number of crop types. How did these changes in farmland pattern affect farmland wildlife and the services they provide for agriculture? Are there policies which, if followed, would improve habitat for farmland wildlife and the services it provides without compromising food production? FarmLand addresses these questions by bringing together teams from France, Germany, Great Britain, Spain plus one from Canada.

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Previous work demonstrated that agricultural landscapes which contain significant areas of semi-natural lands have higher wildlife diversity and better ecosystem services than farmlands with less semi-natural lands. These results led to policies encouraging semi-natural field margins or semi-natural strips within crop fields. Such policies require taking crop area out of production. This is often not feasible. It has been suggested that, in addition to the area of semi-natural habitats, the spatial heterogeneity of the cropped lands may be positively related to wild plant and animal diversity and to their provision of ecosystem services. If this is true, then it may be possible to develop new policies for agriculture that restore biodiversity and associated ecosystem services by increasing farmland heterogeneity, without reducing cropped area. The aim of FarmLand is to test this idea and to help develop such policies. This has not been attempted so far at such a scale and through such an integrated approach.

The objectives of FarmLand are to: (1) disentangle the relationships between landscape heterogeneity and plant or animal diversity in seven European agricultural regions (one in Germany, four in France, one in the United Kingdom and one in Spain) plus one Canadian region; (2) assess the links between landscape heterogeneity and ecosystem services such as pollination and/or biological control across these regions and (3) study the diversity of farming systems, and the farmers' mental models of the ecological functioning of their farms. FarmLand will promote the collective build up of acceptable recommendations for policy-makers that enhance biodiversity and ecosystem services in farmland.

