

ECODEAL - Enhancing biodiversity-based ecosystem services to crops through optimized densities of green infrastructure in agricultural landscapes

Context

Biodiversity can replace external inputs to agricultural crops by delivering ecosystem services such as pollination and pest control, even in intensively farmed landscapes. The organisms driving these services depend on the presence of non-crop habitats, or “green infrastructure”, in the landscape. We know little about how changes in quantity and quality of green infrastructure at different scales translate into net benefits. This makes it difficult to convince farmers that biodiversity can help them support crop production, and means that the evidence base for policy makers attempting to jointly address food security, rural development and environmental goals is insufficient.

Main objectives

The ECODEAL project aims to reach a mechanistic understanding of the effects of green infrastructure at different spatial scales on crop ecosystem services. More specifically ECODEAL will provide recommendations on the scales at which sparing land from cultivation can support food production, biodiversity preservation and farm economic performance across a range of European agricultural systems.

Main activities

ECODEAL will synthesize large existing databases to model the relationship between density of green infrastructure and the distributions of functional traits and the structure of the ecological interaction networks that underlie pollination and natural pest control. Cases studies from established study areas covering economically important field crops (i.e. France, Germany, the Netherlands, Spain and Sweden) will be used to fill the gaps in the existing data, to validate and update the ecosystem service models derived from the synthesis work and to quantify economic and ecological consequences of changes in quality and quantity of green infrastructures.

As regards specific activities for dissemination of the project outputs and involvement of stakeholders/policy-makers, ECODEAL partners will engage the dialogue with the farming community, policy-makers and NGOs early on to ensure questions are perceived as relevant, and the uptake of results facilitated, using existing networks. ECODEAL will also perform demonstration of ecological mechanisms in the field, engage dialogue about obstacles on the path towards change and produce synthetic policy briefs.



Beeflower

Partners:

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