

Expected results

- Identification of suitable management strategies for multifunctionality
- Policy recommendations for addressing trade-offs particularly in intensively used agricultural regions in Germany
- Awareness raising in society for the topic “transformation of agriculture”

AgriScape is a junior research group funded by the Federal Ministry of Education and Research (funding programme Social-Ecological Research, SÖF) and is associated with the Helmholtz Centre for Environmental Research – UFZ in Leipzig. The project is expected to run from 2022–2027.

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Trade-offs along pathways
towards multifunctional
agricultural landscapes



Background

More than half of Germany's land area is used for food production. Society increasingly expects agricultural landscapes to become multifunctional, i.e. also to provide ecosystem services such as biodiversity protection, water quality, climate protection and recreation. At the same time, they should maintain agricultural productivity and become resilient to climate change impacts. Achieving this requires a transformation in the management of agricultural landscapes. During this transformation, trade-offs are likely to arise, e.g. between climate protection and food production. The project AgriScape investigates these trade-offs and ways for society to address them.

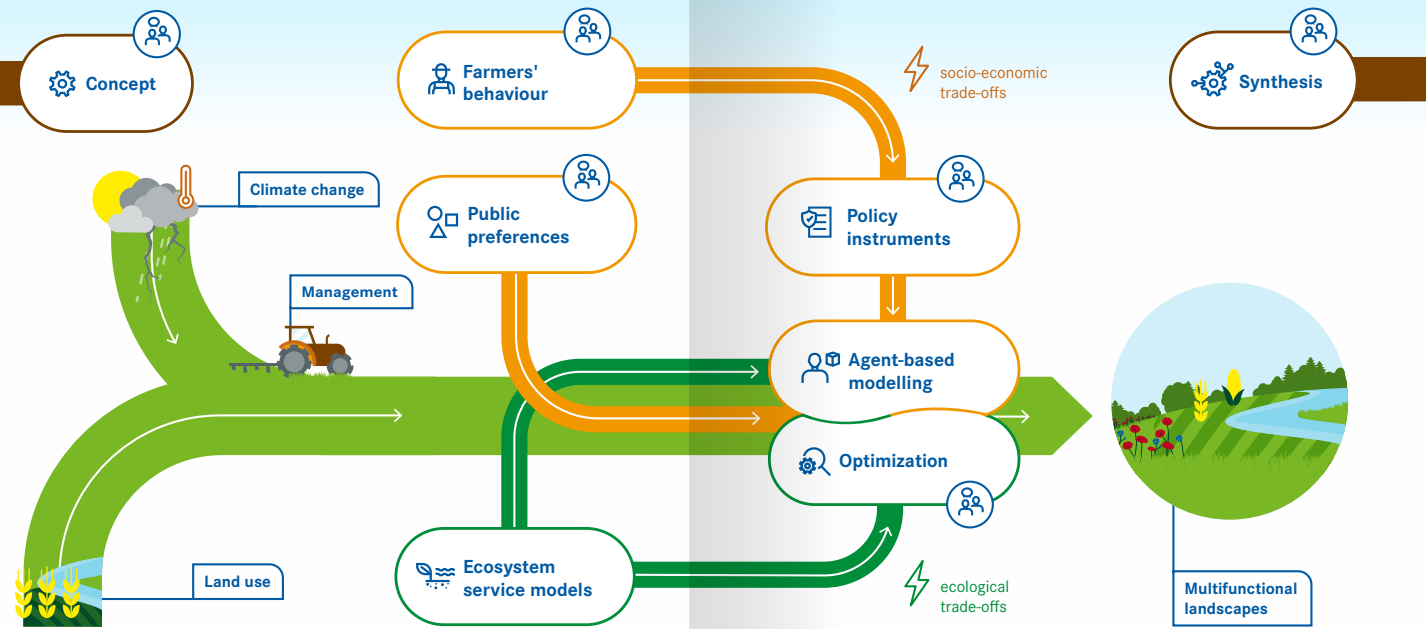
Research questions

Two research questions are central for AgriScape:

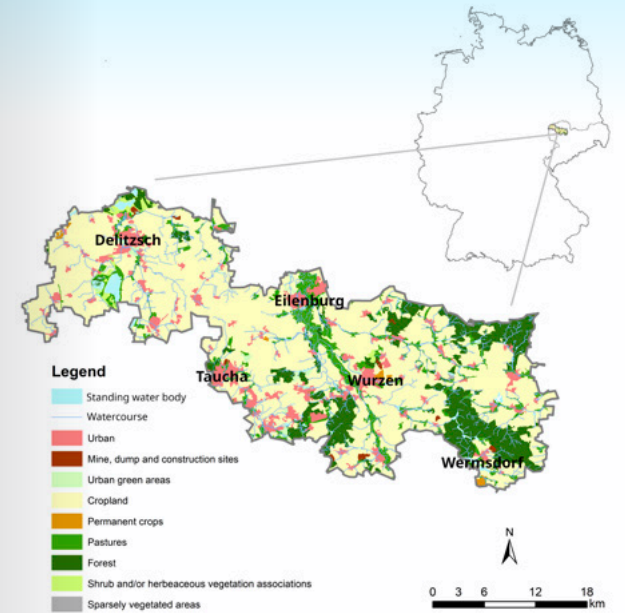
1. Which trade-offs are likely to arise in the context of a transformation towards multifunctional agricultural landscapes?
2. How can policy instruments be designed to minimize these trade-offs?

Research approach

AgriScape approaches the research questions in an interdisciplinary and model-based way. We consider possible future pathways to understand the impact of innovative policy instruments on farmer decisions under climate change. We then examine how these decisions affect the provision of ecosystem services in agricultural landscapes. The ultimate goal is to identify pathways that are feasible and socially desirable, while harnessing the biophysical potential of agricultural landscapes in a sustainable way and minimizing trade-offs.



Conceptual framework of the project.



Spatial allocation of land uses in the case study region north-western Saxony.