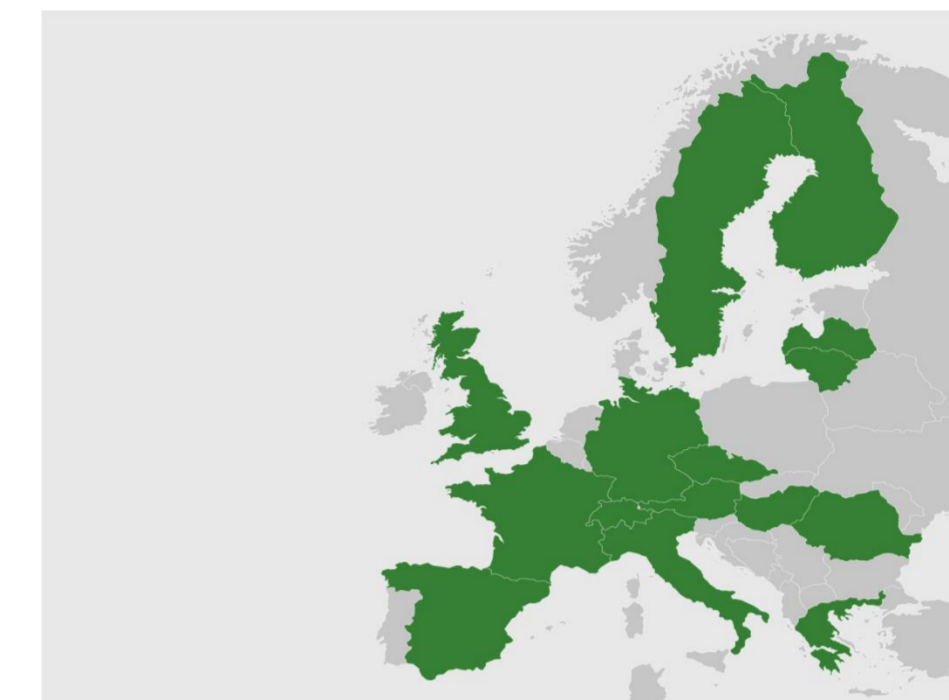


# Barriers and Drivers of Agro-Ecological Transitions in Intensive Agricultural Areas – a Case Study from Germany

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## Context, objectives and research questions

There is an increased awareness that agro-ecological farming systems (AEFS) are fundamental for sustainable food production in the future. The key dilemma is how to produce public goods whilst having viable production of private goods, securing economic and social sustainability at a farm level, which is not overly dependent on public funds.

The ambition of UNISECO is to address this key dilemma through co-constructing improved, practice-validated strategies & incentives for the promotion of AEFS in case studies in 15 European Countries. The case studies will answer the following questions:

- How can barriers and dilemma of AEFS be addressed in a specific case study context?
- What are the socio-economic and environmental implications of the transition to agro-ecological farming?
- Why were innovative strategies and incentives successful (or unsuccessful) in enhancing the joint provision of private and public goods of AEFS in a specific case study context?
- What lessons can be learnt for other cases and future policies?

The case studies cover a wide range of farming systems with different levels of agro-ecological innovations. The German case study provides an example for the analysis of what is required to initiate the transition process to agro-ecological farming in cases of highly market-oriented farming with low level of agro-ecological innovation.

## Case study description

### Case study area and main production systems

- Counties Nienburg and Diepholz in the North German Plain
- Intensive agricultural area comprises 215,000 hectares and approximately 4,000 farms.

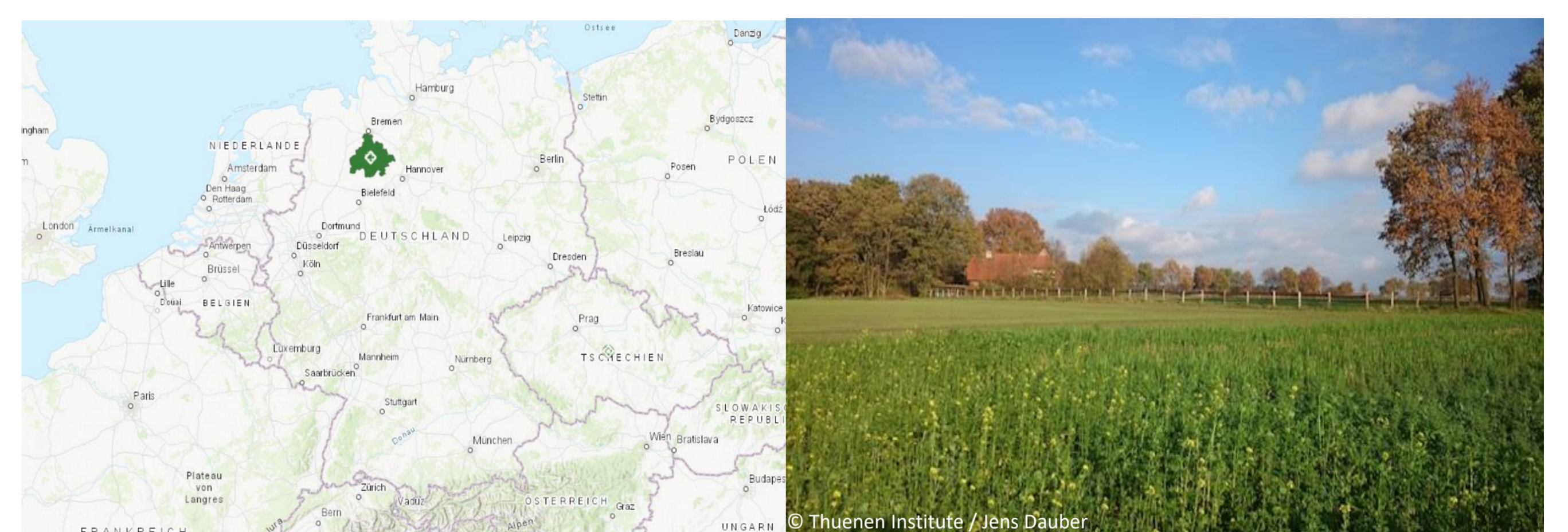


Fig 1: Map of case study location

### Key characteristics of the case study

Case study	Sustainability Issue (examples)	Farm Production Type	
Diepholz & Nienburg	High pressure on ecological sustainability in general, biodiversity loss	Arable systems, dairy systems	
Case study	Agro-ecological Practices (examples)	Level of Cooperation	Involvement in Value Chain
Diepholz & Nienburg	Extensive margins, nutrient management, organic farming, cover crops	Some cooperation exists (e.g. machinery rings)	Poor direct involvement, but generation of high added value

Tab 1: Case study characteristics

## Methodological approach

### Case study specific dilemma:

- How to integrate agro-ecological practices on arable land (both conventional and organic) in highly market-oriented arable farming systems to reduce biodiversity loss and water pollution threats without significant negative impacts on the economic viability of farms?

### Potential key barriers to be addressed:

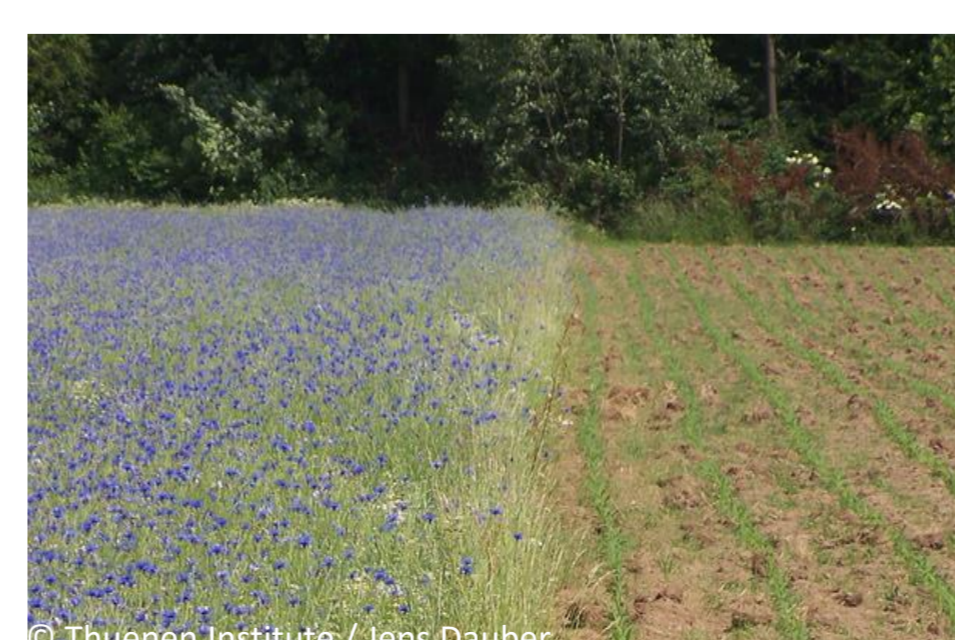
- Lack of knowledge of alternative practices and technologies, farmer attitudes towards agro-ecological farming, high land prices, impacts of adjacent intensive livestock regions

### Conceptual framework:

- Adapted socio-ecological systems framework (Guisepelli et al. 2018)

### Multi-actor approach:

- Use of participatory workshop methods and decision support tools
- Key role of stakeholder champion trusted by farmers and key actors



## Expected results

- Improved understanding of barriers and drivers of transitions to AEFS in intensive agricultural areas
- Co-constructed novel and effective market mechanisms and policy instruments to improve the sustainability of intensive arable farming systems
- Enhanced evidence of the sustainability implications of different agro-ecological transition paths of arable farming systems
- Improved knowledge base of agro-ecological farming for use by policy-makers with at EU, national and regional levels, advisors, farmers, value chain actors and consumers