



# Towards multifunctional agricultural landscapes in Europe: Assessing and governing synergies between food production, biodiversity, and ecosystem services – TALE

(April 2015 – March 2018)

Project coordinator: Prof. Dr. Martín Volk



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# Overall aims of the project

- 1) Disentangle and quantify the **multifaceted links between agricultural production, biodiversity and ecosystem services (ESS)** in different European landscapes
- 2) Provide a **learning environment** that supports the design and evaluation of policy options that can help to reconcile conflicting demands

# Scientific objectives

## Identify

- 1) synergies and quantitative trade-offs** (functional relationships) **between ESS, biodiversity and agricultural production** at different scales (field, farm, landscape etc.)
- 2) how agricultural production, ESS supply and biodiversity conservation, and the synergies and trade-offs between them, might **change under different scenarios**
- 3) land management strategies and policy instruments** that could help to reduce trade-offs between ESS and biodiversity conservation in different regions



# Consortium

## Coordinator

UFZ (Germany)

## Partners

Agroscope (Switzerland)

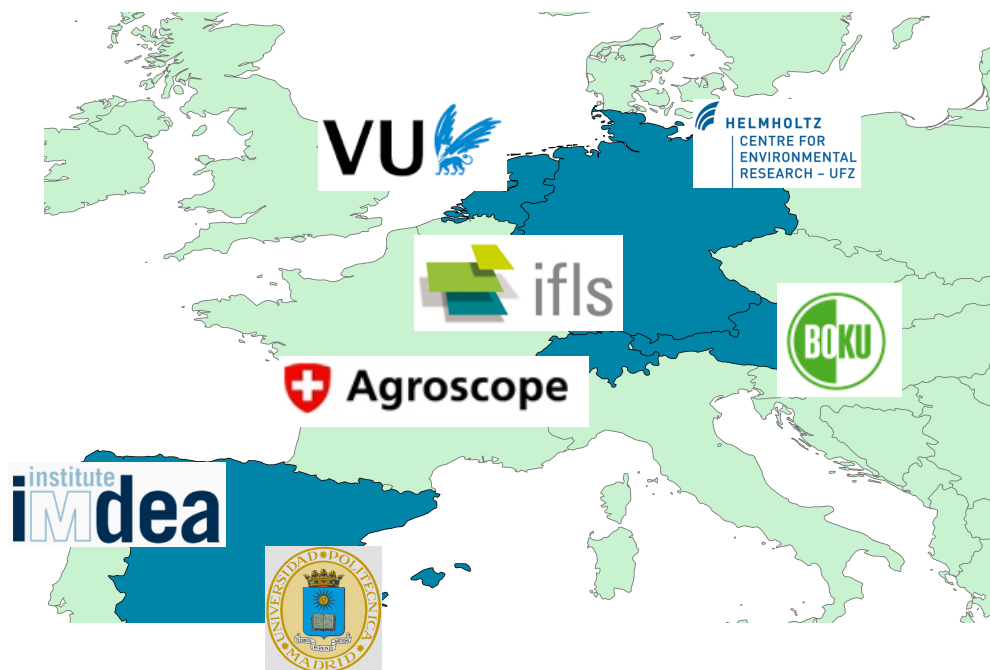
BOKU (Austria)

IMDEA (Spain)

IfLS (Germany)

UPM (Spain)

VU University Amsterdam (The Netherlands)





# Consortium

Partner	Staff
UFZ	Martin Volk, Anna Cord, Nina Hagemann, Nele Lienhoop, Andrea Kaim
Agroscope	Annelie Holzkämper, Nina Zarineh, Raphael Charles
BOKU	Martin Schönhart, Erwin Schmid
IMDEA	Angel de Miguel
IfLS	Heike Nitsch, Cordula Rutz, Jörg Schramek
UPM	Barbara Willaarts, Ana Maria de Tarquis, Alberto Garrido
VU Amsterdam	Peter Verburg, Emma van der Zanden, Astrid van Teffelen



biodiversa



FACCEJPI

**Case study**

**Country**

**Expected climate change impacts**

Broye catchment

Switzerland

Decrease in productivity; increase in environmental impacts (i.e. erosion, nutrient leaching, aquatic biodiversity)



Saale and Mulde catchments

Germany

Decrease in productivity; increase of environmental impacts (i.e. erosion, flood damage, aquatic biodiversity)



Achterhoek

Netherlands

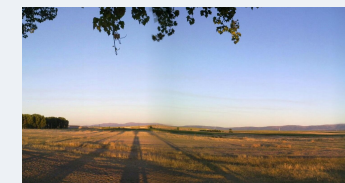
Relatively limited; winters are expected to become milder and wetter; summers are expected to become dryer; weather extremes are uncertain



Cega-Eresma-Adaja region

Spain

Decrease in precipitation; increasing environmental problems (i.e. aquifer depletion and pollution, water quality / quantity problems, with impacts on biodiversity)



Mostviertel region

Austria

Increase in average productivity; unclear impacts of extreme events



# Work packages I

## WP 0: Coordination and management

## WP 1: Policy analysis

- Analyses the policy framework impacting land use decisions regarding agricultural use, biodiversity conservation and ESS supply in a set of contrasting case studies.
- Identifies the synergies and conflicts arising from the implementation of different policies



# Work packages II

## WP 2: Quantification of biodiversity and ESS



- Develops suitable indicators for biodiversity and ESS
- Applies different biophysical, bioeconomic and statistical models based on statistical, experimental and remote sensing data

## WP 3: Stakeholder involvement and scenario development



- Analyses expectations and perceptions on policies and bio-diversity and ESS objectives for the development of scale-specific and case study-specific land use scenarios

# Work packages III

## WP 4: Optimisation

- Integrates models into multi-objective optimization routines to identify synergies and trade-offs
- Uses the identified ‘optimal’ solutions together with policy options and scenarios to analyse which assumptions need to be modified to navigate closer to the optimized land management

## WP 5: Synthesis and learning environment

- Embeds the different tools applied in the project in a learning environment to facilitate the exchange of knowledge and methods between researchers, stakeholders and a wider public

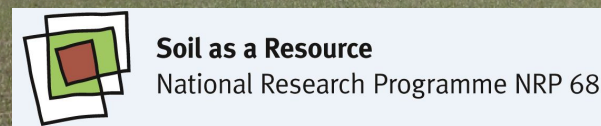
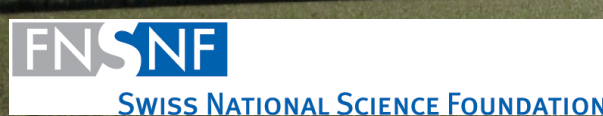
# Products (deliverables)

- Report on policy and land-use scenarios
- Report on policy objectives and the policy framework
- Report on representativeness of case studies
- Set of quantified indicators for ESS and biodiversity
- Report on policy options (to reconcile food production, biodiversity and ESS provision)
- Learning environment for exchange of knowledge and tools between research, policy and practice
- Synthesis report on project findings and tools to support policies



# Organisational structure

- **General Assembly** as the ultimate decision making body of the consortium.
- **Executive Board** as the supervisory body for the execution of the project.
- **Project Office** managing the day to day **administrative and financial coordination** of the project



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