

# EO 4 Ecosystem Accounting 2022 Evaluating Agroecosystem Services with the DAKIS Decision- Support Framework

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# The DAKIS Decision-Support Framework

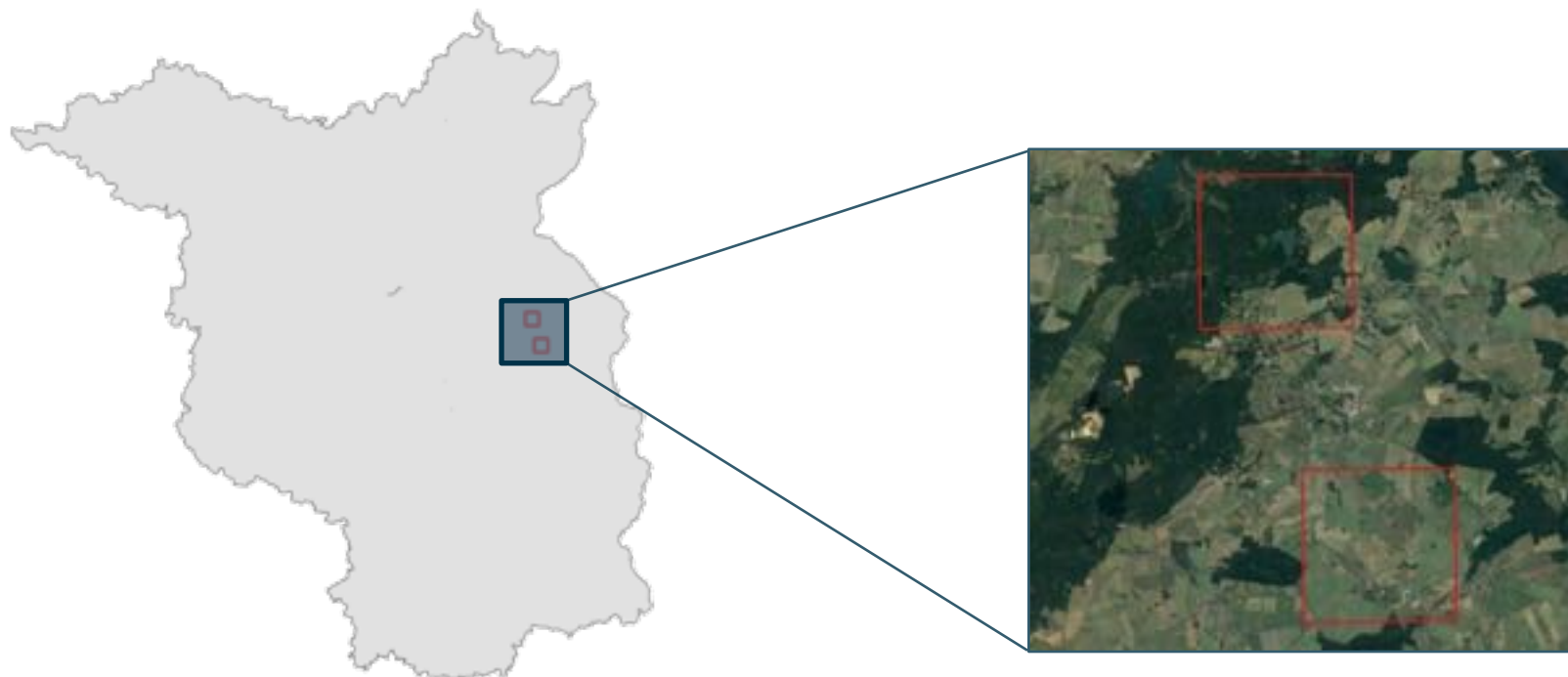


The DAKIS vision: agricultural landscapes of the future

Agriculture faces major challenges.



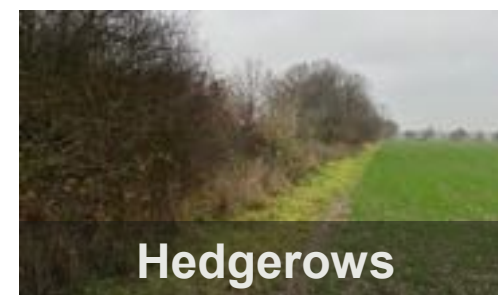
## Use Cases



Brandenburg 5km x 5km landscape windows



Vegetation Strips



Hedgerows

- NDVI
- CORINE / Invekos

Yield / biomass potentials

- DEM
- CORINE / Invekos

Water erosion risk

- CORINE / Invekos

Pollination potential

- CORINE / Invekos

Habitat heterogeneity

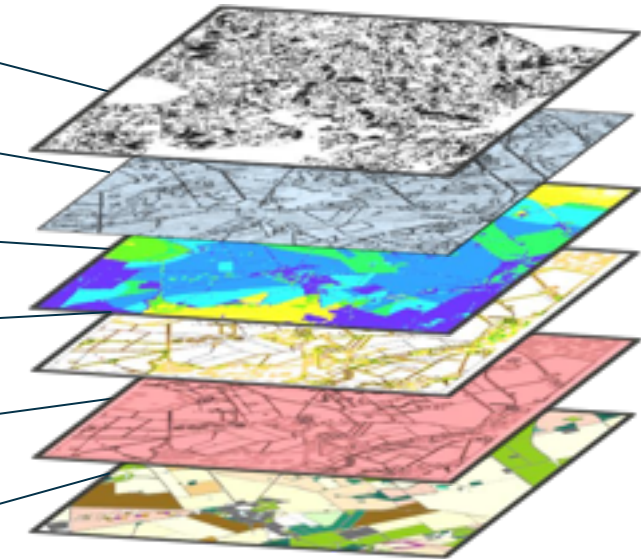
- CORINE / Invekos

ABG carbon sequestration potential

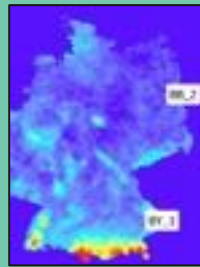
- CORINE / Invekos

Crop-specific land-cover

Marvin Melzer, Marco Donat, Linn Schaan, Christopher Marples, ZALF

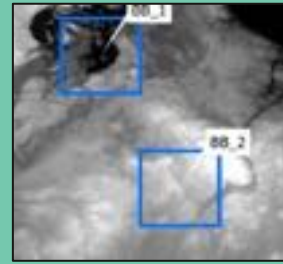


Integration of relevant ESS indicators



Rainfall

+



DEM

+



Soil

+



Land use

+



Water



## Example:

Modelling **water erosion risk** using the InVEST SDR model, integrating EO-inputs and public data



Melzer & Bellingrath-Kimura, 2021

## „Front-End“ ESS prioritization

Scenario 1 =  
Yields + Erosion Protection

Scenario 2 =  
Yields + Biodiversity



Field-specific  
recommendations



## „Back-End“ Modelling & computation

Scenario 1 = **Grassland**  
conversion hotspots

Scenario 2: **Hedgerow**  
conversion hotspots

Rule-based  
analysis



Decision-support for farmers that accounts for ESS / biodiversity

# EO challenges, opportunities & recommendations



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<https://adz-dakis.com/en/>

