EO 4 Ecosystem Accounting 2022

Mapping Ecosystem Physical Accounts to Support Agri-environmental Monitoring

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Motivation

The new Common Agricultural Policy - CAP (2023-2027)

Council adopts fairer, greener and more performance-based farming policy

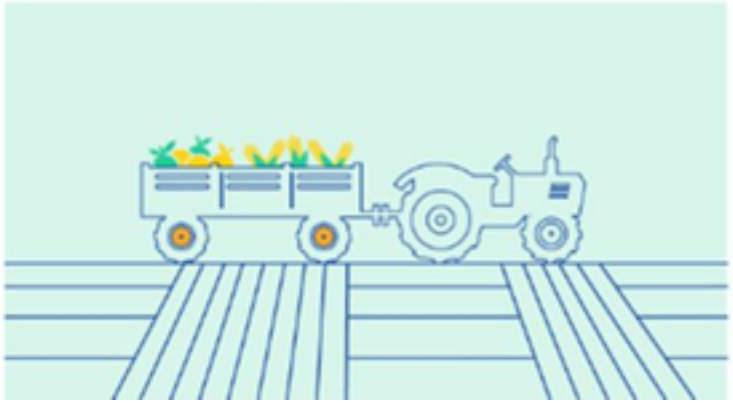
The Council has formally adopted the new common agricultural policy (CAP) which will apply for the period 2023-2027.

The new CAP seeks to:

- enhance the contribution of agriculture to **EU environmental and climate goals**
- provide more **targeted support** to smaller farms
- allow greater **flexibility** for member states in adapting measures to local conditions

The three regulations that make up the CAP reform package were signed by both the Council and the Parliament and were published in the Official Journal on 6 December 2021. The new policy will apply in full in 2023.

Infographic - A fairer, greener and more performance based EU agricultural policy



Motivation

CAP National Strategic Plans

EU FUNDING RESERVED FOR	In EUR
Young farmers (generational renewal)	53 757 114
Environmental and climate objectives under rural development	299 592 938
Eco-schemes under direct payments	438 138 578
LEADER	49 724 133
Complementary redistributive income support	153 704 160

EU FUNDING RESERVED FOR	In EUR
Young farmers (generational renewal)	35 158 587
Environmental and climate objectives under rural development	176 440 073
Eco-schemes under direct payments	279 365 200
LEADER	47 589 703
Complementary Redistributive Income Support	50 396 468

EU FUNDING RESERVED FOR	In EUR
Young farmers (generation renewal)	103 357 244
Environmental and climate objectives under rural development	658 267 435
Eco-schemes under direct payments	679 869 223
LEADER	92 204 301
Complementary Redistributive Income Support	171 635 659

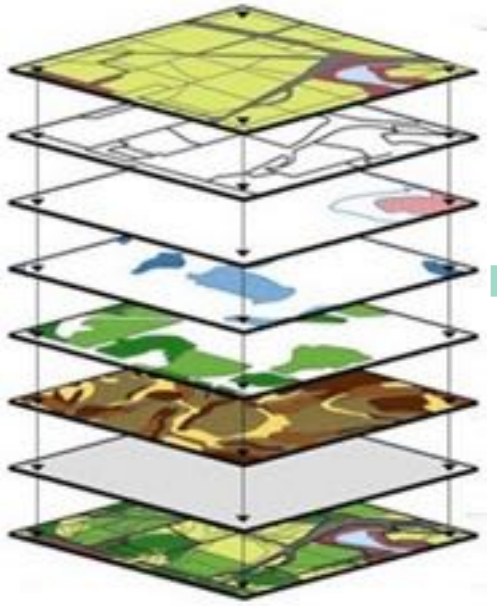
EU FUNDING RESERVED FOR	In EUR
Young farmers (generation renewal)	88 720 000
Environmental and climate objectives under rural development	1 020 757 966
Eco-schemes under direct payments	430 000 000
LEADER	99 459 000
Complementary Redistributive Income Support	130 900 000

Aim and objectives

Scope

Showcase how integrating EO, ES Accounting and ML can contribute towards the monitoring of agri-environmental policies

EO data; Land/Climate monitoring services; National statistics



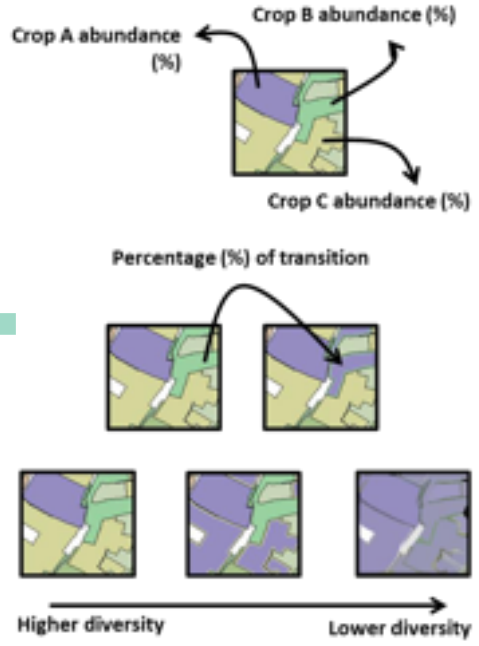
Nutrition biomass
kcal parcel^{-1} year^{-1}

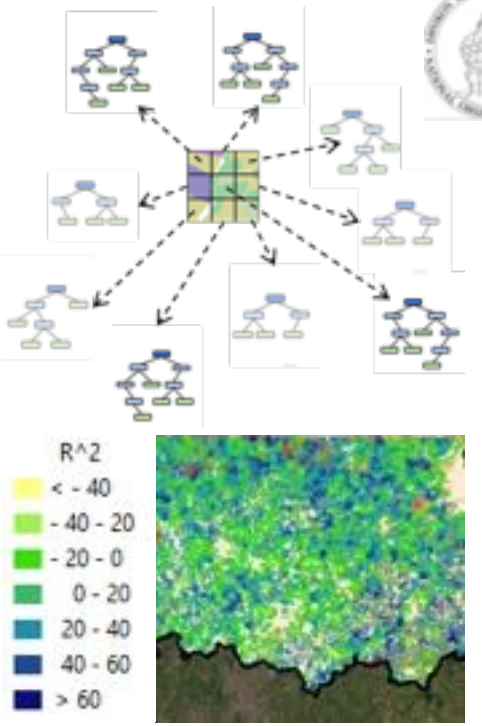
Erosion control
tn ha^{-1} year^{-1}

Climate regulation
g C ha^{-1} year^{-1}

Lifecycle maintenance
dimensionless

Pollination
0-1; 0 indicates lowest supply; 1 indicates highest supply)





Methodology

Data

Satellite downstream products & Land monitoring services

- NDVI, LSWI
- Agricultural Use - LPIS/IACS
- Corine Land Use / Cover
- Forest type
- Riparian zones
- Inland water
- EU-DEM v1.1

Climate change services

- Precipitation
- Temperature
- Solar radiation and irradiance

Other products

- Road network
- Soil Erodibility (K- Factor)
- Floral availability (FA) and Nesting suitability (NS)
- Standard Nutritive Factors
- Crop statistics

ES indicators/proxies

Nutrition biomass
Food supply (kcal parcel^{-1} year^{-1})

Erosion control
Actual soil erosion prevention (tn ha^{-1} year^{-1})

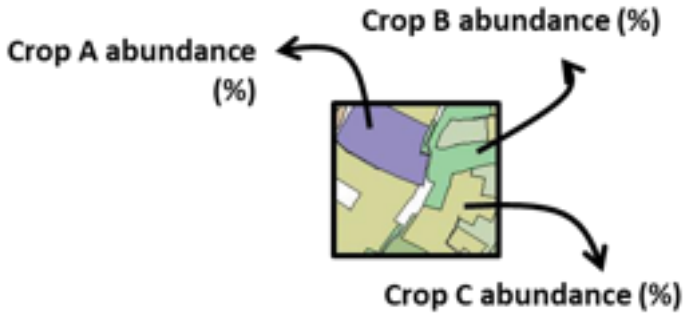
Climate regulation
Carbon dioxide regulation (g C ha^{-1} year^{-1})

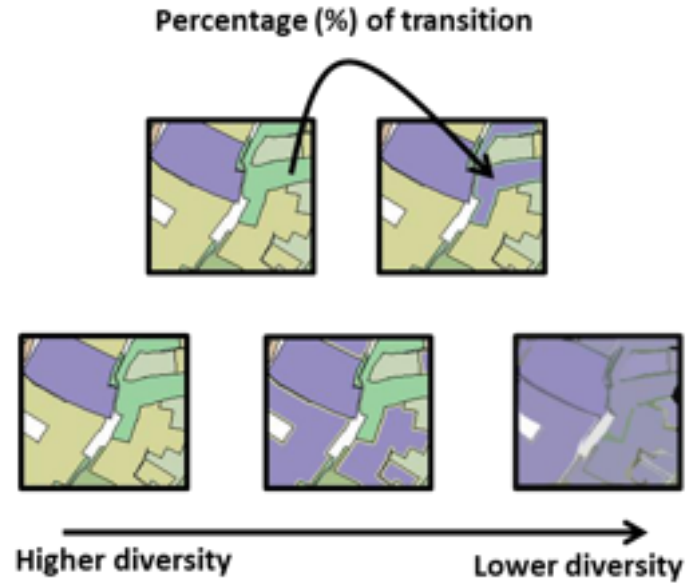
Lifecycle maintenance
Functional diversity (dimensionless)

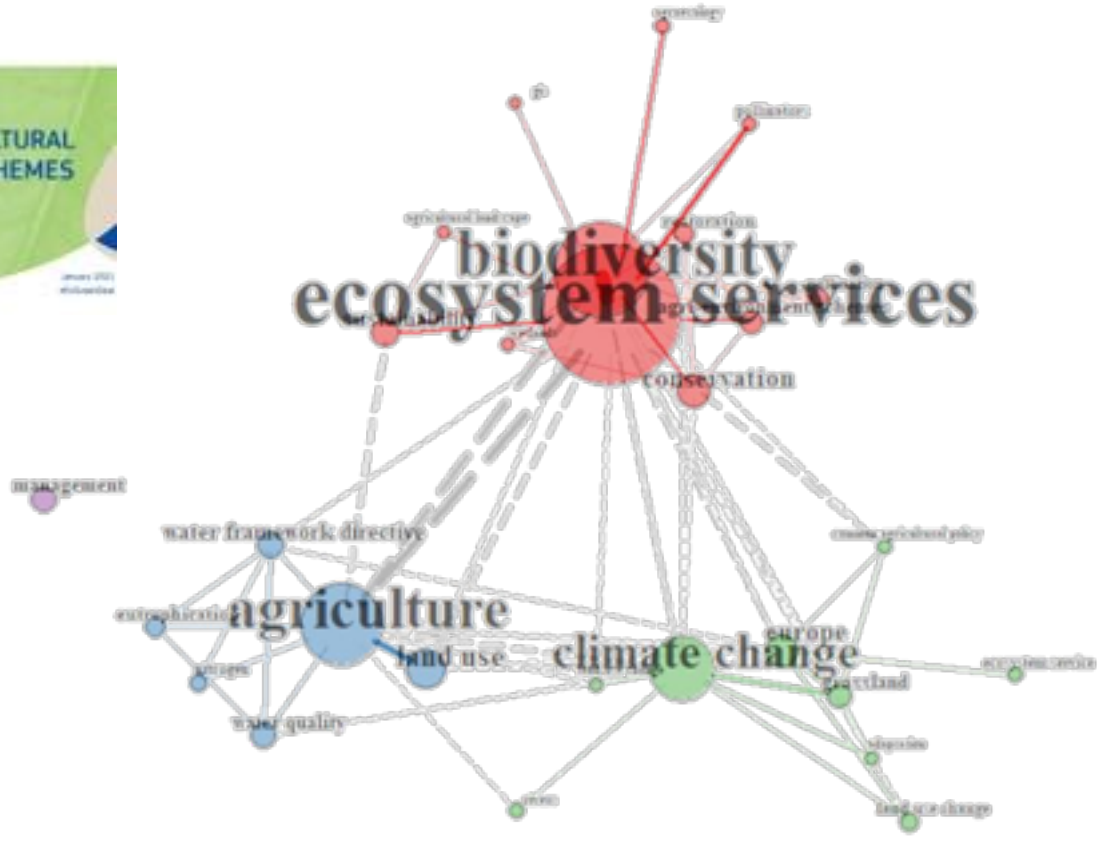
Pollination
Relative pollination potential (0-1; 0 indicates lowest supply; 1 indicates highest supply)

Methodology

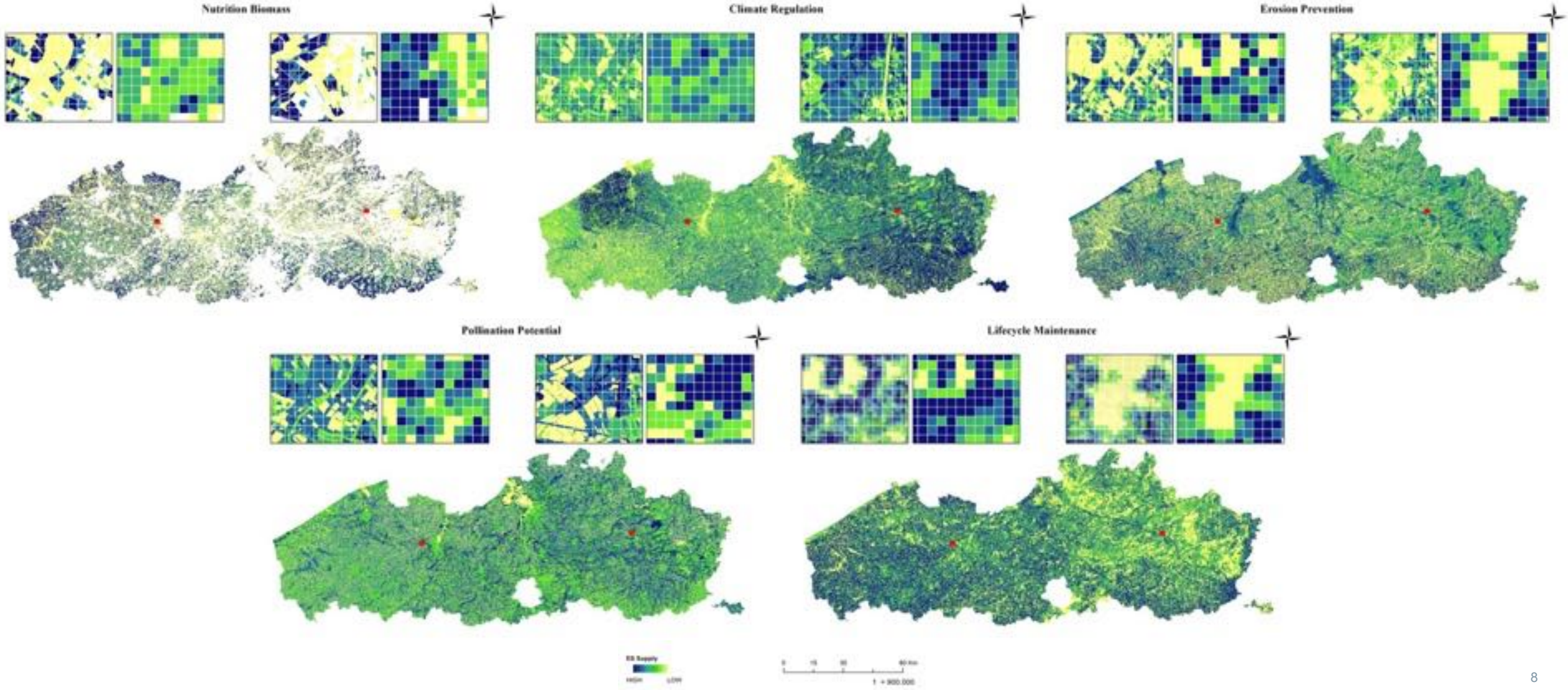
Selecting sustainable management practices



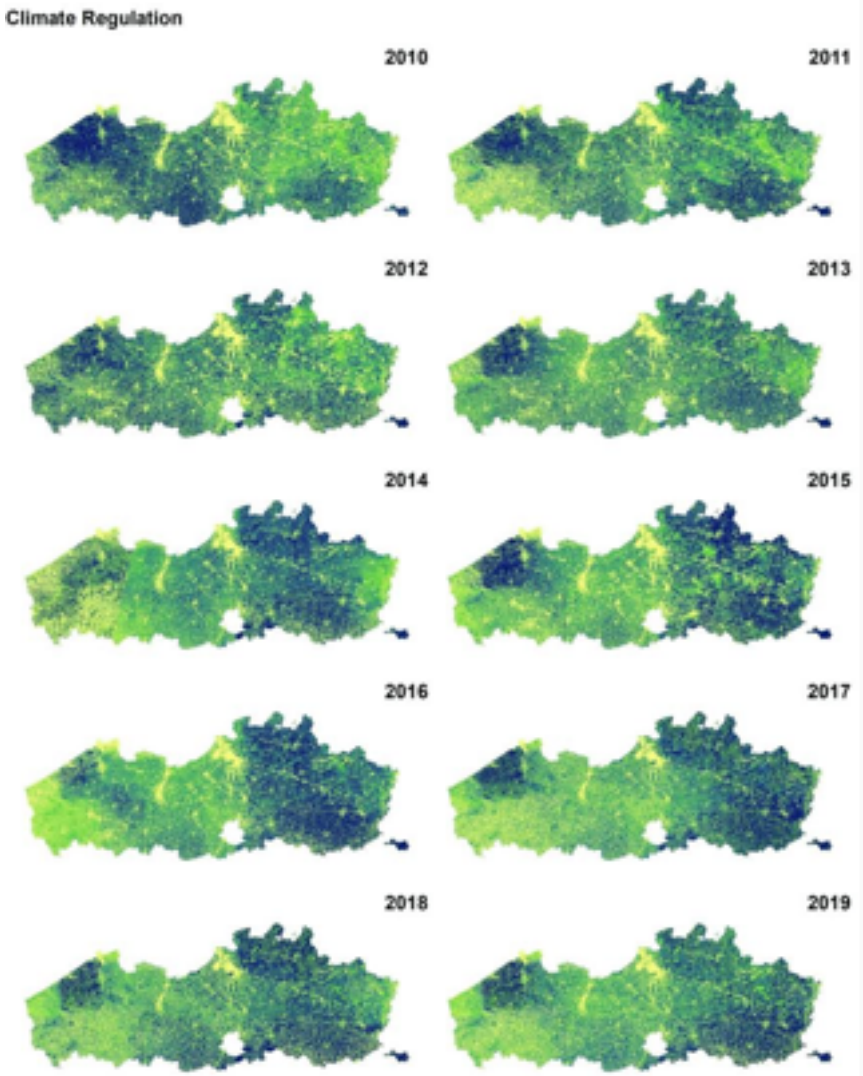


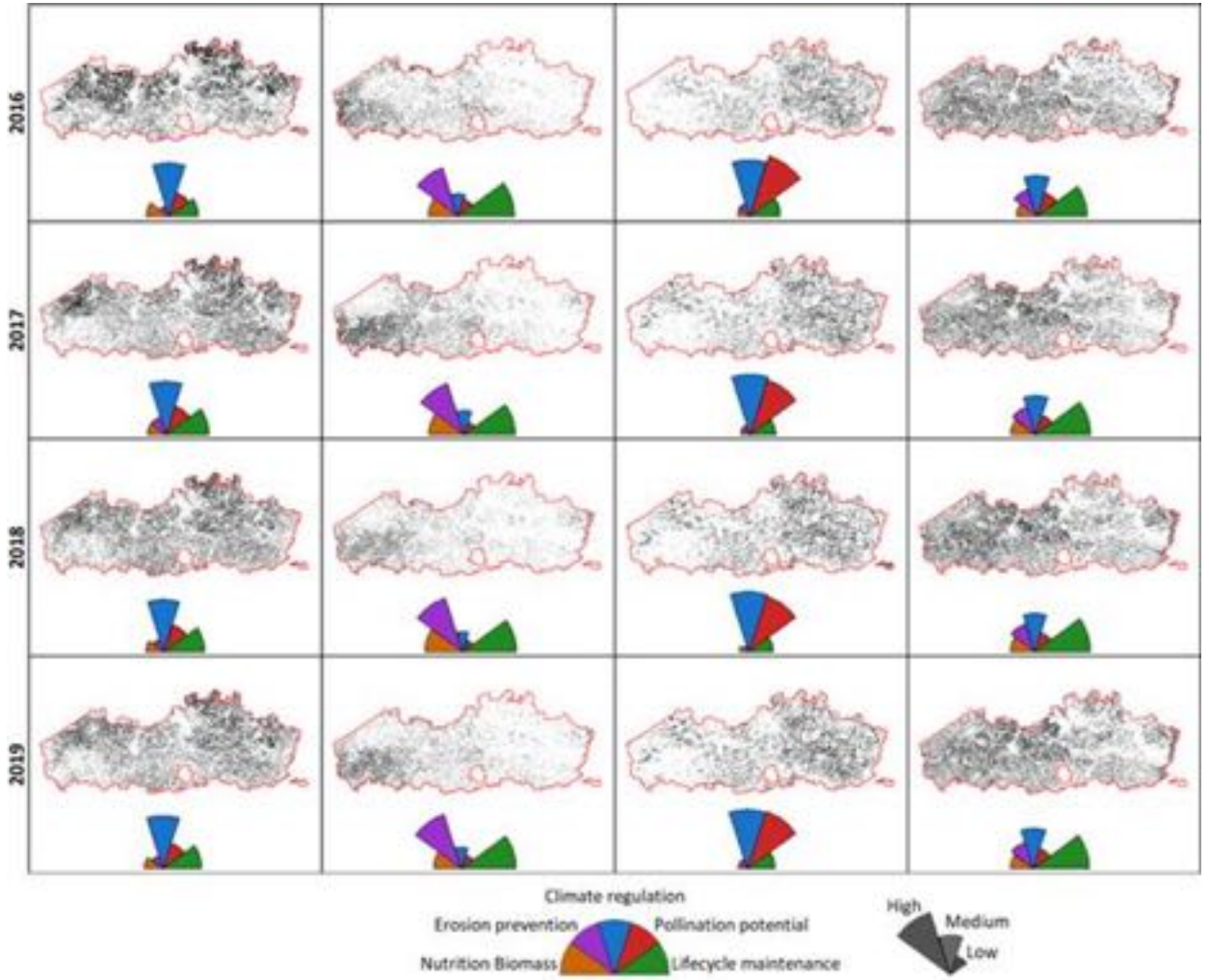


Ecosystem services accounts at regional scale

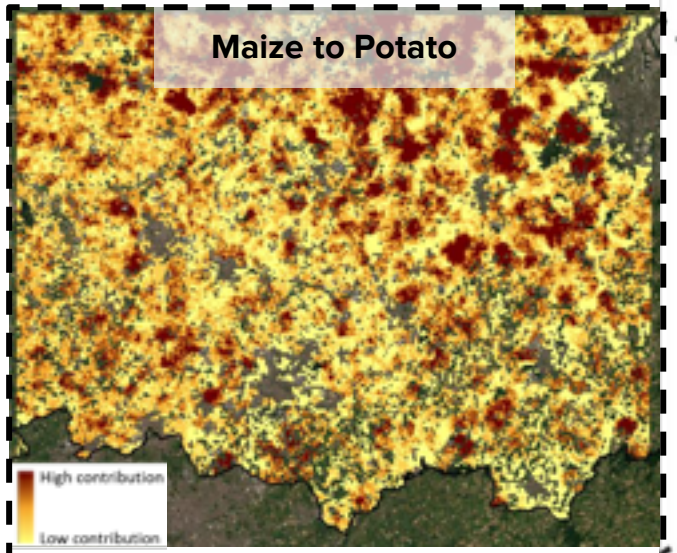


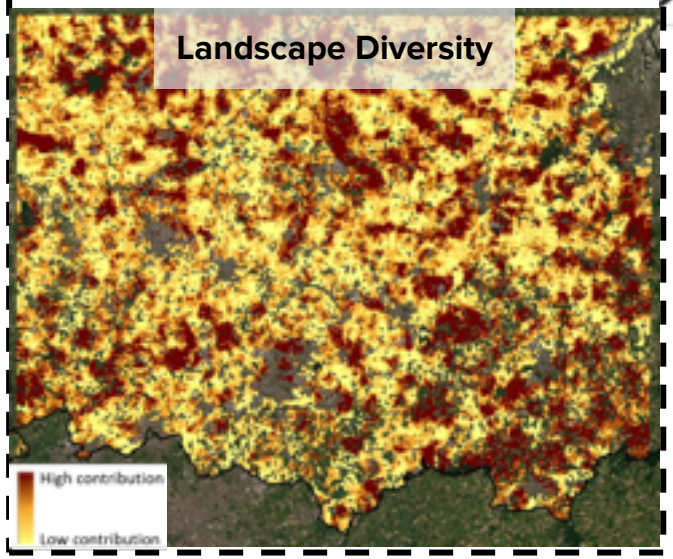
Ecosystem services accounts at regional scale

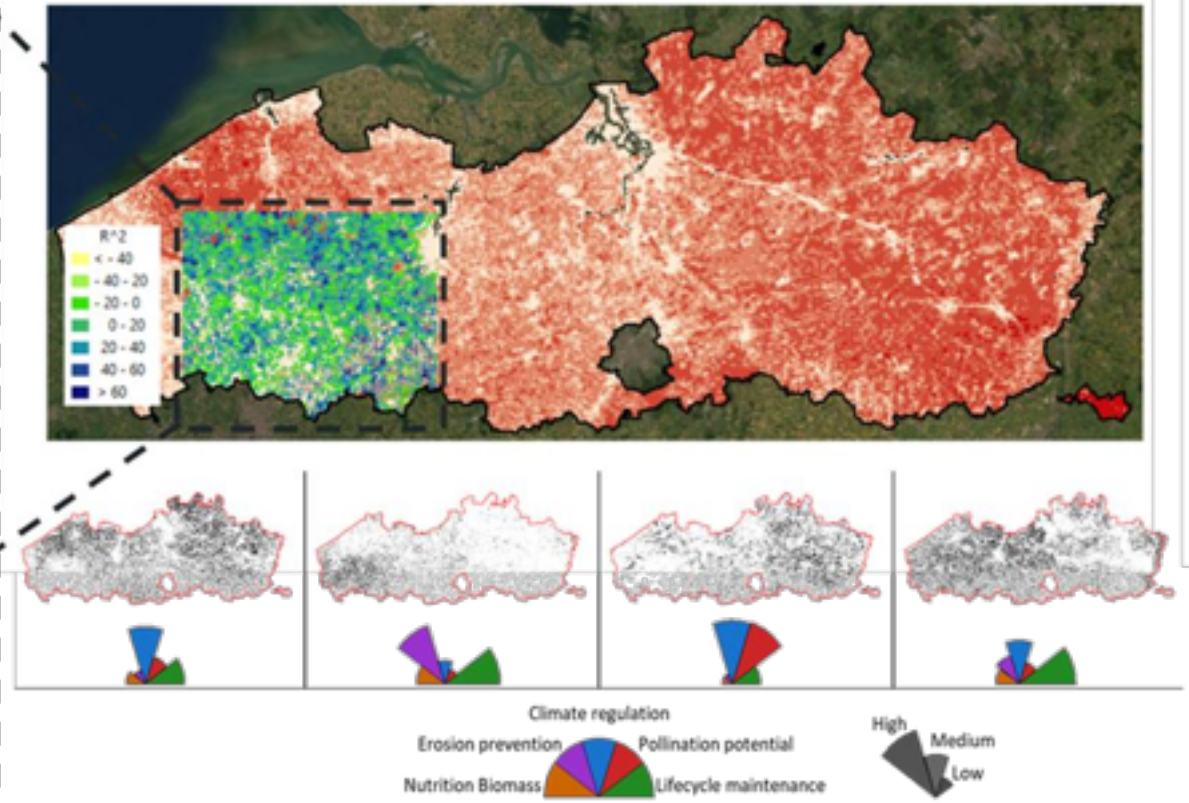


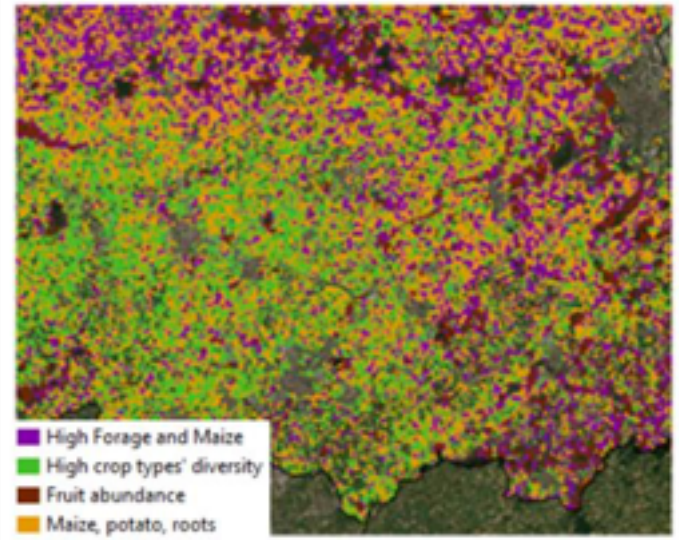


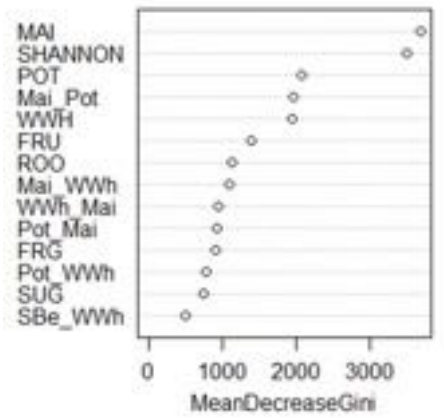
Contributions of agr. management practices to ES











Final remarks

Conclusions

Selecting **relevant** to the study areas **indicators and proxies** can **ensure their use** by end-users, planners and land managers.

Providing **spatial explicit information** on how agricultural management practices may enhance or hinder specific ES or a set of ES **can help plan more sustainable and resilient agriculture**.

There are major advances in the use of EO in mapping agricultural accounts but their **integration into planning and decision-making is still lacking**.

Thank you for your attention!

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