



**FLANDERS**

8 SEPTEMBER 2022, ATHENS

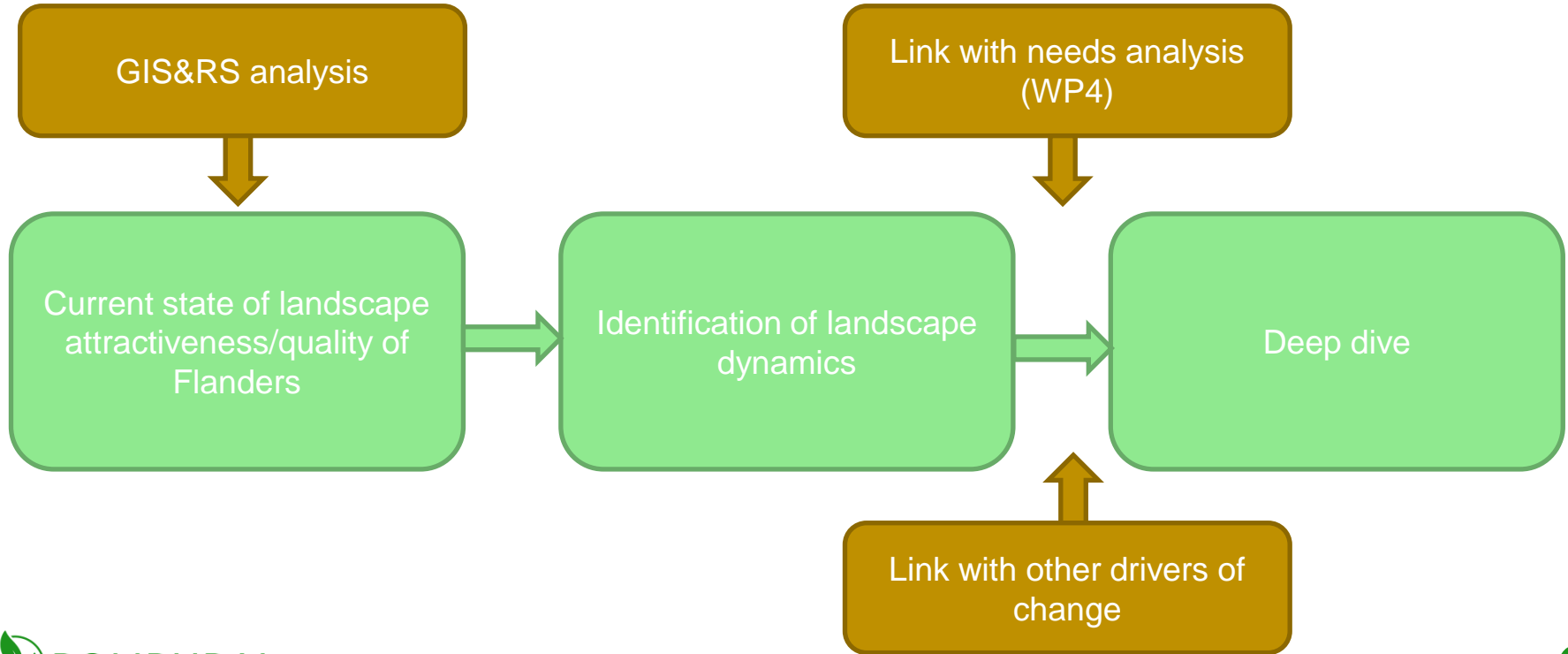


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# Content

1. Lessons learned
2. Main results achieved
3. Action Plan alignment and adoption
4. Pilot case study
5. Technical tools
6. Foresight tools (guides)

# Work logic



# Lessons

- Data driven rural landscape characterisation
  - Several remote sensing indicators are available that allow to evaluate spatial and temporal landscape trends in rural (and urban) areas in Flanders
    - Spatial evaluation: allows to identify regions where urgent action is needed
    - Temporal evaluation: allows to evaluate past, present and need for future rural policy
  - Combing spatial and temporal analysis to elucidate trends and patterns
    - Identify drivers of change
    - Identify topics for deep dives

# Results: Landscape attractiveness a spatial analysis

Landscape attractiveness

Structural quality

- Proportion of land covered by agriculture, nature areas, forest, specific crops, infrastructure
- Agricultural parcel size
- Land cover edge density

Ecological quality

- Biological value of landscape elements
- Crop diversity indices
- Age of grasslands

Management quality

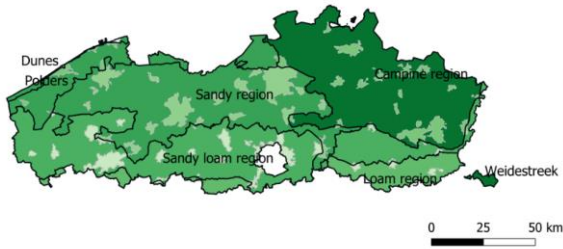
- Proportion of land covered by small landscape elements
- Number of erosion control measures
- Number of Agri Environmental Agreements
- Fraction of bare fields in winter

# Results: Landscape trends a starting point for deep dive

## Structural quality

- Slight decrease in agricultural area
- Decrease in dominance grassland, maize and cereals

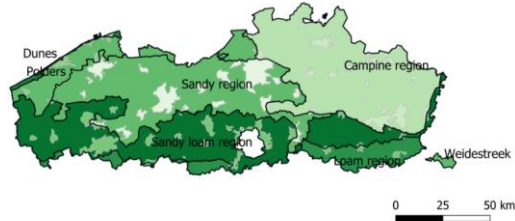
a) Structural quality score



## Ecological quality

- Decrease in crop diversity

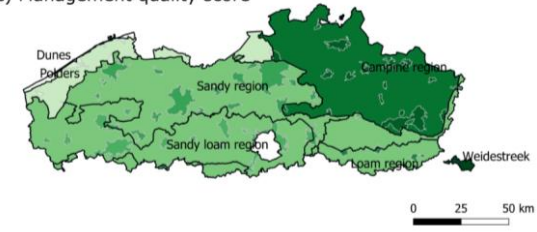
b) Ecological quality score



## Management quality

- Sharp increase AEA

c) Management quality score



Darker  
green=higher  
score

- Large differences in landscape quality in (i) rural versus urban areas and (ii) between the seven agricultural regions
- observed trends and spatial variation in landscape attractiveness can be used as a tool to support policy analysis, assess the potential effects of future policy plans, identify policy gaps, and evaluate past landscape policy

# Results: deep dive in grasslands

## Drivers of change

- Climate change
- Biodiversity loss
- Nutrient pollution

## Permanent grasslands

- Soil organic carbon
- High biodiversity
- Soil erosion measure
- Nutrient loss

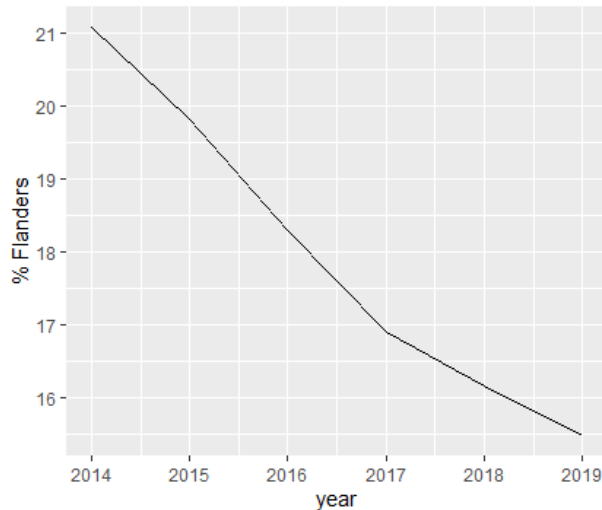
## Knowledge for policy

- Age grasslands?
- Location and trends in old grasslands?
- ...

RS analysis of permanent grasslands from 2005-2019

# Result: grassland dynamics

- historical land classification maps from 2005 to 2019 allowed to evaluate changes in the area of old grassland in Flanders
  - area of grassland with age  $\geq 10$  years decreased with 6% between 2014 and 2019 in Flanders



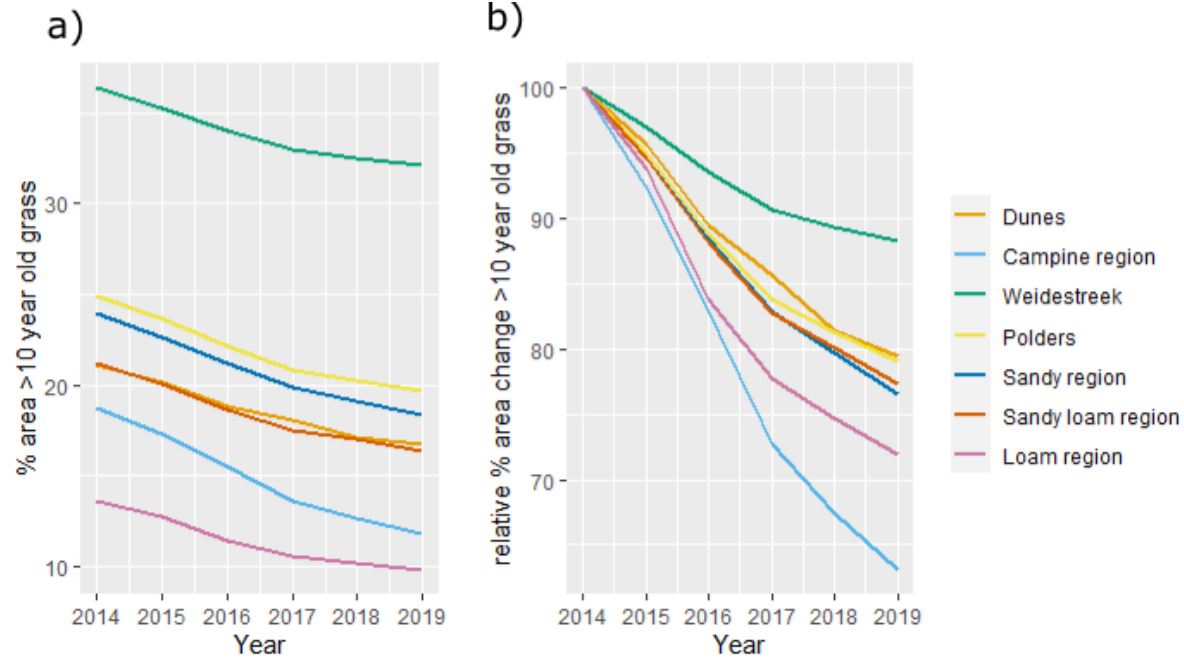
Percentage of grassland area with age  $\geq 10$  years from 2014 to 2019 in Flanders. The area of grasslands with age  $\geq 10$  years was derived from the historical classification maps from 2005 to 2019.



# Result: grassland dynamics, regional differences

- Differences between rural and urban areas and different agricultural regions of Flanders
  - permanent grasslands were less frequent in urban areas compared to rural areas in Flanders
  - permanent grassland disappeared faster in urban areas compared to rural areas between 2014 and 2019
  - permanent grasslands decreased in all seven agricultural regions but the dynamic was found to be different in the seven agricultural regions

# Result: grassland dynamics, regional differences



# Result deep dive in irrigation use

## Drivers of change

- Climate change
- Depletion of ground soil water
- Urbanization
- Soil sealing

## Agriculture

- Increasing need to irrigate crops during summer

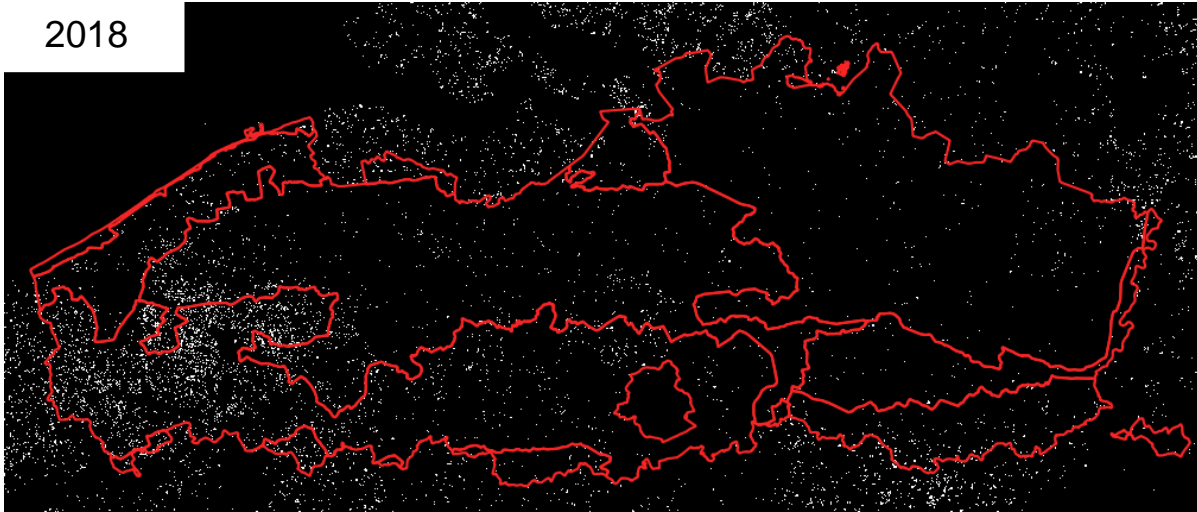
## Knowledge for policy

- Where does irrigation occur?
- Which crops are irrigated?
- ...

RS analysis of irrigation during 2018 drought

# Results: deep dive in irrigation use

2018



- Irrigation is occurring in all regions of Flanders
- Lot of irrigated fields in SW part of Flanders
- Vegetables, herbs and ornamental plants were most frequently irrigated during 2018 drought
- Need for crop specific reference data to finetune model

# Action Plan

Vision: *The overall ambition of the Flanders pilot is to create sustainable climate resilient productive landscapes, balancing agricultural intensification with environmental concerns and climate resilience. The ambition is to develop (1) strategies for supporting climate resilient productive and multi-functional rural landscapes and (2) more inclusive regulatory tools for land and water management.*

Alignment with Long term vision for agriculture:

- *Resilient: The preservation of natural resources, the restoration of landscapes, including cultural ones, the greening of farming activities and shortening supply chains will make rural areas more resilient to climate change, natural hazards and economic crises*
- *Prosperous: Promoting farming practices that enhance the provisioning of eco-system services (i.e. Eco-schemes) ( -> Improving the value added of farming and agri-food activities)*
- *Stronger: Deep dives on grassland and irrigation can be linked to existing services such as the water radar, watch it grow, alternative water supply for irrigation and history of a parcel (~age of grasslands) (tools under development in other projects)*
- *Connected: Not our current focus but a mobility scoring system already exists (Mobi score)*

# Action Plan

To be successful Action Plan must be adopted by key policy stakeholders. How do you intend to facilitate adoption and how would successful adoption look like?  
Please give examples

- Service development in existing and new projects
- Discussion with stakeholders (department of agriculture, Flemish land Agency, the environmental agency, regional landscapes, farmers union)

# Case study

- How do you intend to use your case study from the compendium?
- Published : there is already one publication available, another is in the pipeline:  
*Vannoppen, A.; Degerickx, J.; Gobin, A. Evaluating Landscape Attractiveness with Geospatial Data, A Case Study in Flanders, Belgium. Land* **2021**, 10, 703.  
<https://doi.org/10.3390/land10070703>
- Disseminated: via social media

# Tools

How do you intend to use these tools after the project?

- We will follow the further development of the tools with great interest because it is the integration of all the tools together that is of most interest to the policy makers
- The guides on deep dives and foresighting are of particular use to the department of agriculture