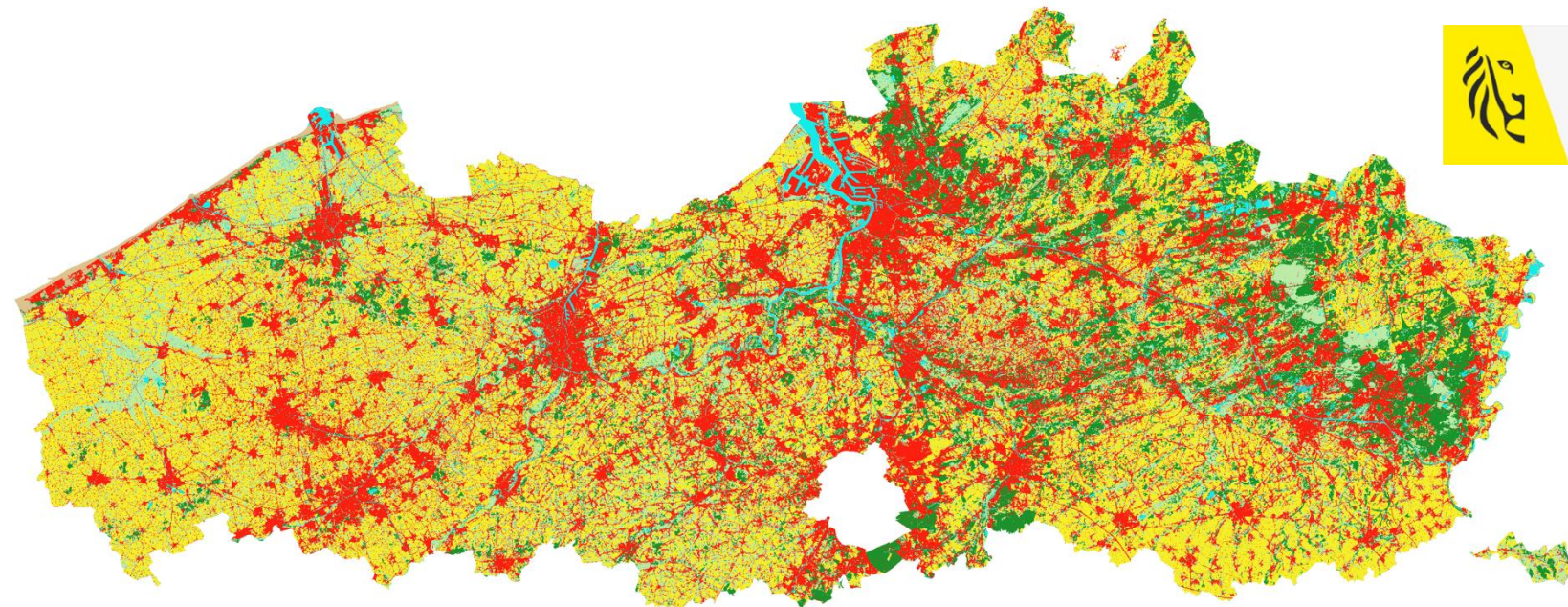




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Redass landgebruiksbestand 2022



08/10/2025

Spatially explicit land-use monitoring for LULUCF in Flanders

Second conference on Earth Observation for Monitoring, Reporting and Verification of Carbon Removals

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VLAAMSE
MILIEUMAATSCHAPPIJ





Current LULUCF Land-use (change)



Land-use in terms of climate adaptation and LULUCF



Spatially explicit land-use monitoring for LULUCF in Flanders

Agenda



Point matrix

- 6.799 points (~200 ha/point)
- 1990 – 2009 – 2012 – 2015
- Inter- and extrapolation

- Wall-to-wall overlay-analysis

Land-use

LULUCF

Climate adaptation



[VITO & KENTER \(2025\)](#)



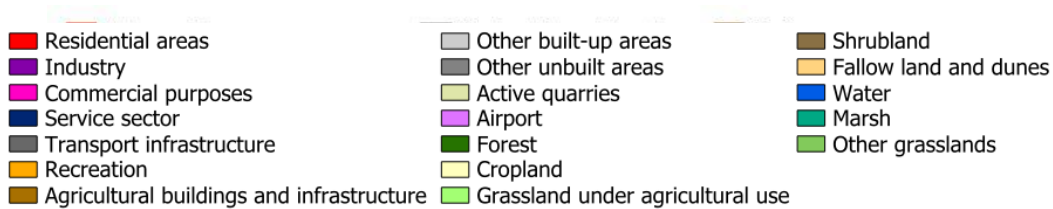
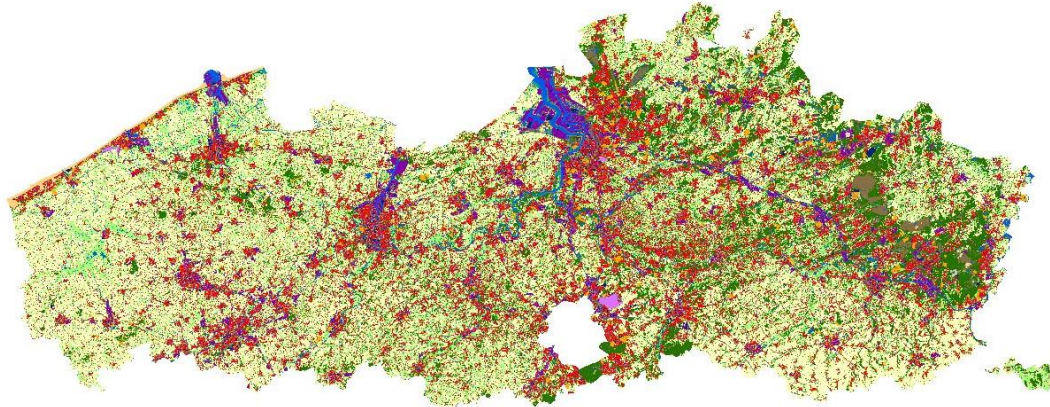
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KENTER

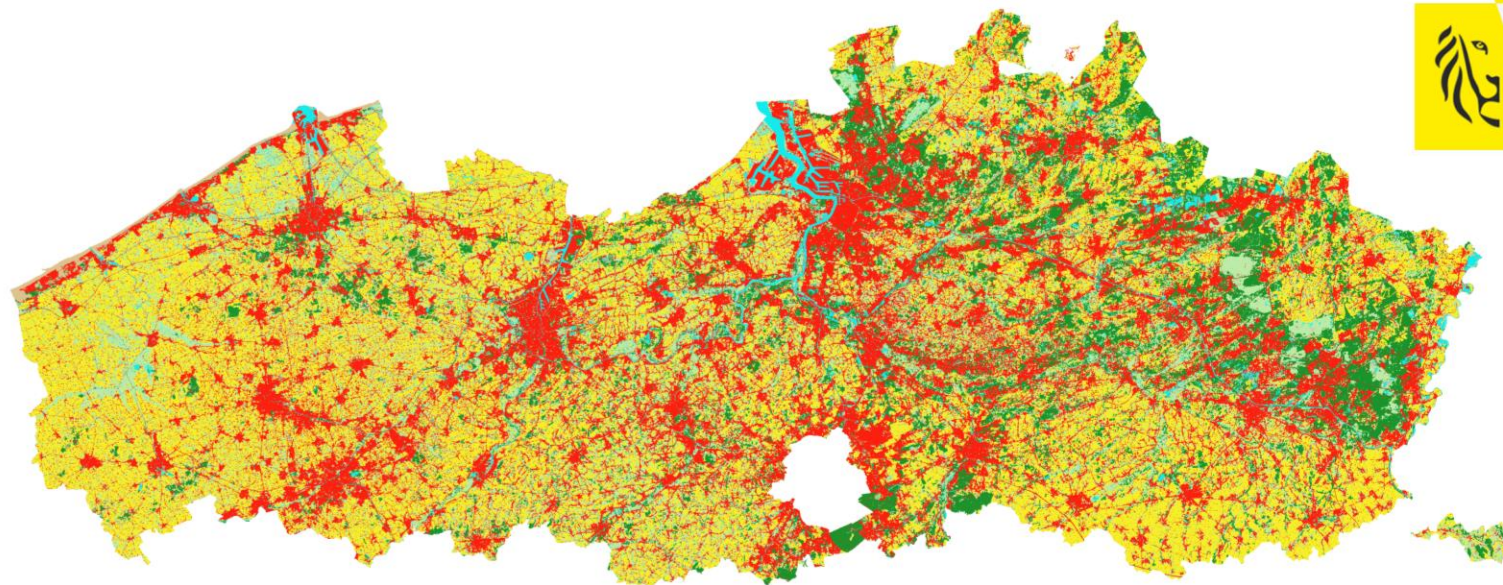


Need for spatial explicit land-use monitoring and a land-use change model



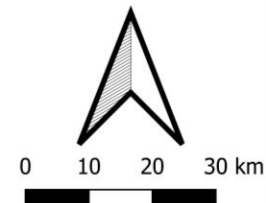
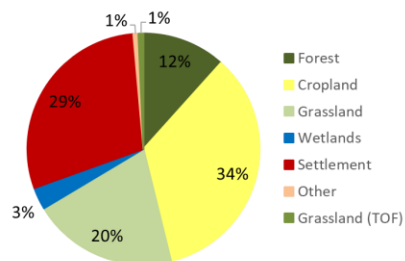
- Land-use maps
 - dOMG & VITO
 - 19 categories
 - Raster (10x10m²)
 - 3 year (2013-2022)
 - Built on existing maps

[Poelmans et al. \(2023\)](#)



LULUCF - reclass landgebruiksbestand 2022

- Forest
- Cropland
- Grassland
- Wetland
- Settlement
- Other
- Grassland (Trees Outside Forest)

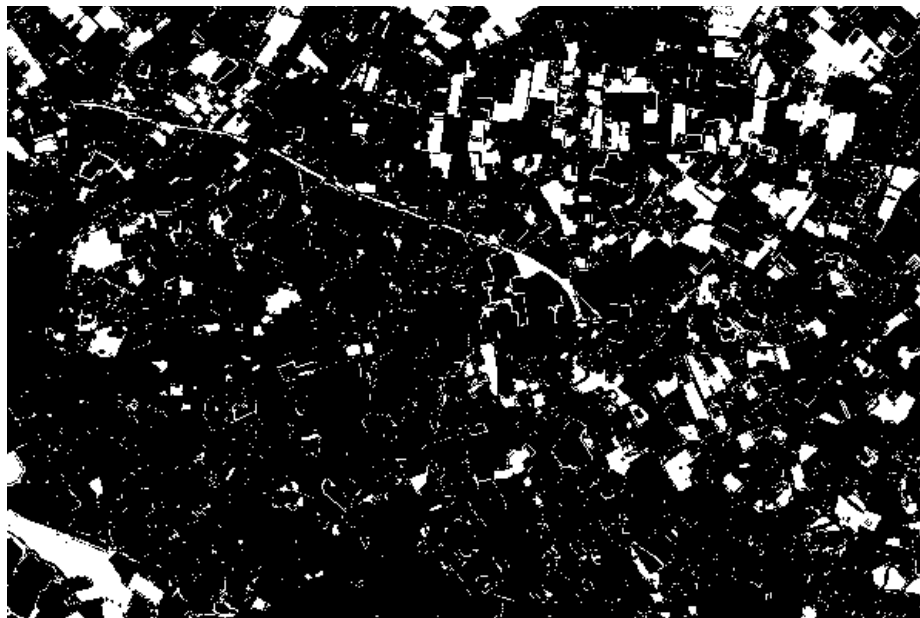




Source	surface area (ha)
Extended wetland ecosystem layer (EEA)	53.575
CLC+ LULUCF instance	23.827
Nature Restoration Regulation	10.457
EUNIS	9.775
Land-use map (open water, marshland, reed bed)	42.195
Blue deal (Decler et al. (2016))	67.899

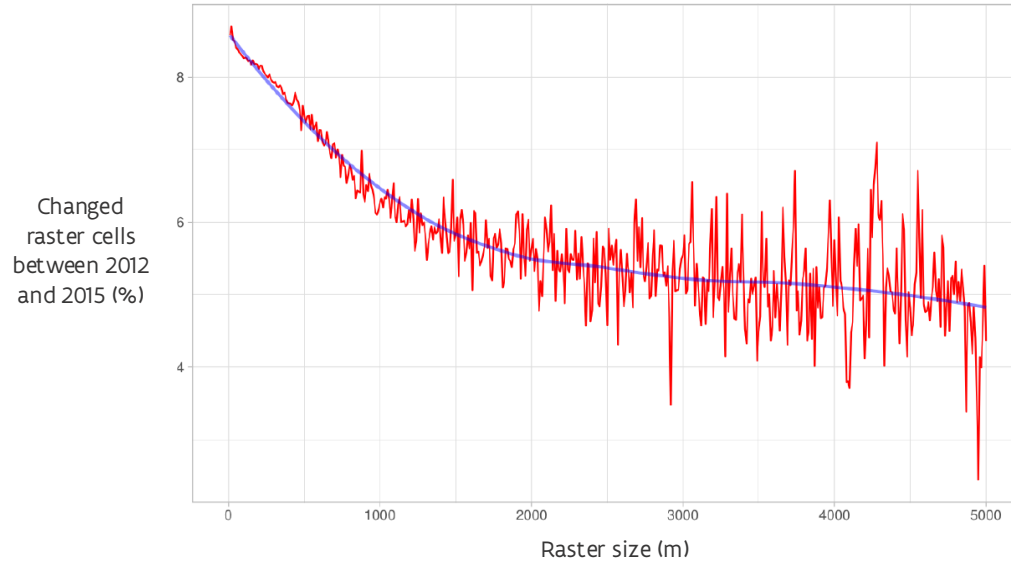


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keyrus

Need for spatial explicit land-use monitoring and a land-use change model

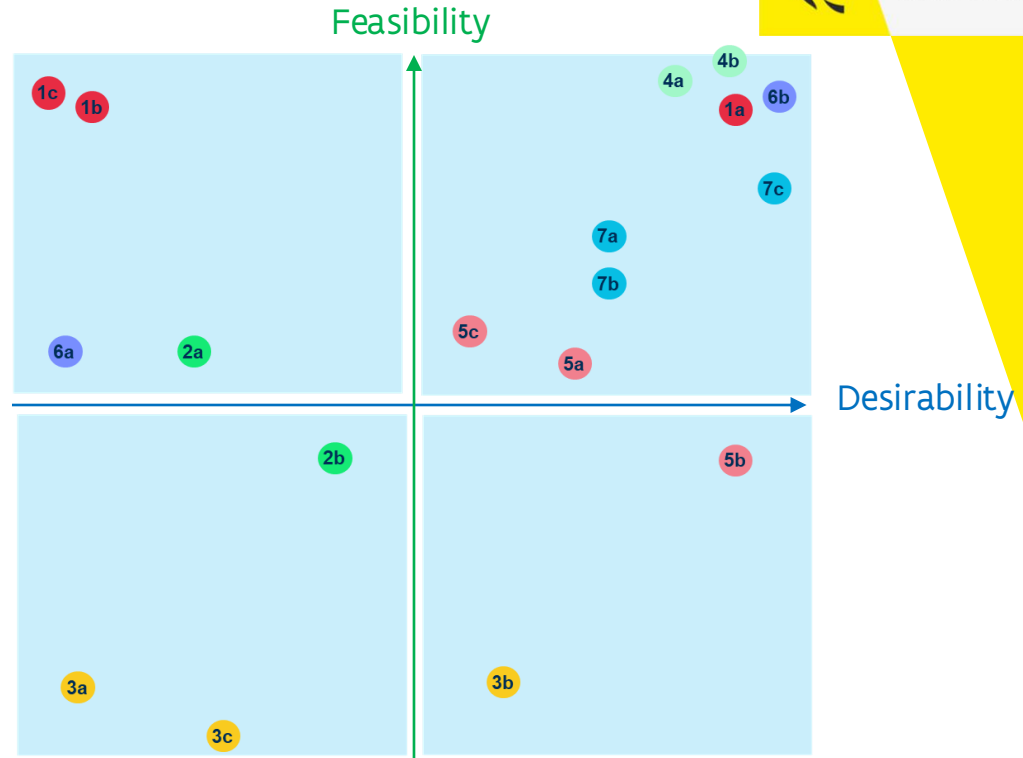


keyrus

Need for spatial explicit land-use monitoring and a land-use change model



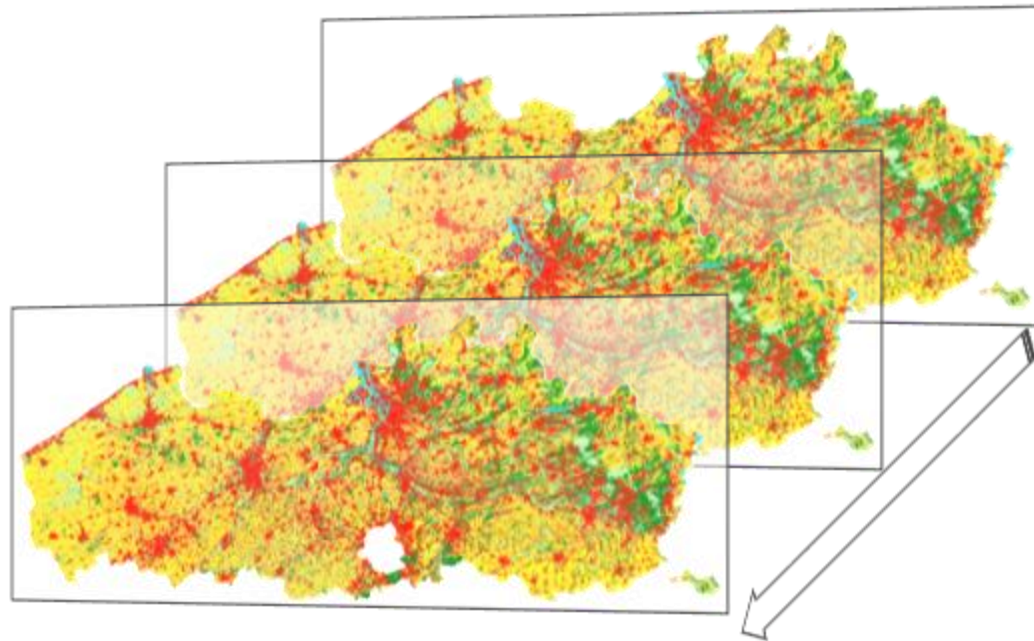
Type-solution	Variant
1. Standard language	a. EAGLE-datamodel
	b. Own semantic datamodel
	c. Tag-model
5. Creation of land use change maps	a. Detecting inconsistent changes
	b. Creating change maps using satellite images/AI
	c. Probability maps



Spatially explicit Land-use LULUCF



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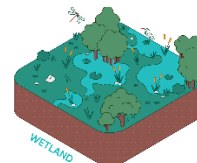
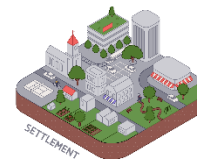
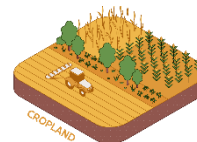
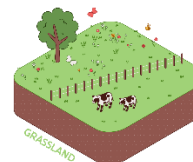
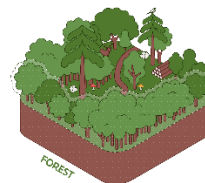
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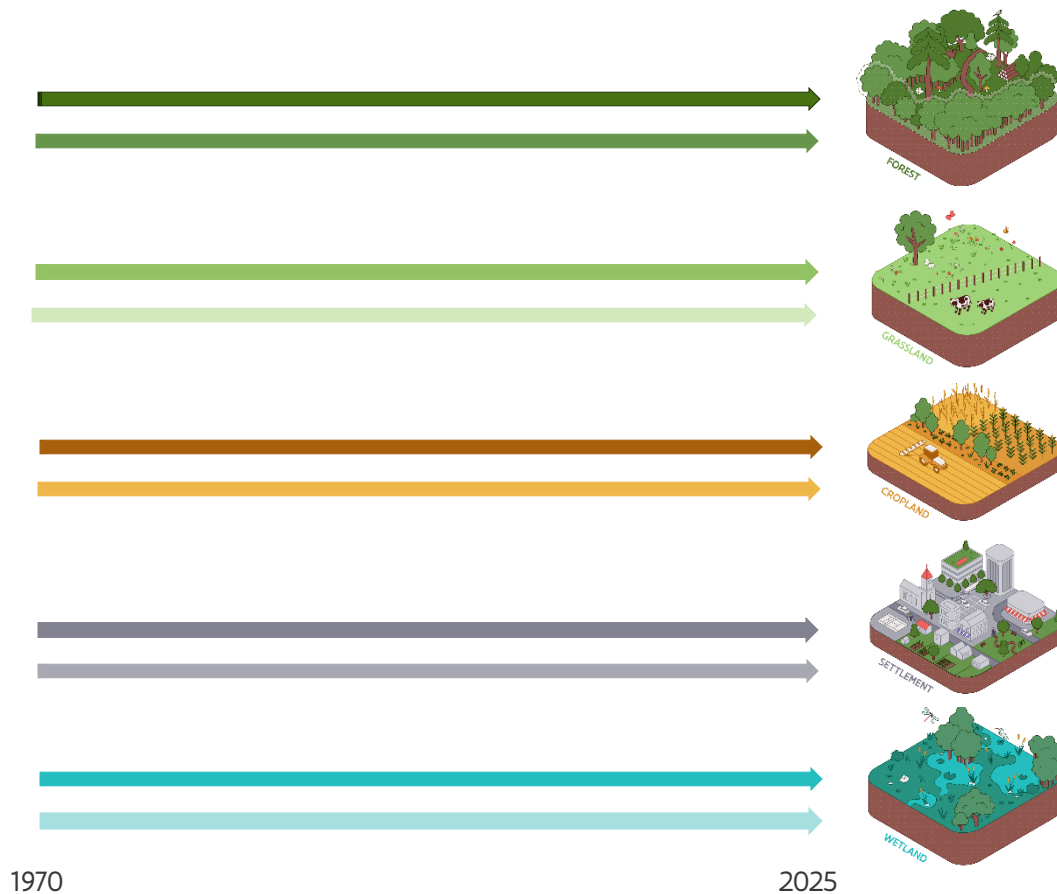
1970

2025

Refine land use categories



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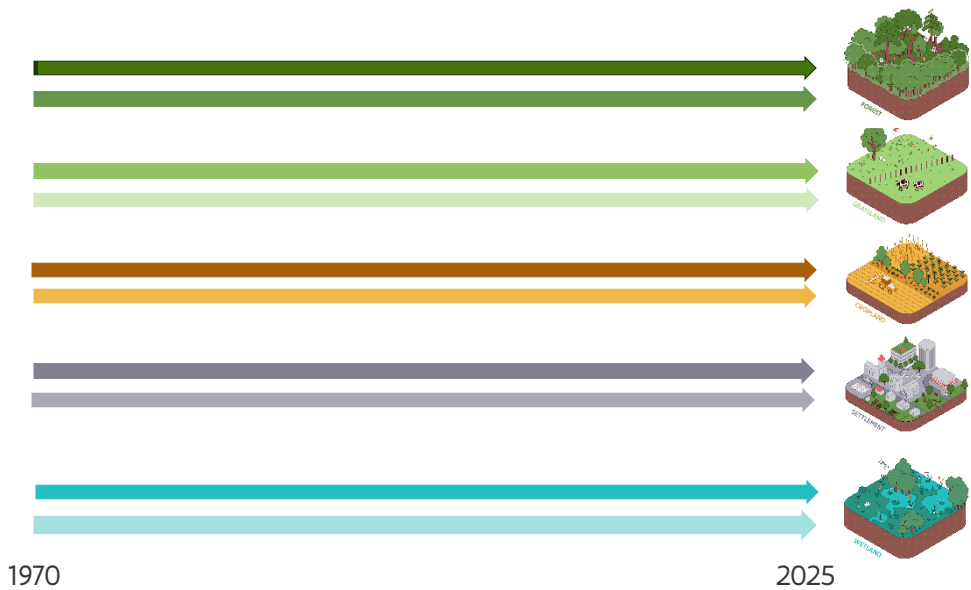


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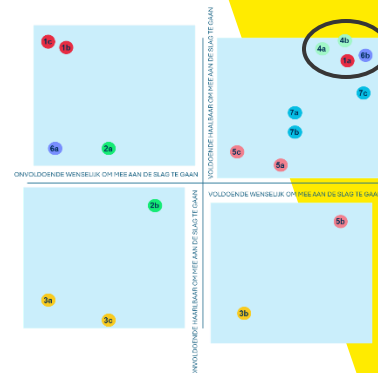
2025

Refine land use categories

EAGLE framework

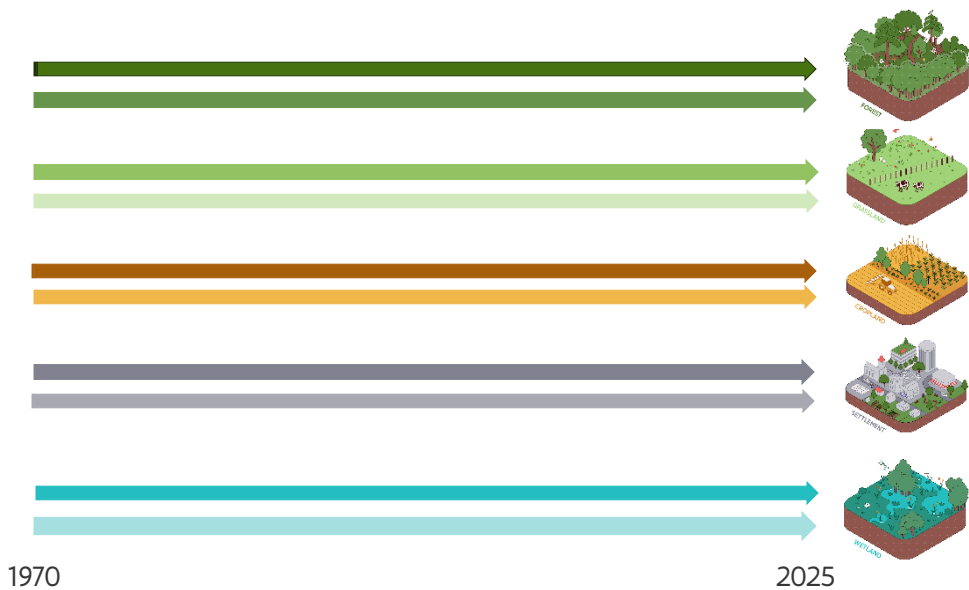


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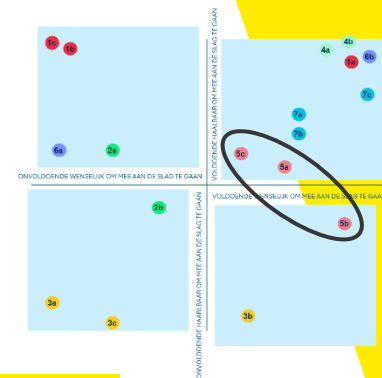


Refine land use categories

EAGLE framework

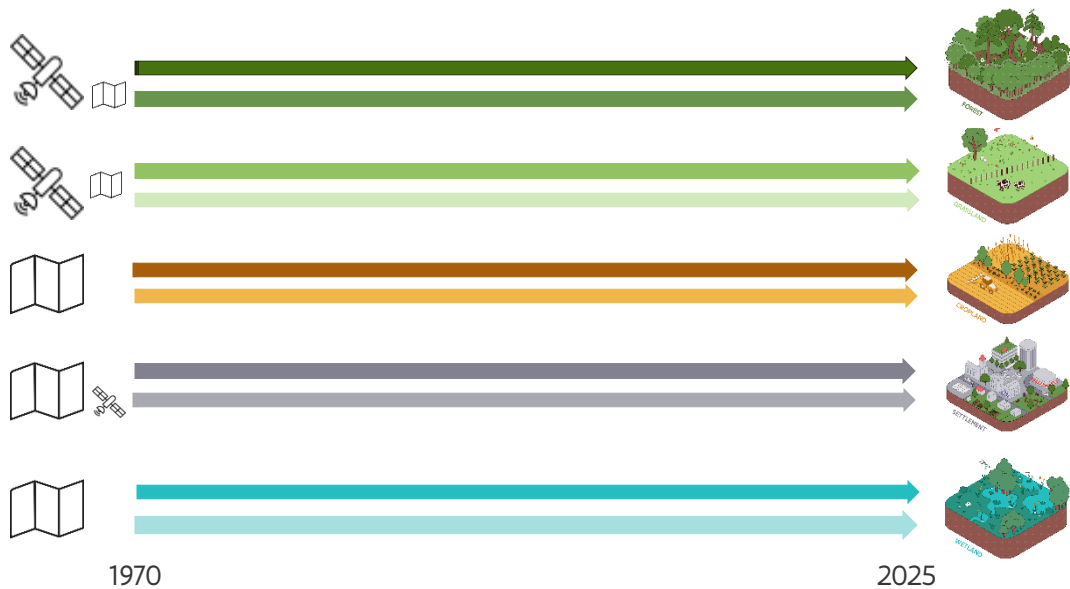


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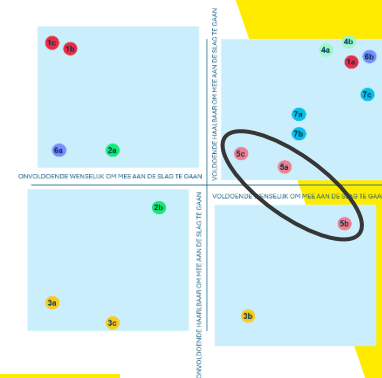


Monitor changes – change detection

EAGLE framework



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Monitor changes – change detection

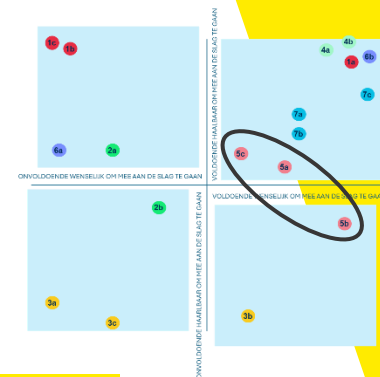
EAGLE framework



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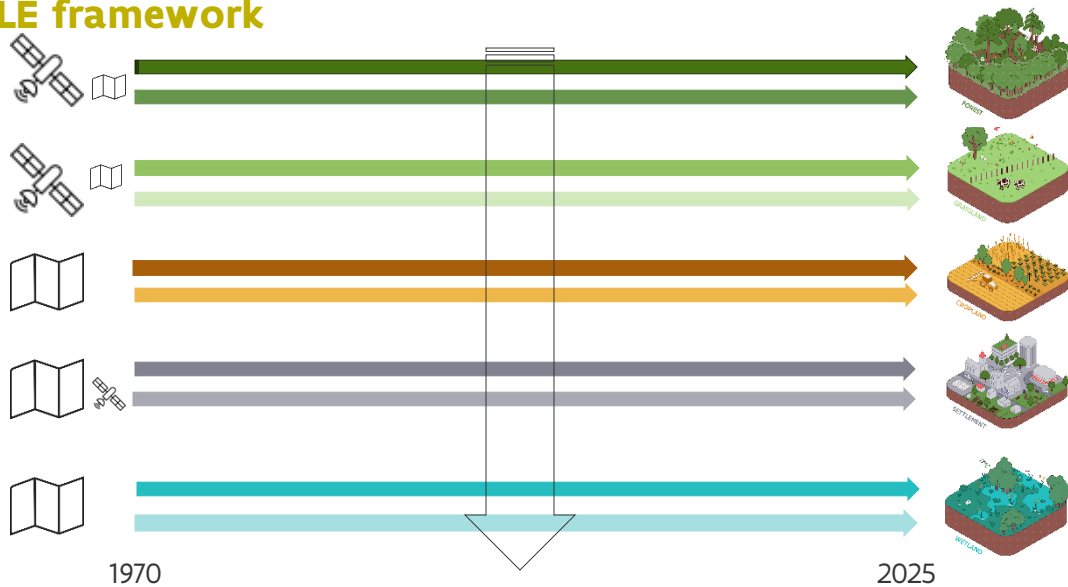


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Monitor changes – change detection - tree crown cover

EAGLE framework

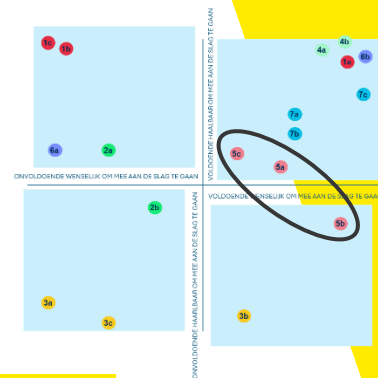


1970

2025



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Combine into yearly LULUCF maps

Contact

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Guillaume.vandekerckhove@vlaanderen.be

Environmental and spatial development department, Flanders