

Northern Campine Regained

Creating a Regenerative Strategy

Wouter Daantje Benjamin Nouwens 4995201

18-06-2025

Metropolitan Ecologies of Place P5 Presentation

Mentors Ulf Hackauf and Rodrigo Cardoso

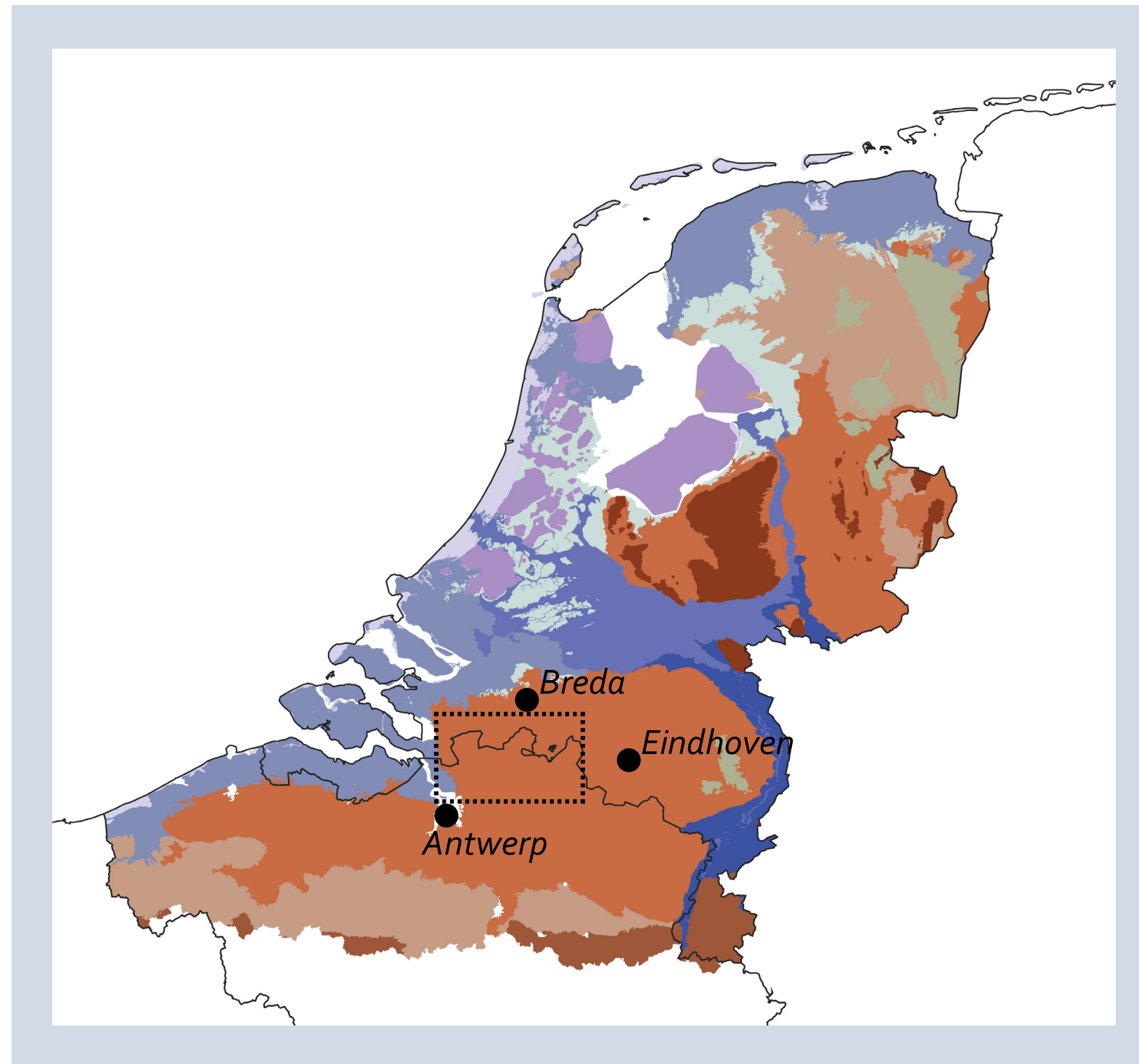
Delegate Angela Greco

Hubert, E.J.J. (1818-1880) "Veen in de Kempen" [painting]. KMSKA

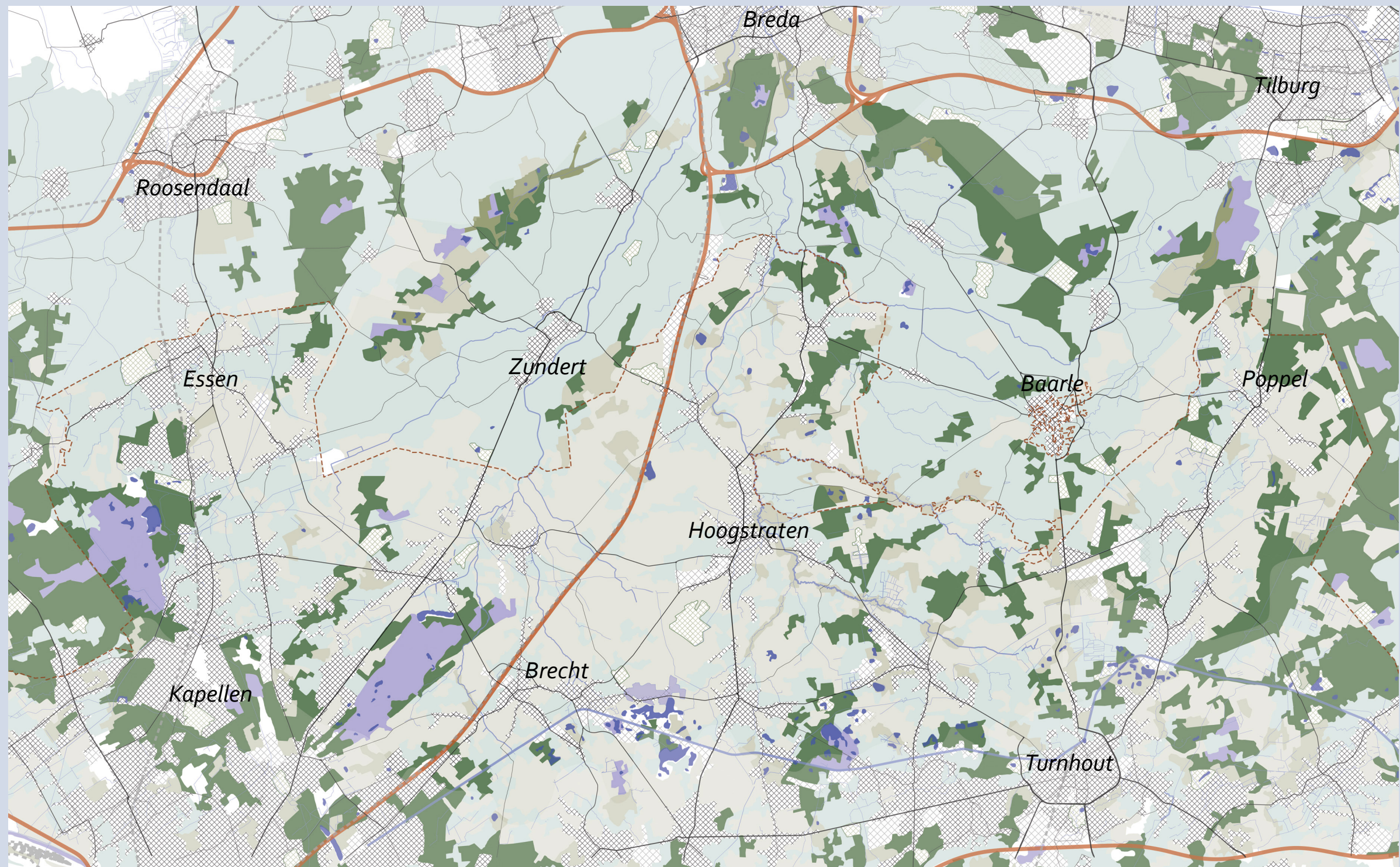








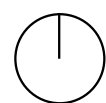
Location of the Northern Campine within Flanders and the Netherlands, focus on soil typologies



Northern Campine illustrating the border, land uses and primary towns

- | | |
|----------------------|-----------------|
| Mixed agriculture | Ponds |
| Animal husbandry | Urban area |
| Mix agri. and nature | Industrial area |
| Fields and shrubbery | Highway |
| Forests | Roads |
| Heaths and dunes | Railway |

0km 5km 10km





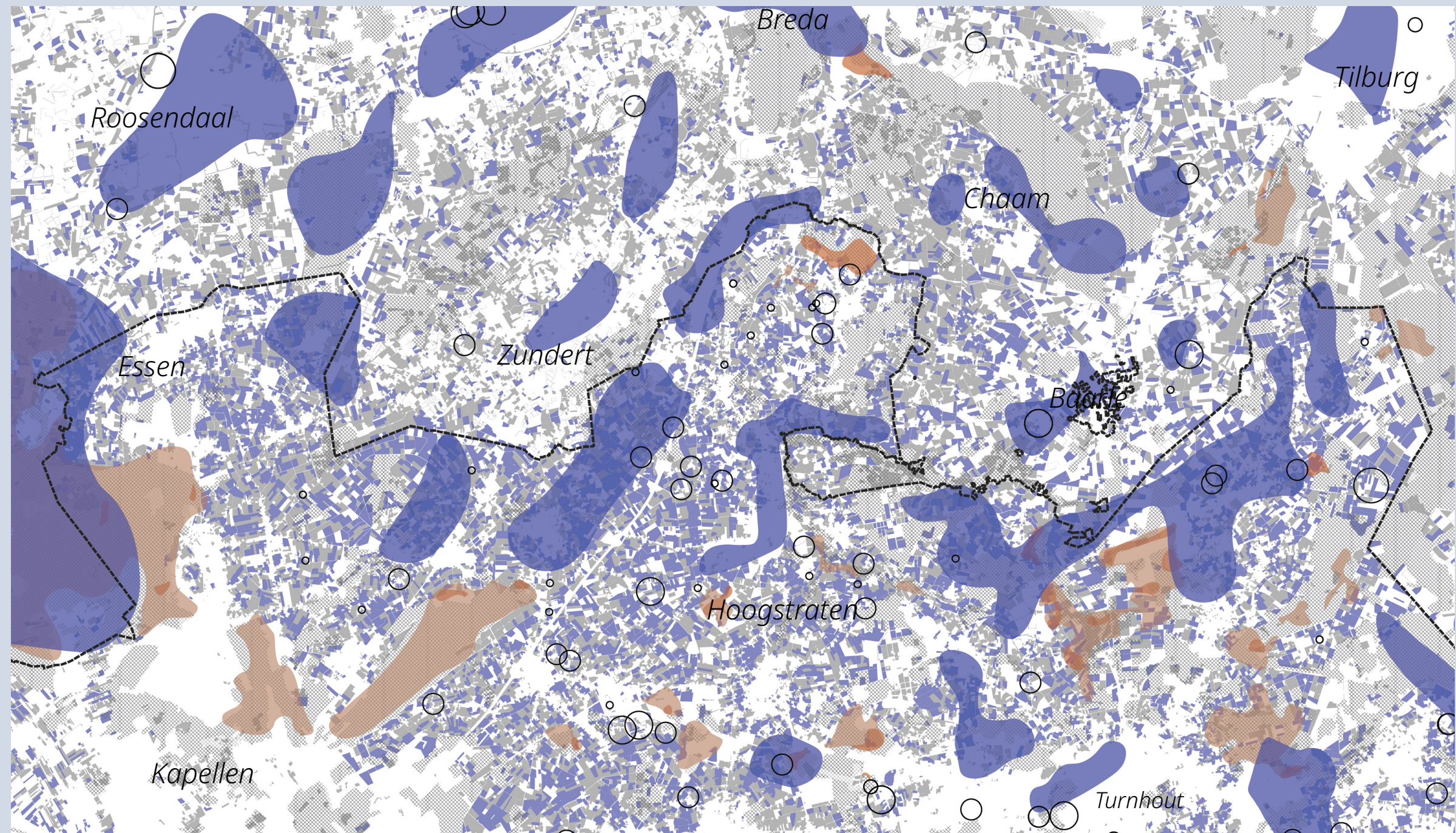




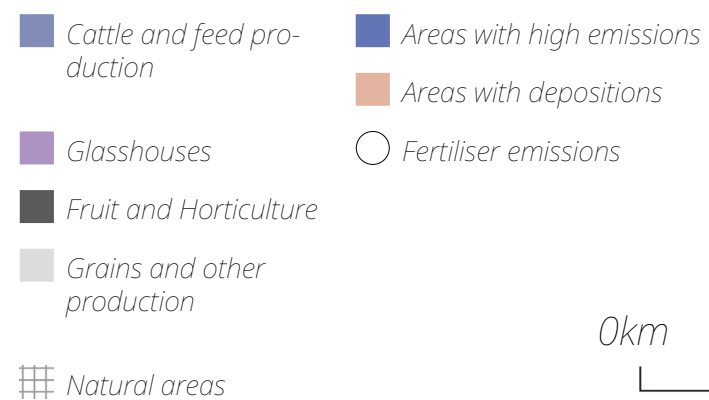
Does the Northern Campine experience **Depletion**?



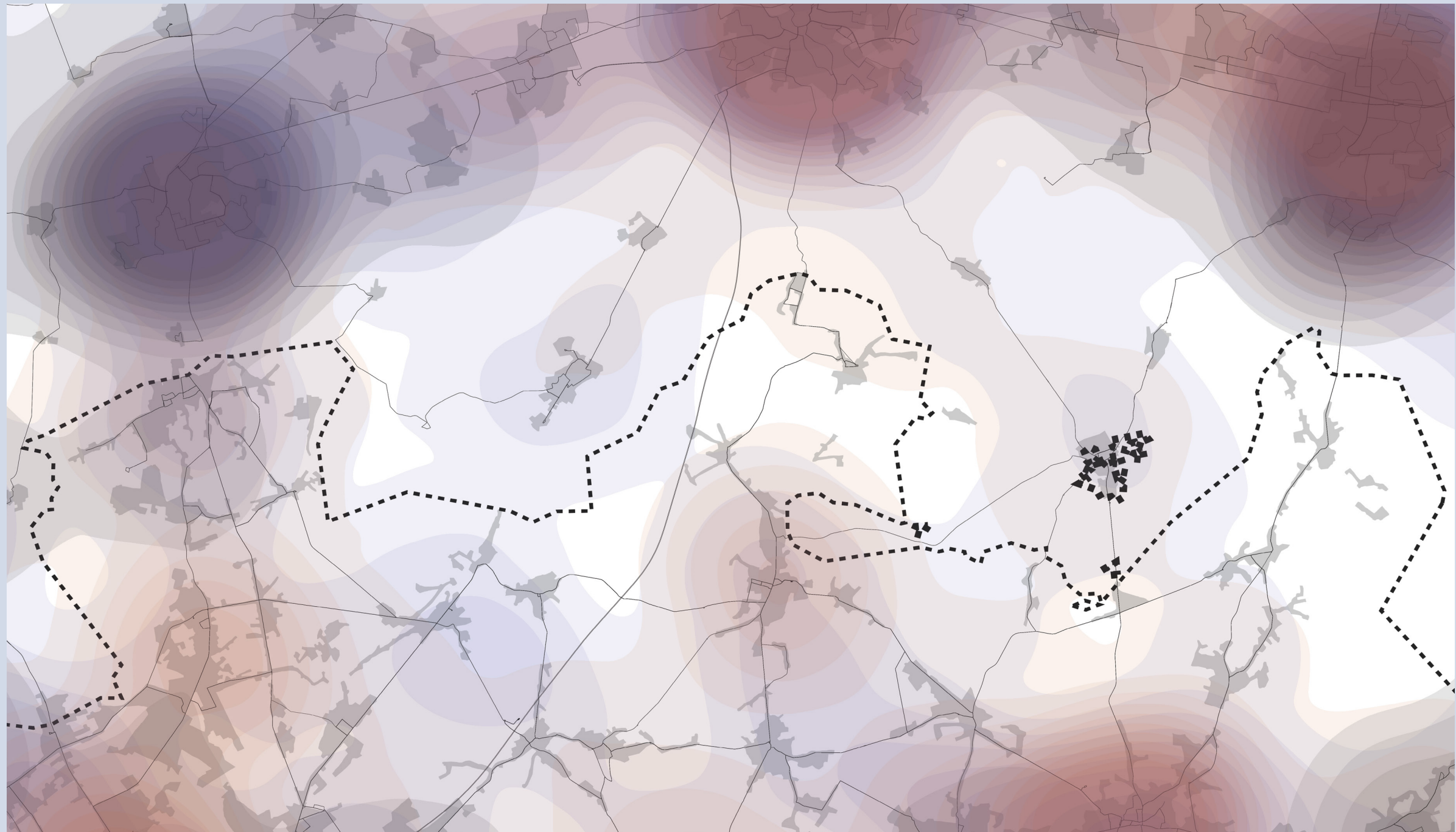
Ecological



Emissions and depositions of Nitrogen within Northern Campine



Social



Heatmap of three primary services (Shops, Healthcare, Education) illustrating distribution and gaps in services



Spatial planning



Places and types of conflicts resulting from spatial planning along the border

These forms of **Depletion** are the result of a **Production Landscape**

- *Mixed uses and densities* (Brenner and Katsikis, 2020)
- *Intensive Landuses* (Brenner and Katsikis, 2020)
- *Export oriented* (Moore, 2015)
- *High Investment to increase ecological surplus* (Moore, 2015)
- *Neglect local needs* (Brenner and Katsikis, 2020)



Production Landscapes

Monoculture

Export Driven

Climate Change

Low densities

Emissions



Depleted Landscapes

Alternatives to Depletion?

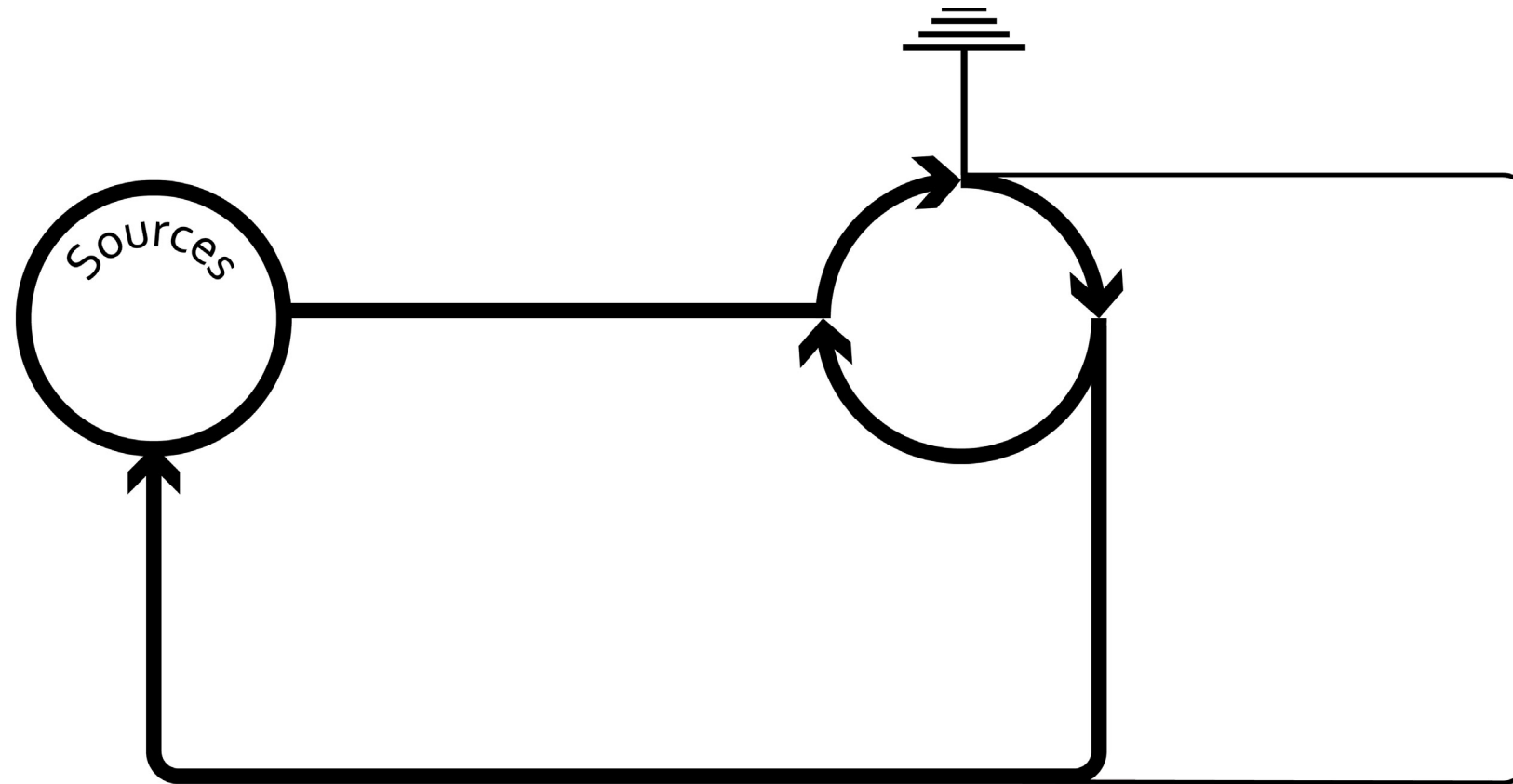
Regenerative Sustainability

Cross Border Cooperation

Rural Resilience

Accessibility

Regenerative Sustainability



Regenerative Systems (After Lyle, 1994)

Cross Border Cooperation

- *Local needs* (Decoville & Durand, 2017)
- *local networks* (Hataley & Leuprecht, 2018)
- *Similar aims and coherent vision* (Wong-Villanueva, Kidokoro & Seta, 2022)

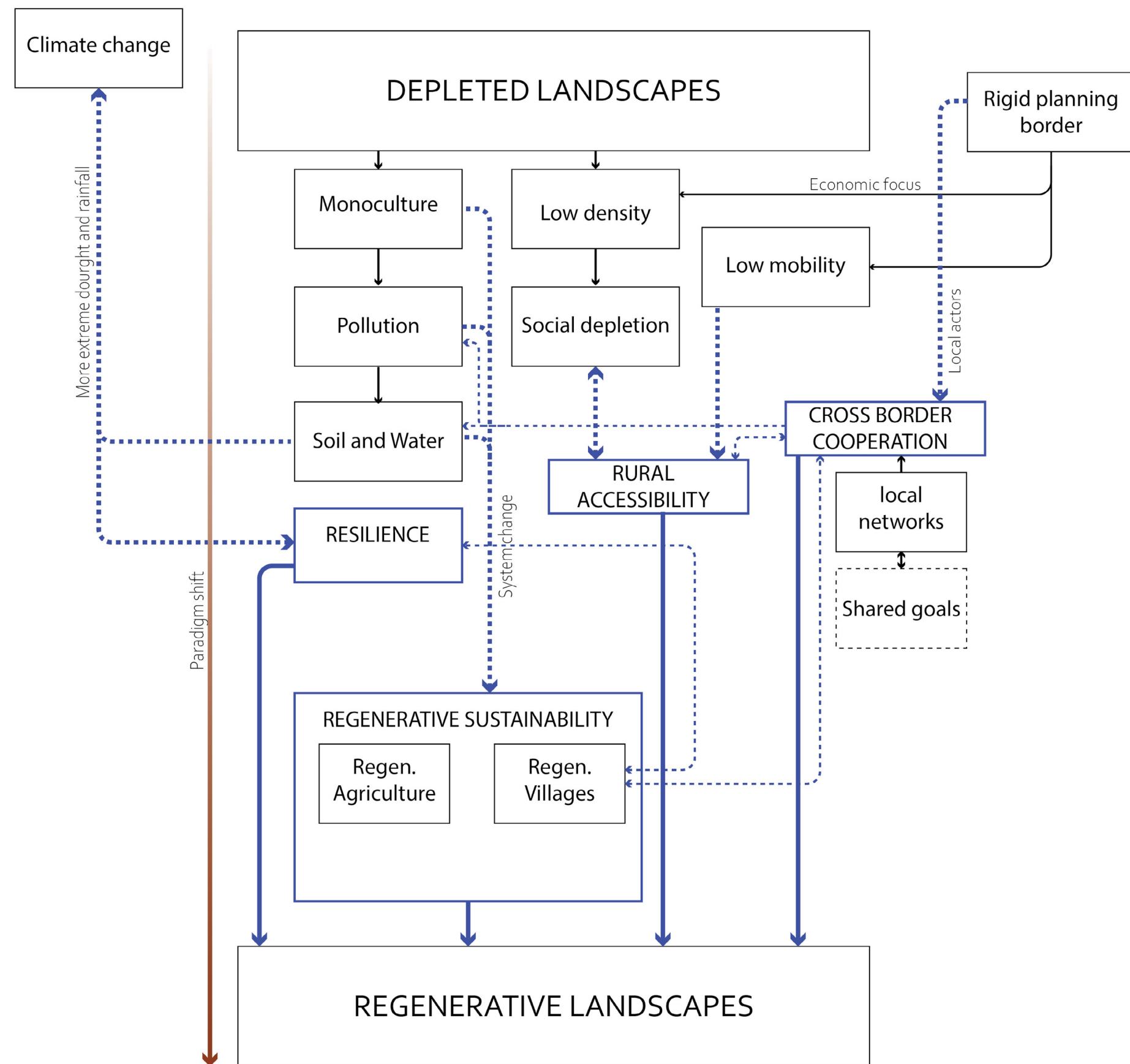
Concepts to shift away from **Depleted Landscapes**

Regenerative Sustainability

Cross Border Cooperation

Rural Resilience

Accessibility



How could **regenerative sustainability** counter **ecological and social depletion** resulting from intensive **land-uses and rural shrinkage** in the Northern Campine region?

- I** How have land uses shaped the Northern Campine region ecologically, socially and spatially over time?
goal: to understand the spatial development and the resulting issues currently faced
- II** What is **Regenerative Sustainability** and which praxis can improve soil and ecological quality?
goal: to define Regenerative Sustainability and application through policies
- III** What are (spatial) planning principles for sustainable regional development?
goal: to create a policy document for regional development
- IV** Which **spatial structures** and/or conditions can be reused or introduced to combat rural deterioration?
goal: to identify spatial design tools to achieve main goal
- V** V: Which **scenario** works towards a regional strategy combining theoretical concepts with spatial design? -*goal: to combine policy development and spatial design to achieve a final vision.*

Spatial analysis

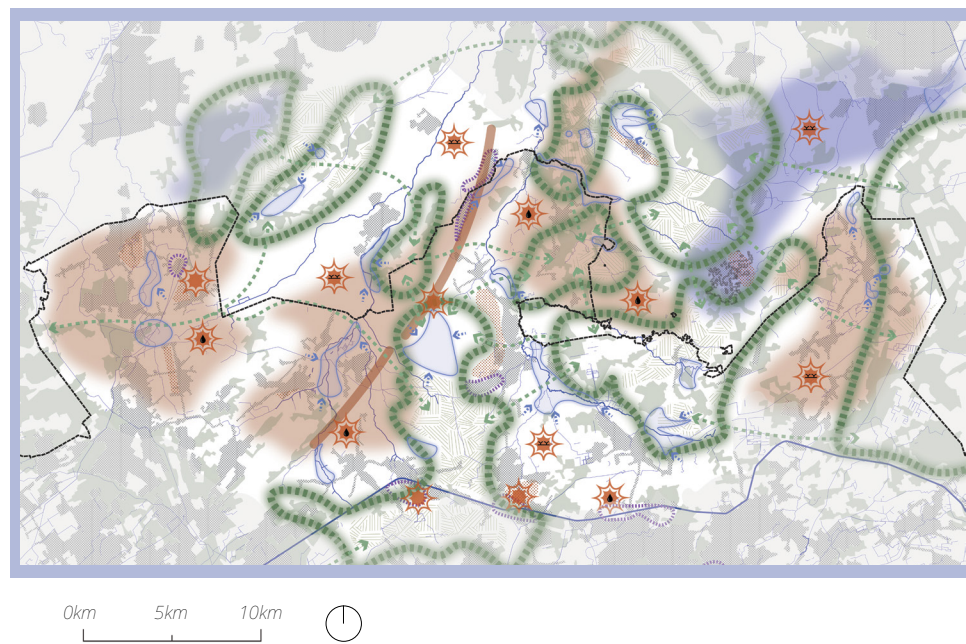
Scenario analysis

Strategy design
& Simulation

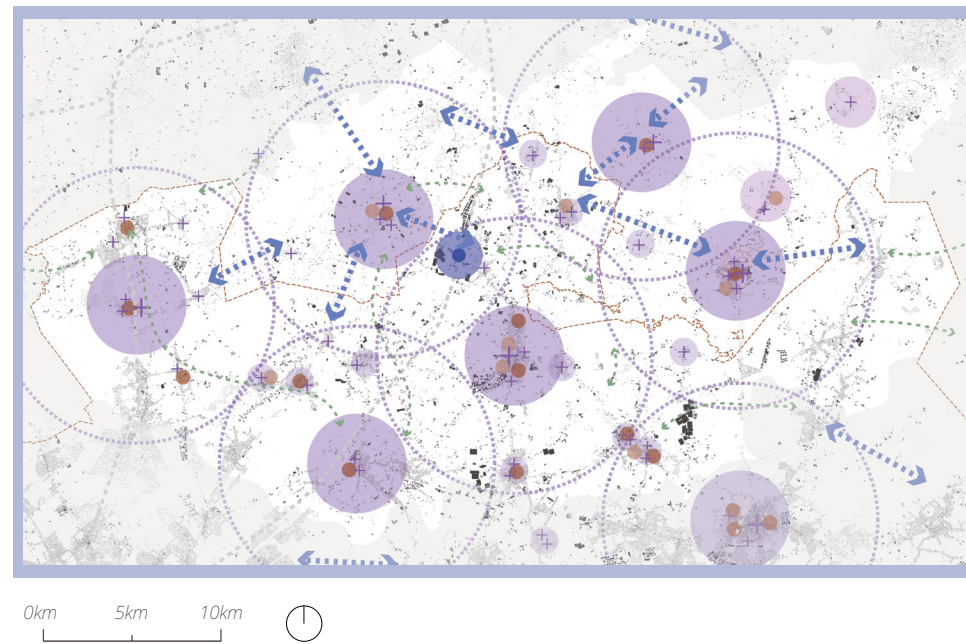
Current state —————→ *Future scenarios* —————→ *Imagination*

Spatial Analysis

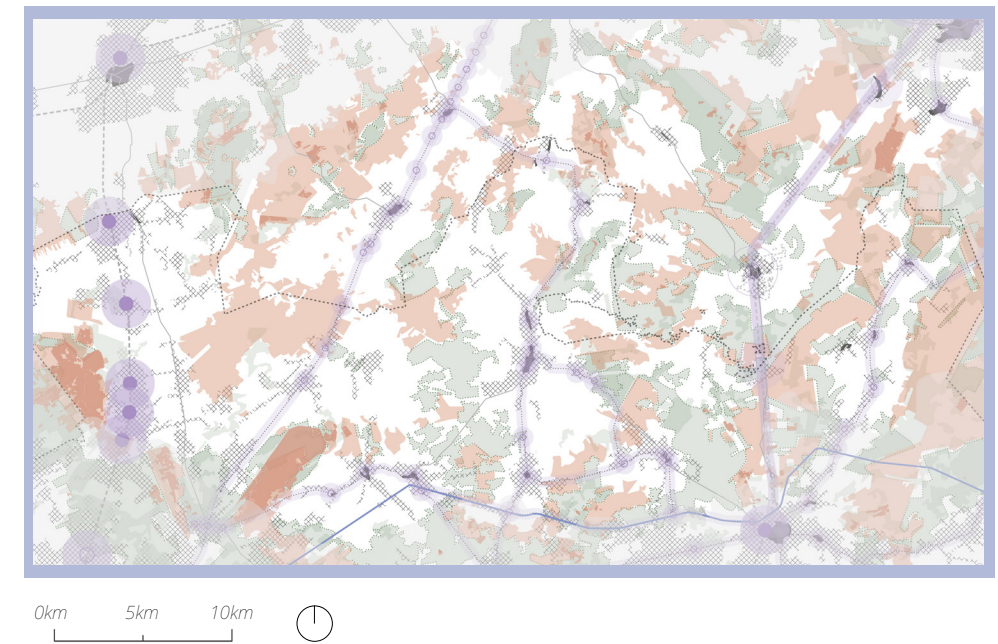
Soil



Society



Diachronic



Soil

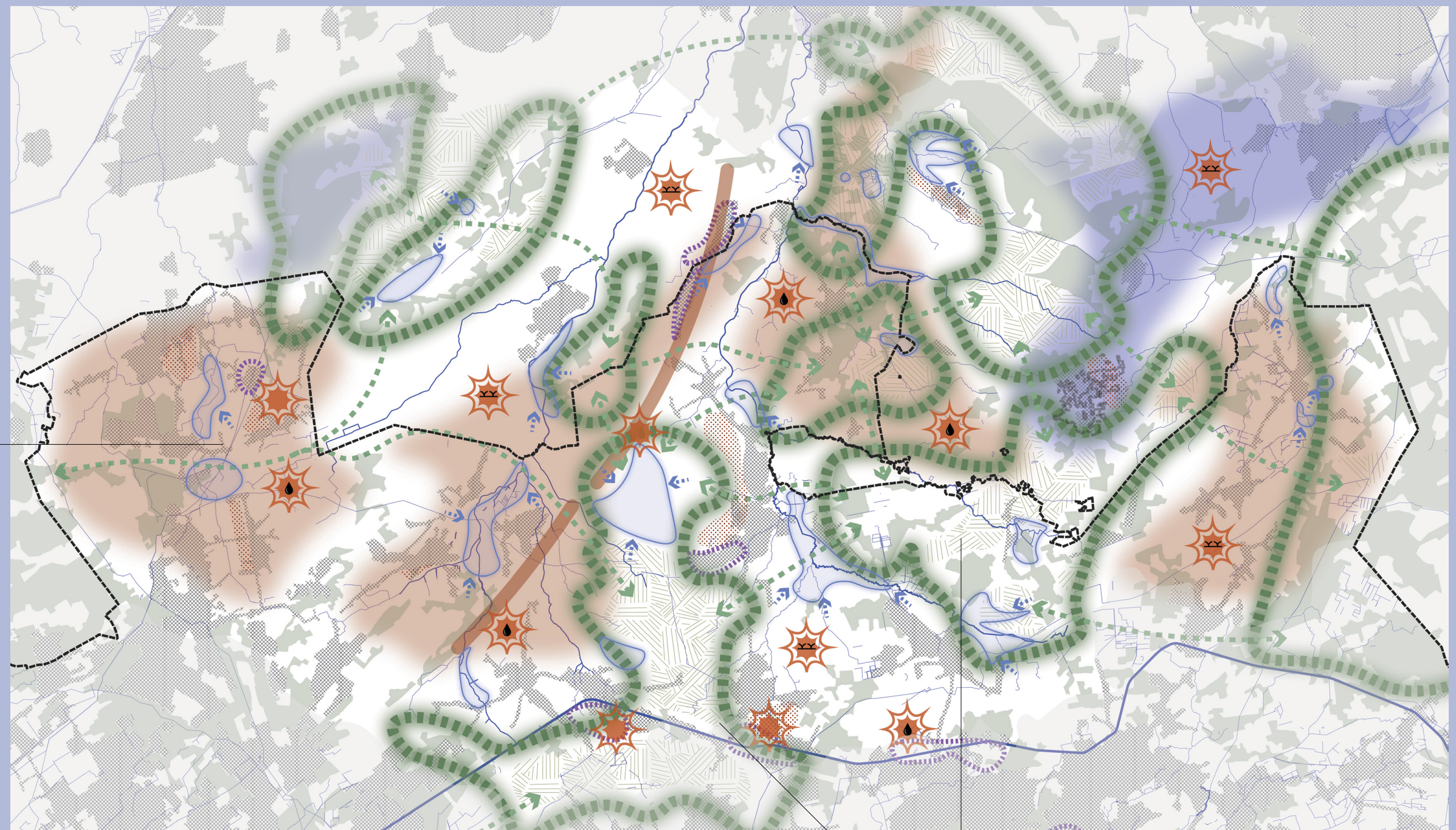


Possibilities and conflicts

Soil

Possibilities and conflicts

More water retention
needed

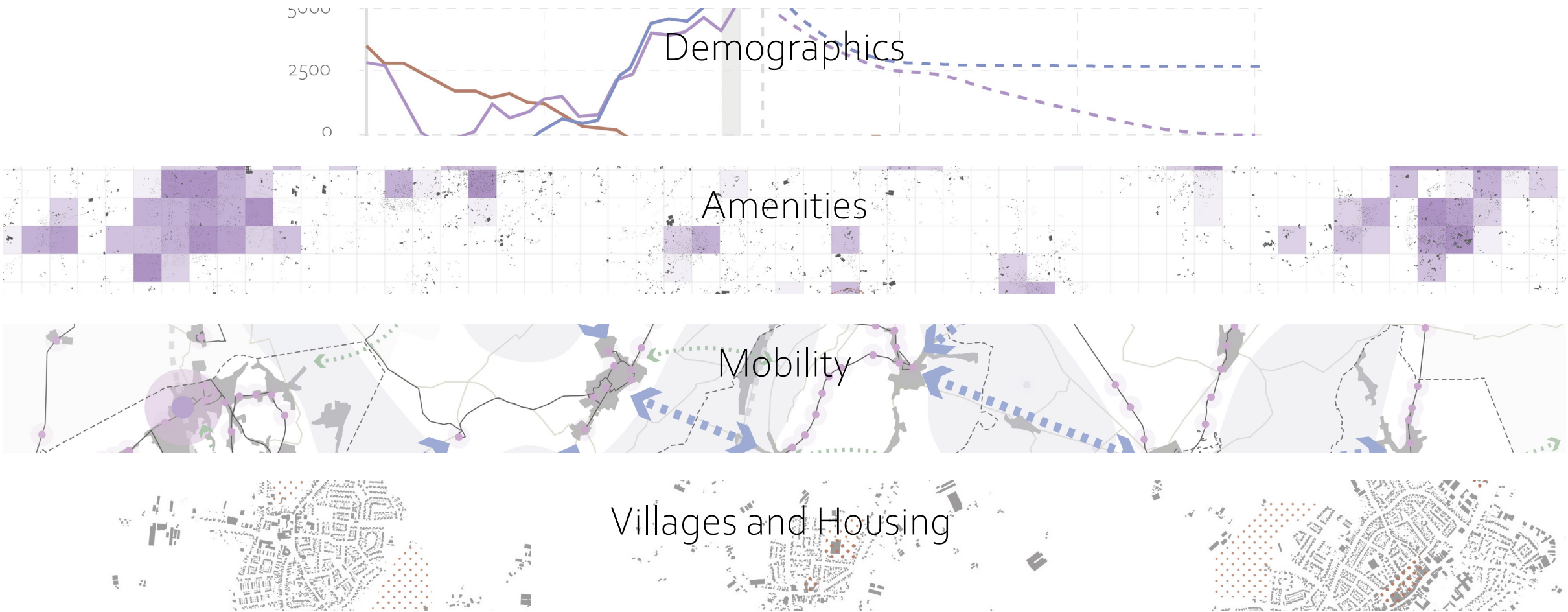


- | | |
|--------------------|---------------------------|
| Forest expansions | Conflict in water use |
| Higher groundwater | Drought Stress/unsuitable |
| Lower groundwater | Conflict in land-use |
| Water retention | Ecological corridors |
| Industrial sites | Water flow |
| Urban expansion | Urban areas |
| Bio-Farming | Energy production |

In areas for forest expansion,
room for agriculture can re-
main, but should be bio-farm-
ing to avoid additional nitro-
gen depositions



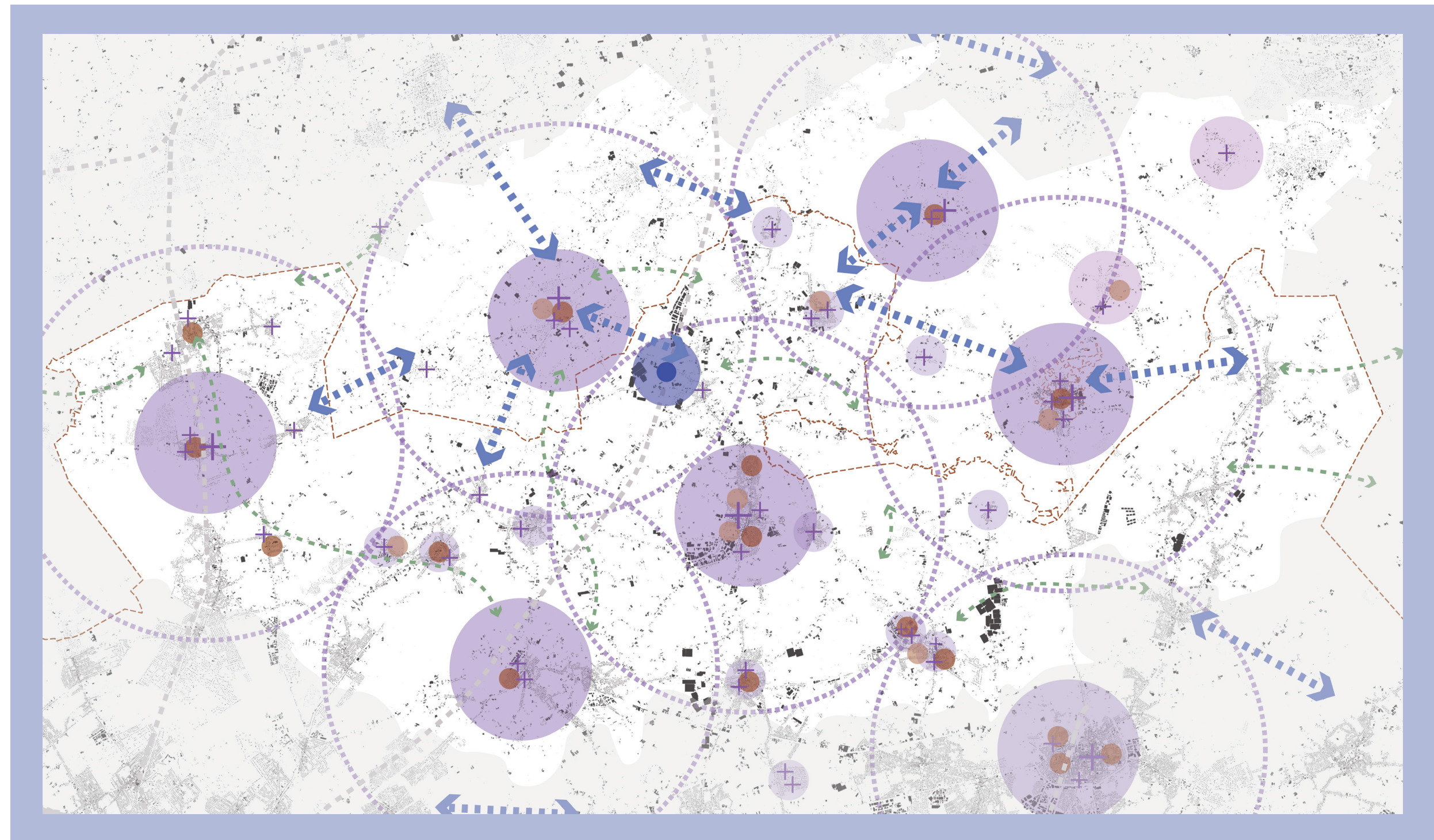
Society



↓
Opportunities and Challenges

Society

Opportunities and challenges



Social: Opportunities and Challenges map



Diachronic



History



Heaths



Forests



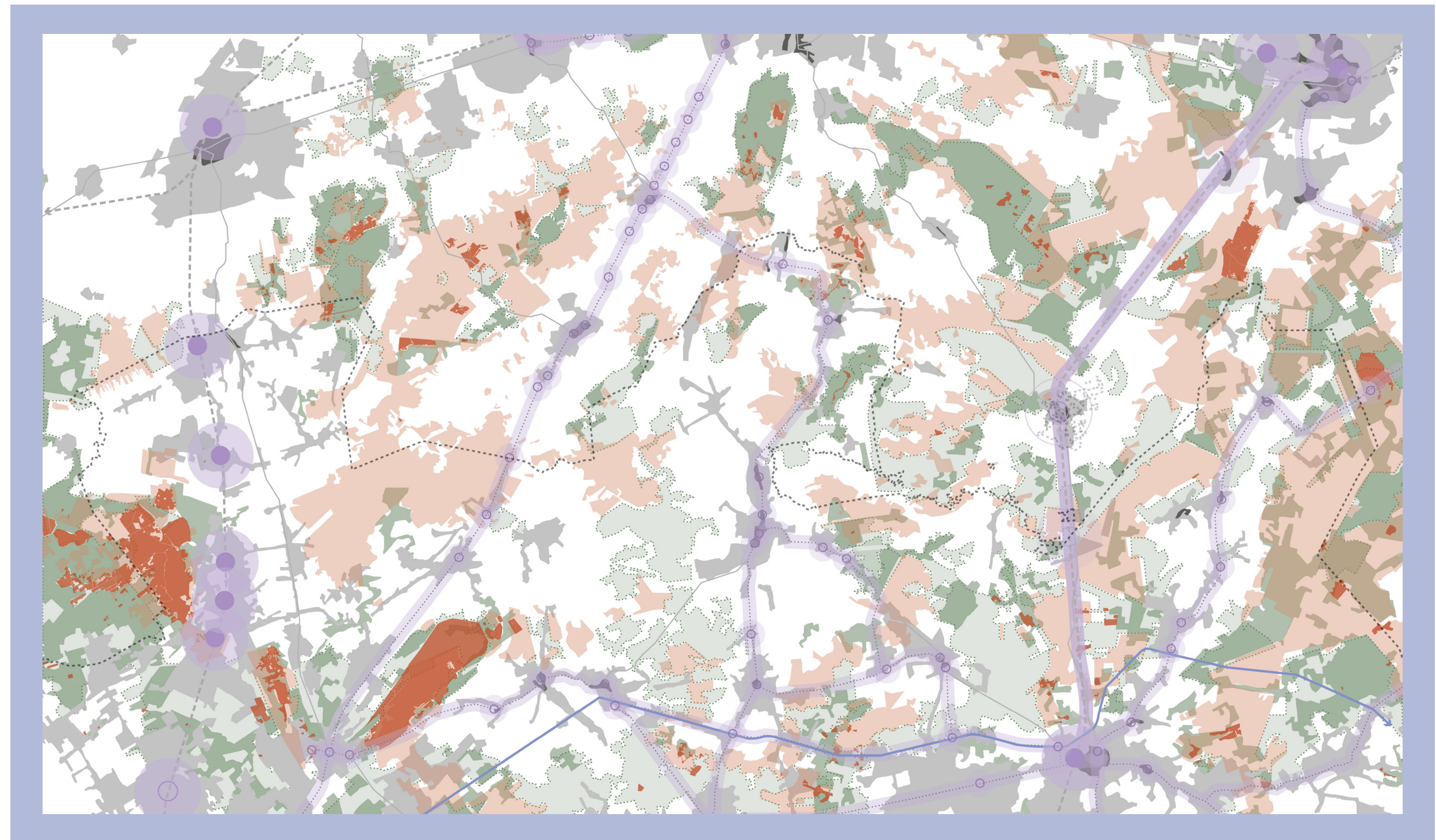
Transportation



Conclusion

Diachronic

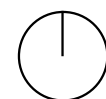
Conclusion

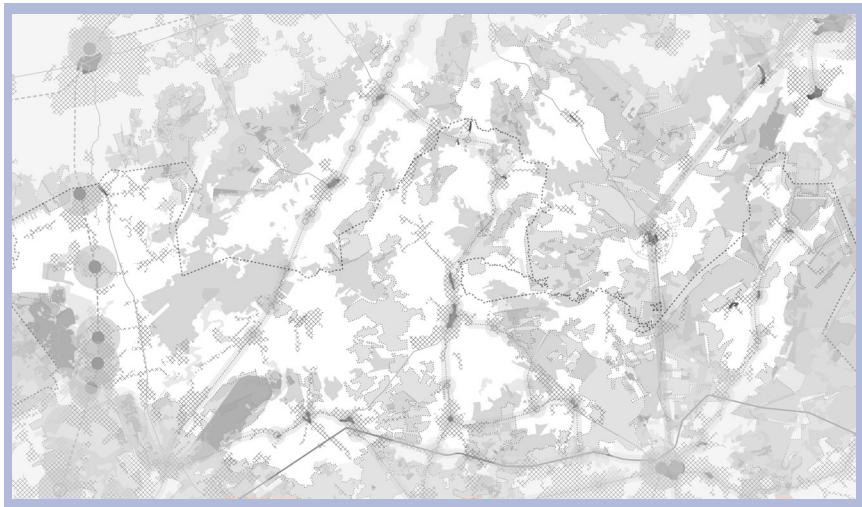
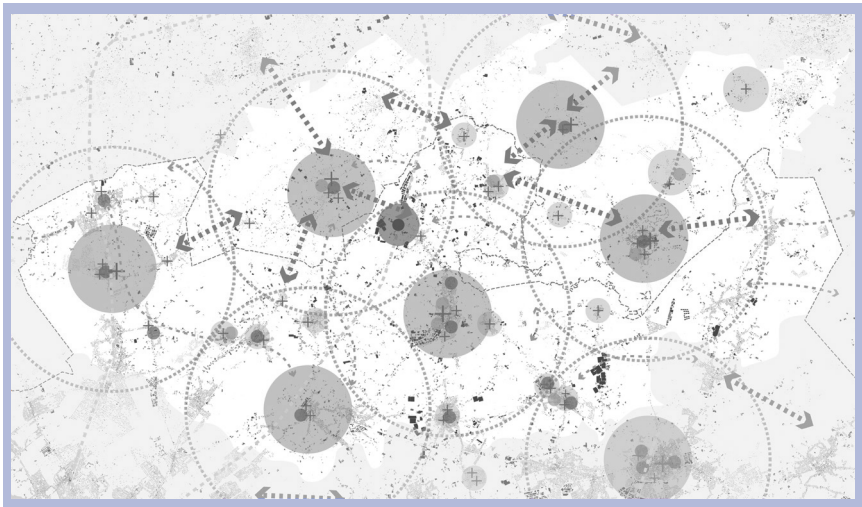
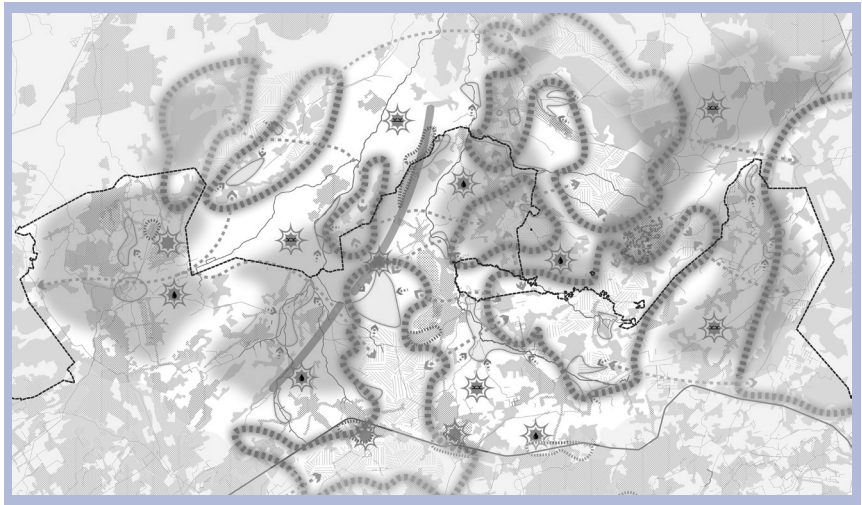


Diachronic Conclusion map

- | | |
|--|--|
| ■ Extent Heaths 1920 | ■ Removed tram/train lines |
| ■ Extent Heaths 2020 | ● Abandoned tram stops |
| ■ Extent Forests 1920 | ● Train stations |
| ■ Extent Forests 2020 | --- Trainlines |
| ■ Urban areas 1920 | — Main Roads |
| ■ Urban Areas 2020 | Removed tram and railways |

0km 5km 10km





+

Concepts
Literature review



Criteria

Spatial Themes		
	Soil and Water	
	Water retention	Increased retention
	Flooding	Decreased
	Water Extraction	Bassin based
	Water system	Local systems
	Agricultural use	Based on soil types
	Water quality	High quality
	Soil quality	Healthy and vital
	Ecology	
	Cultural landscapes	Integrated network
	Natura 2000 zones	Expanded with buffers.
	Biodiversity	Recovery
	Blue-Green Network	National and connected
Hybrid Themes		
	Mobility	
	Modes	Mixed modes
	Network type	Mix radial and transverse
	Core goal	Service based
	Resilience and Regenerative	
	Functions	Multifunctional
	Information exchange	Horizontal
	Governance Networks	Local and horizontal
	Housing provision	mix of types
Institutional Themes		
	Cross Border Coop.	
	Level of stakeholders	Local and provincial
	Goals	Shared
	Vision	Shared
	Network of actors	Local
	Institutions needed	Limited

Criteria List

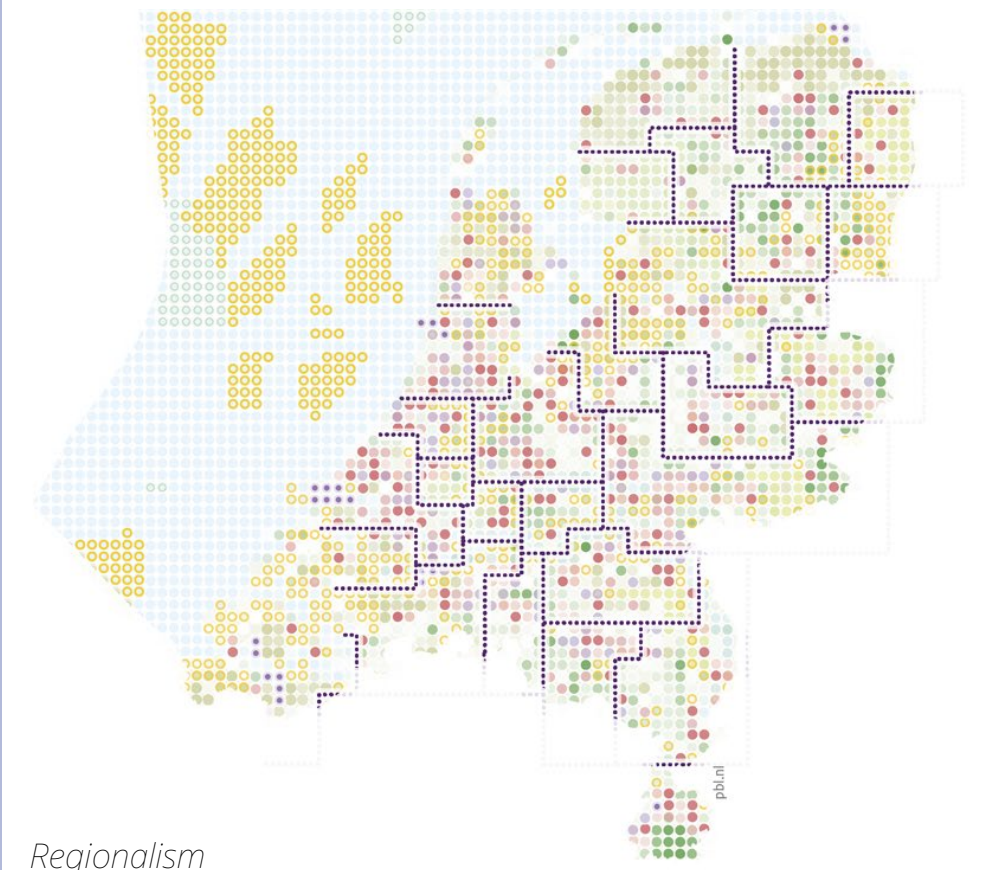
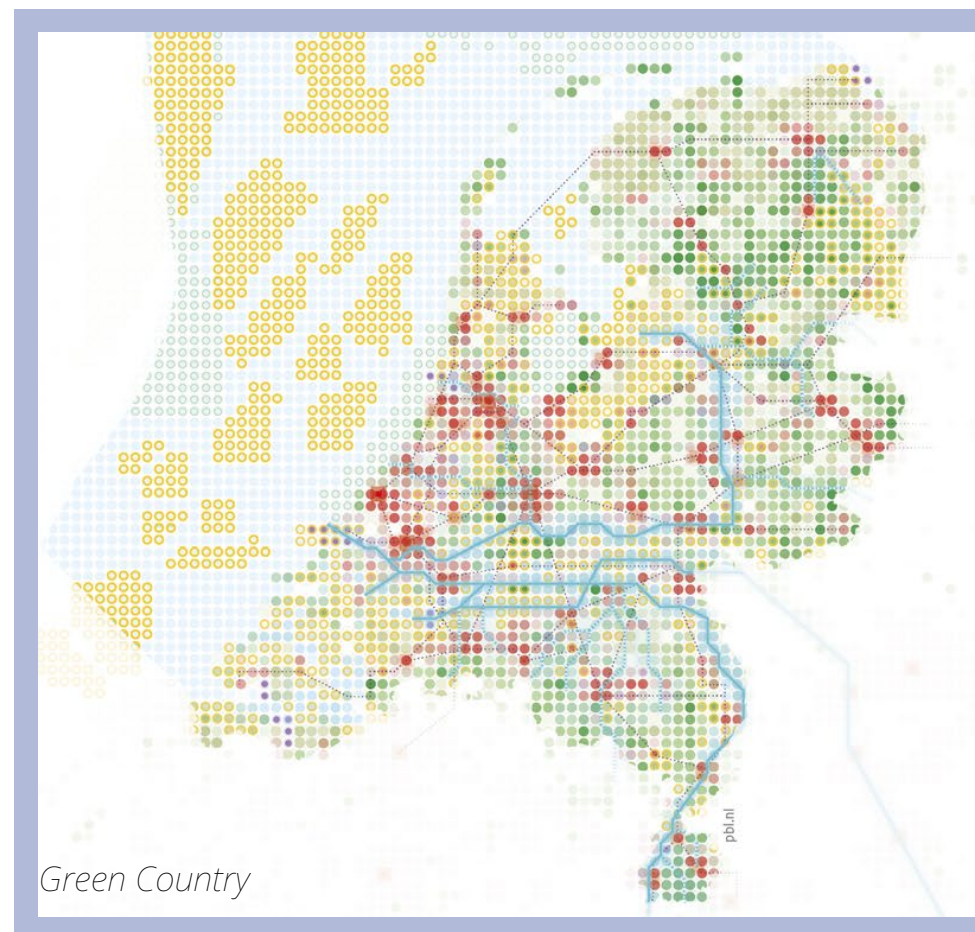
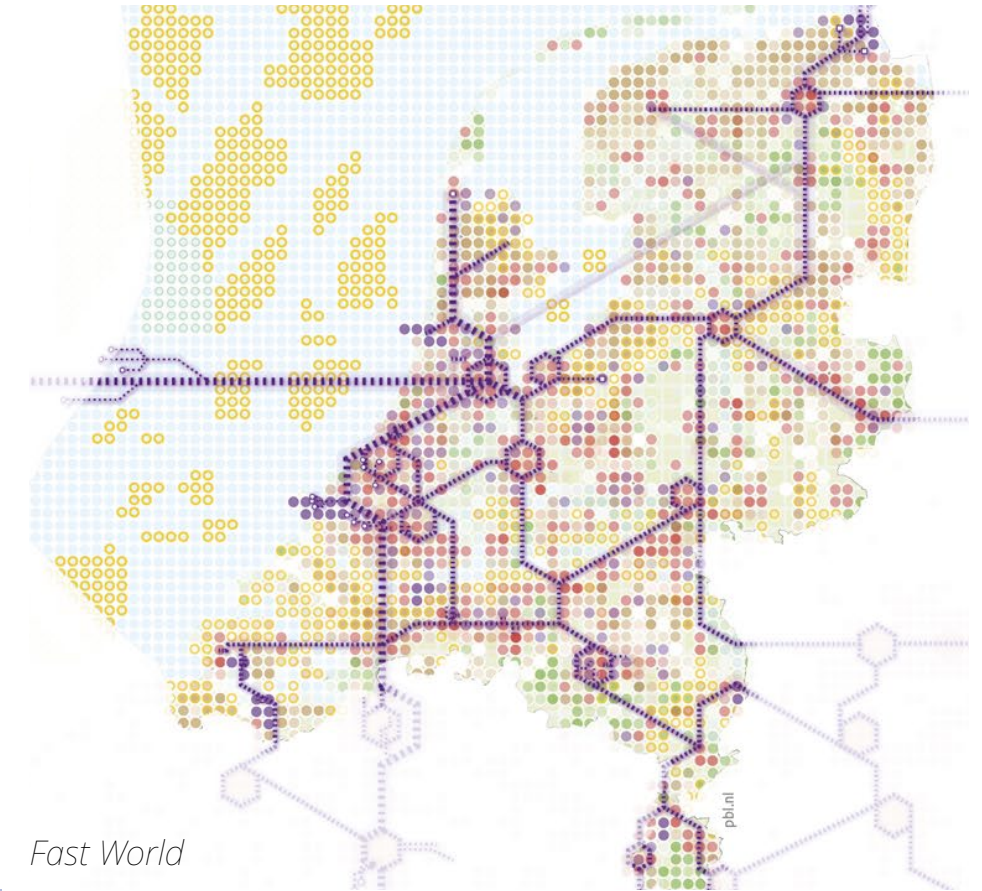
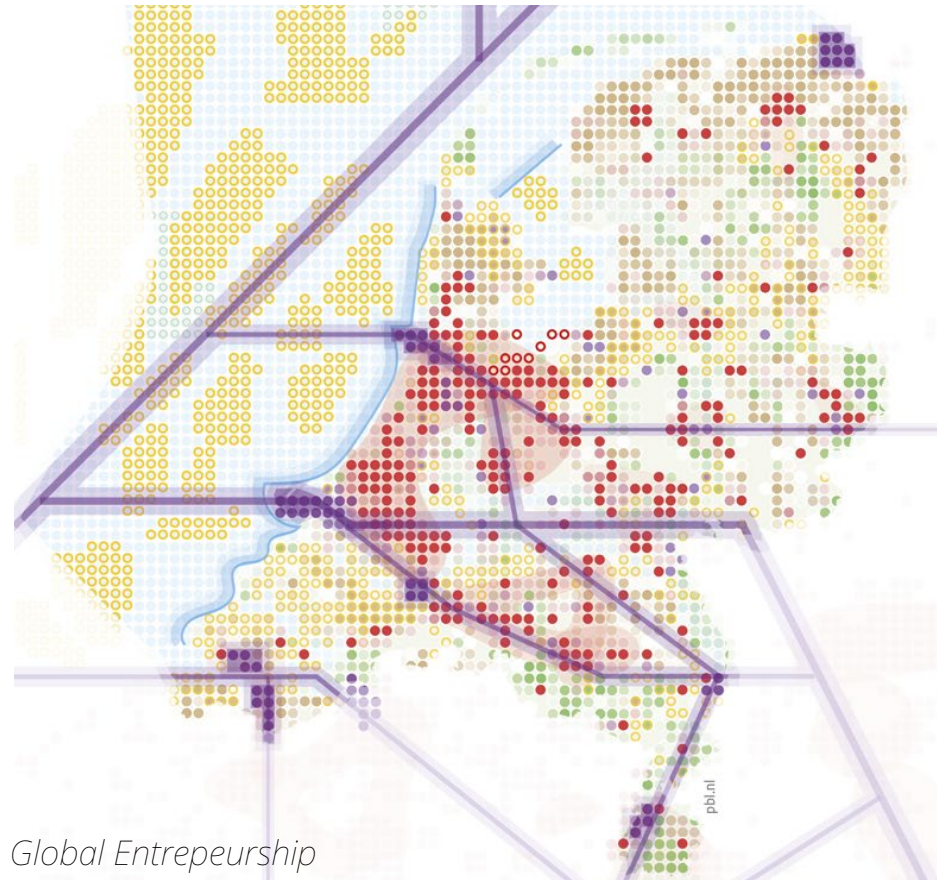
Scenario Analysis



Sluis, F. van. (1850-1914) "The Distribution of Bread in a village" [painting]. KMSKA

PBL scenarios

- Envision solution to nitrogen
- Spatial imagination on a National scale
- Illustrate societal and political shifts

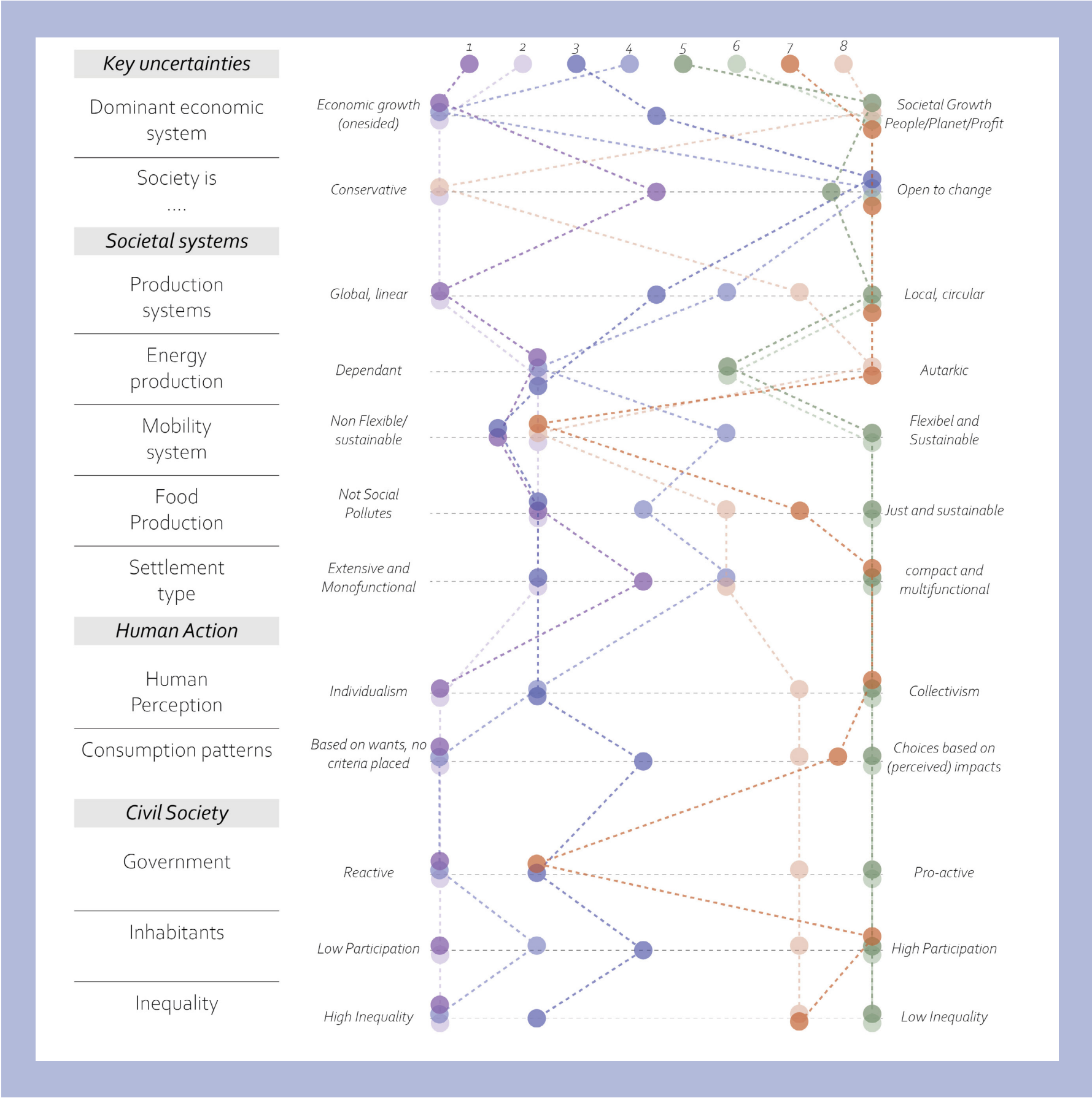


Overview of scenario diagrams (Hamers et al., 2023)

PBL Scenarios

Extended into Belgium

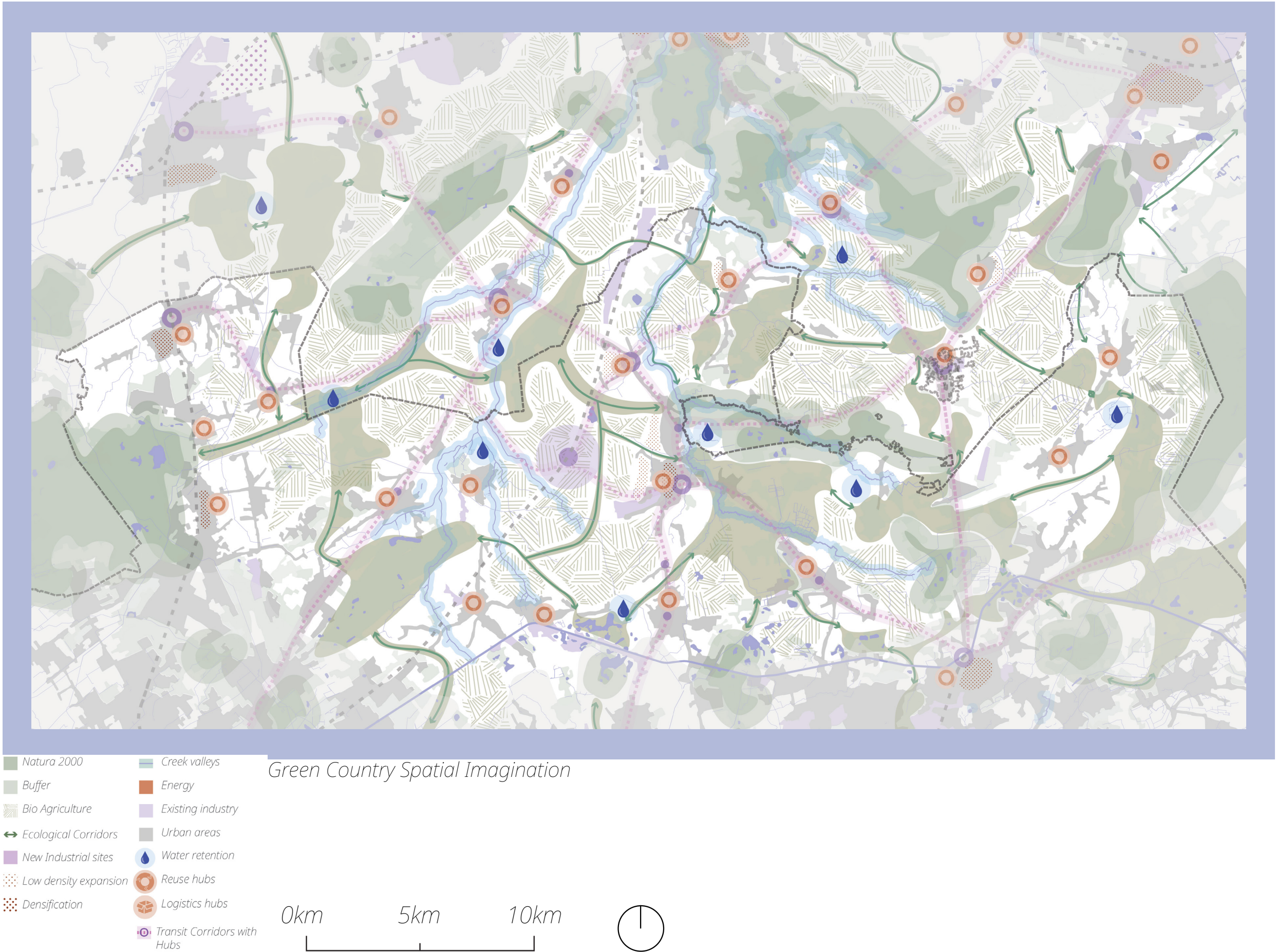
- 1: Global Entrepreneurship (PBL)
- 2: Deluge (VPO)
- 3: Fast World (PBL)
- 4: Elon-Musk (VPO)
- 5: Green Country (PBL)
- 6: Donut (VPO)
- 7: Regionalism (PBL)
- 8: Amish (VPO)



Overview of unceratinties after Gommers et al. (2024)

Green Country

Spatial Imagination



Green Country

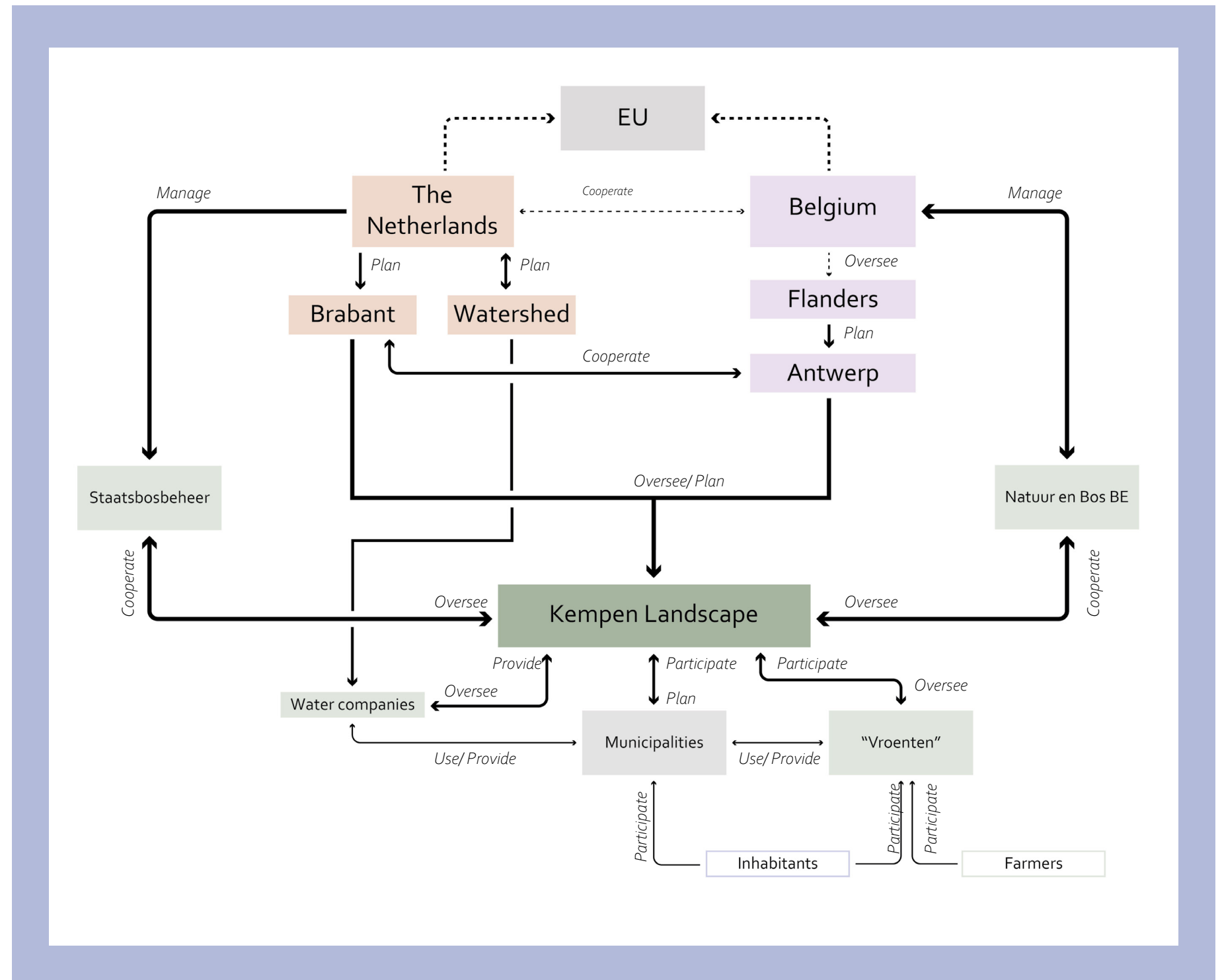
Spatial Imagination



Green Country

Institutional Imagination

- Societal shift to circular
- Blue Green Networks for nature
- National Planning, local implementations
- Creation of Regional Board



Green Country Institutional Imagination

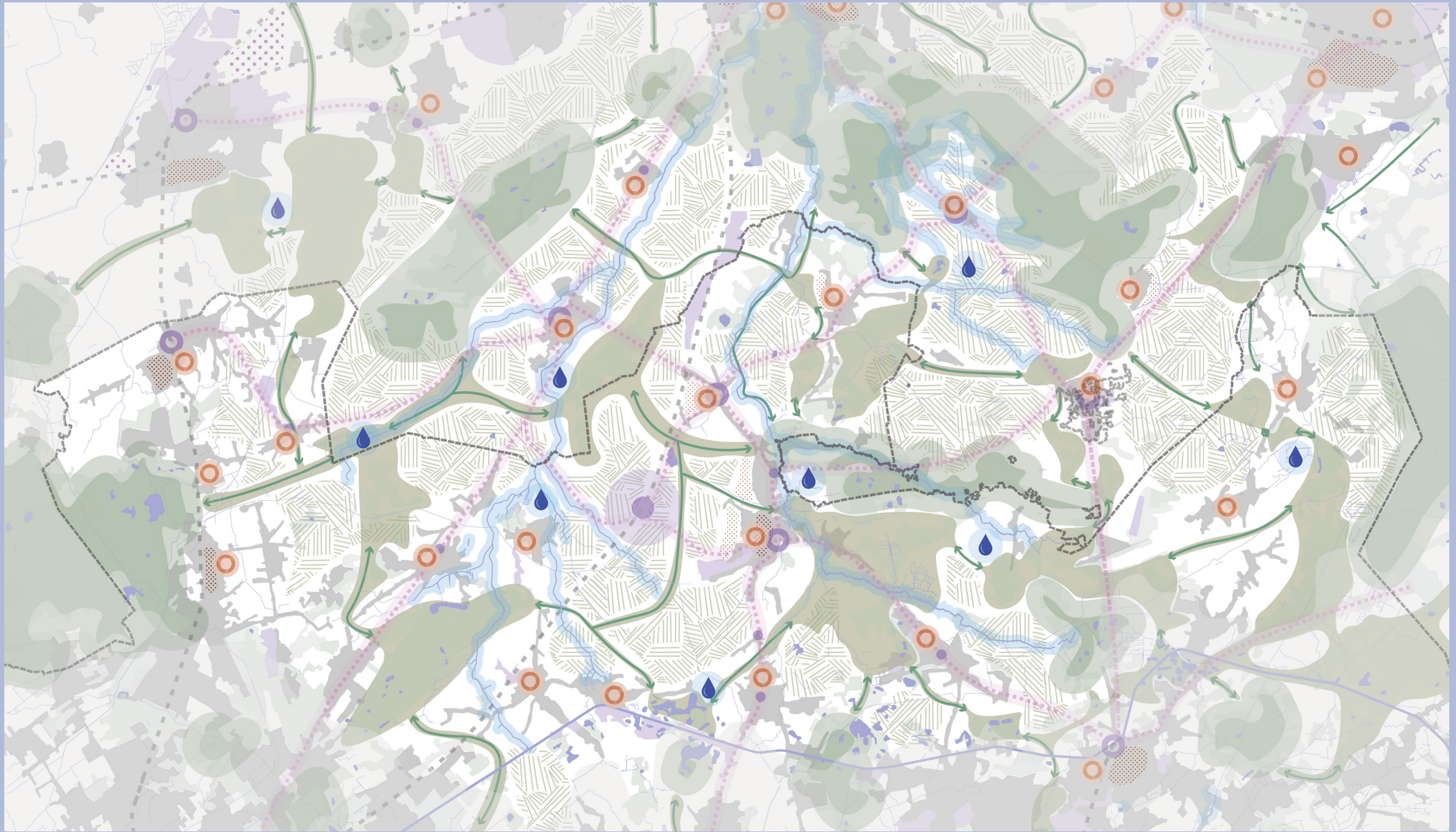
Green Country

Assessment

<i>Spatial Themes</i>					
	<i>Soil and Water</i>	<i>Global Entrepreneur.</i>	<i>Fast World</i>	<i>Green Country</i>	<i>Regionalism</i>
	Water retention	0	0	+	0
	Flooding	-	-	+	0
	Water Extraction	-	0	+	0
	Water system	-	+	0/+	0
	Agricultural use	-	-	+	0
	Water quality	-	+	+	+
	Soil quality	0	0	+	+
	<i>Ecology</i>				
	Cultural landscapes	0	-	+	0
	Natura 2000 zones	+	-	+	+
	Biodiversity	0	-	+	+
	Blue-Green Network	-	-	+	0
<i>Hybrid Themes</i>					
	<i>Mobility</i>				
	Modes	-	-	0	+
	Network type	0	0	0	0
	Core goal	-	0	+	+
	<i>Resilience and Regenerative</i>				
	Functions	0	+	+	+
	Information exchange	-	+	+	+
	Governance Networks	0	0	-	+
	Housing provision	-	+	+	+
<i>Institutional Themes</i>					
	<i>Cross Border Coop.</i>				
	Level of stakeholders	-	0	+	+
	Goals	-	-	+	0
	Vision	-	-	+	0
	Network of actors	-	-	0	+
	Institutions needed	-	-	-	+

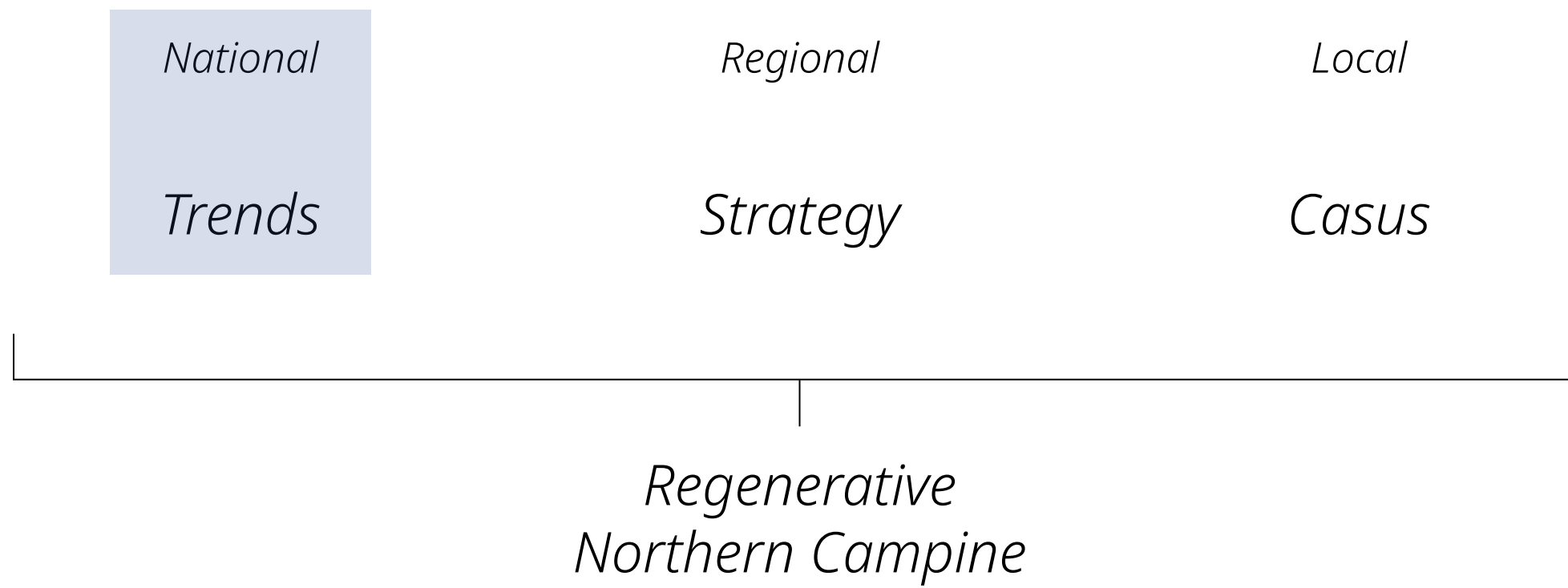
- V: Which **scenario** works towards a regional strategy combining theoretical concepts with spatial design? -goal: to combine policy development and spatial design to achieve a final vision.

Green Country



Green Country Spatial Imagination

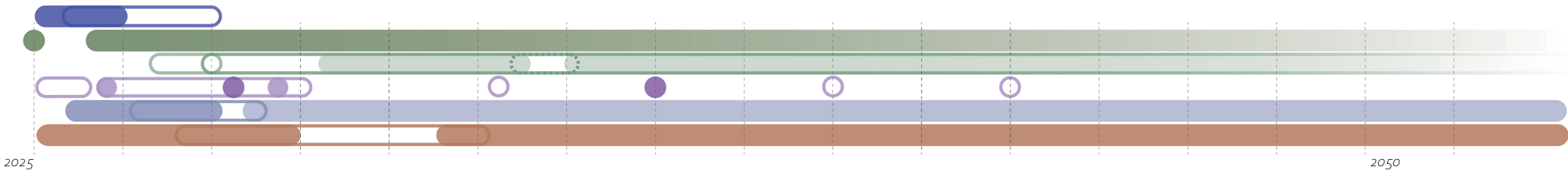




National

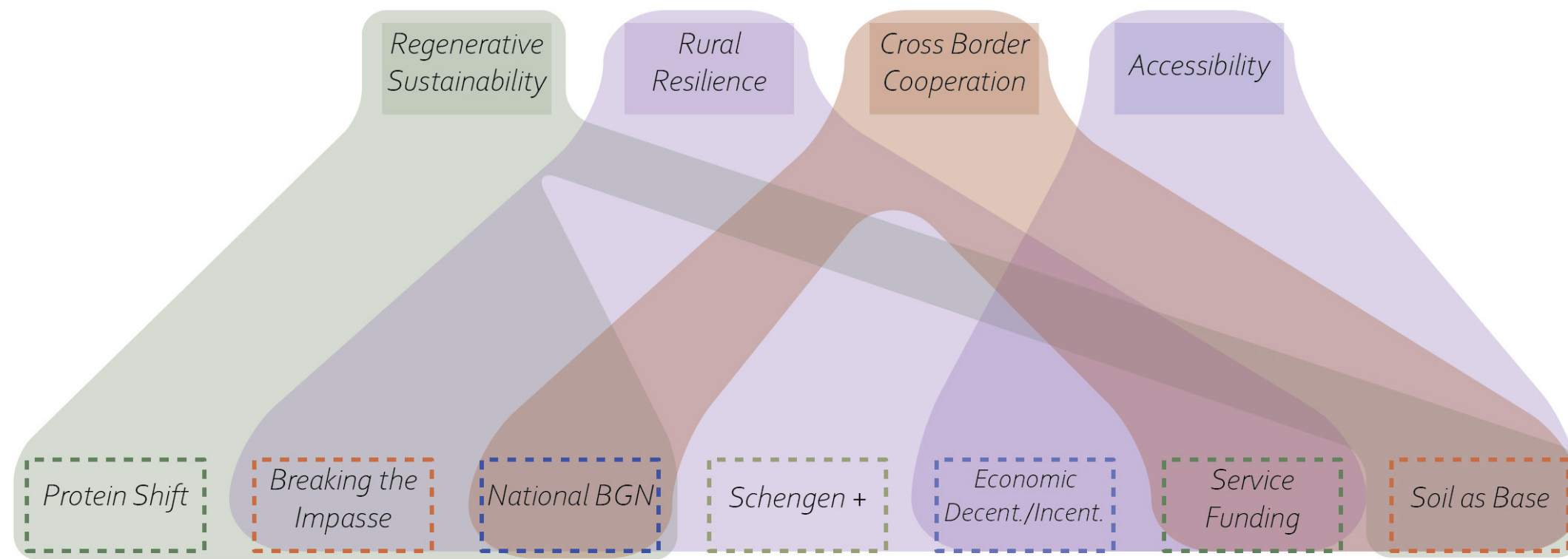
Trends

- I: Protein Shift ●
- II: Breaking the Impasse ●
- III: (Supra)National BGN ●
- IV: Schengen + ●
- V: Economic Decentralisation/Incentivisation ●
- VI: Service Funding ●
- VII: Soil as Base ●



National

Hierarchy



Links between concepts and national trends

National

Regional

Local

Trends

Strategy

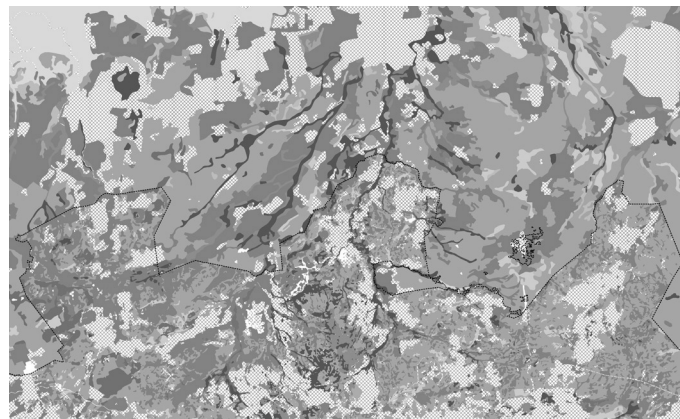
Casus

*Regenerative
Northern Campine*

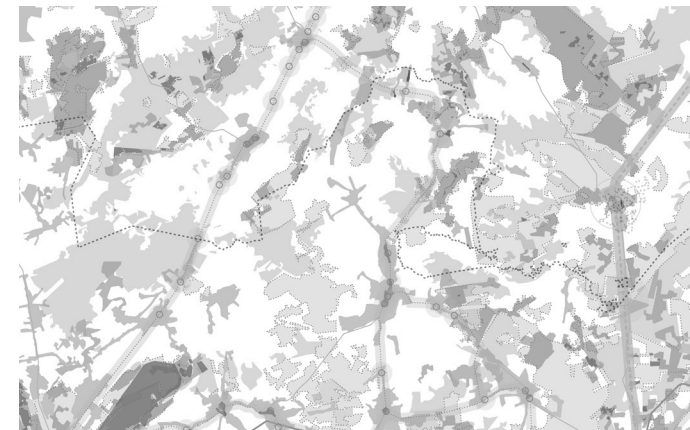
Regional

Possibilities

- Layering of findings from [analysis](#)
- “[Trends](#)” determine specifics, e.g: Soil and water properties for nature and agriculture



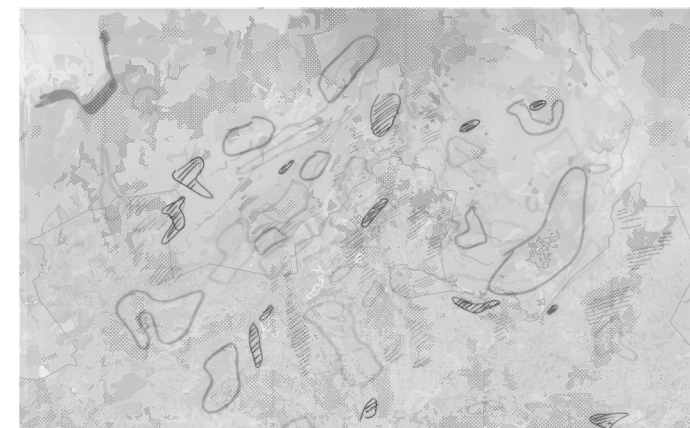
Soil map



Conclusion Diachronic



Ecology and Leisure



Soil as Base

Regional

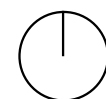
Possibilities



Possibilities Ecological Network

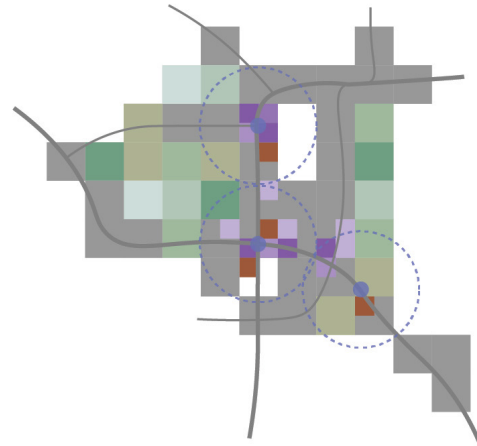
- | | |
|------------------|---|
| Nature areas | Nature Retoration |
| Transition areas | Ecological corridors |
| Buffers | Nature restoration and Bio based agri-culture |
| Water retention | |

0km 5km 10km

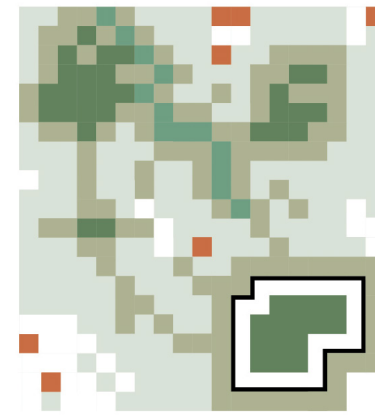


Regional

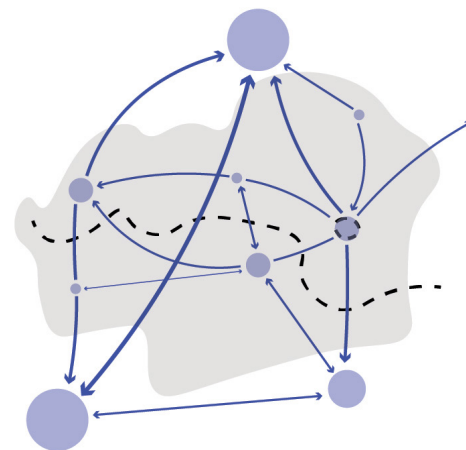
Key Strategies



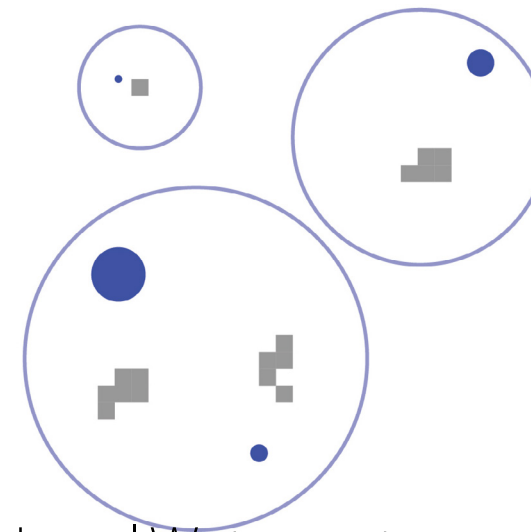
I: Vital Villages



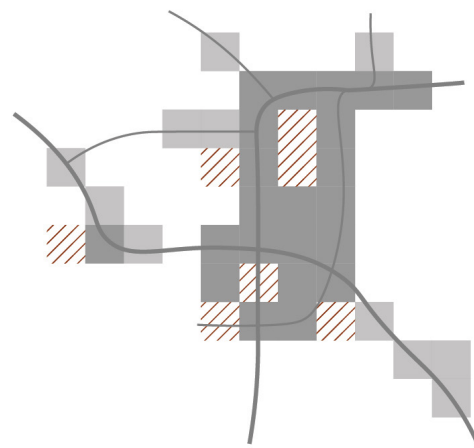
IV: Agri. Zoning



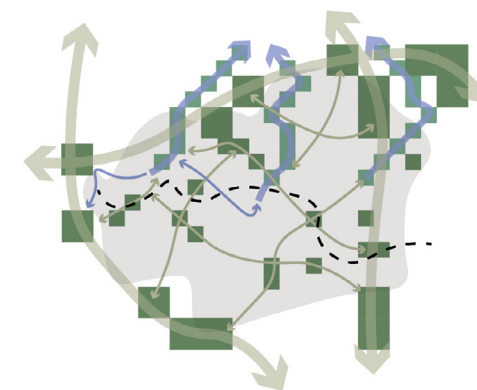
II: Regional Transit



V: Local Water systems



III: Rural Densification

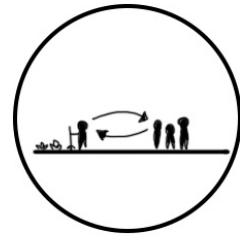


VI: Regional BGN

Regional

Projects

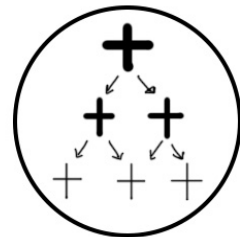
1: Cooperative Farming



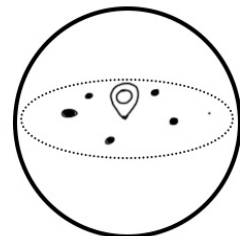
2: Services



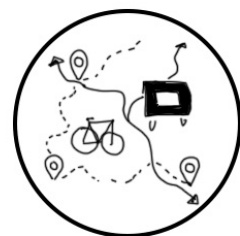
3: Healthcare system



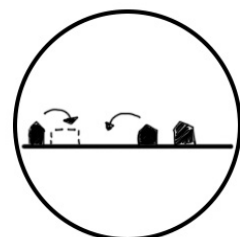
4: Proximity



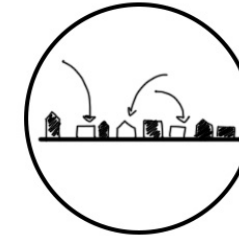
5: Car-Free Mobility



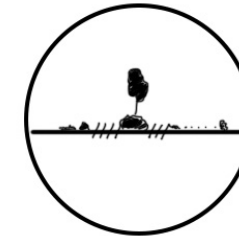
6: Reusing and Expanding



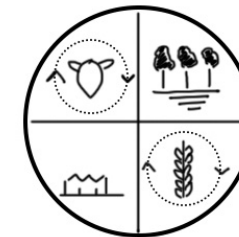
7: Village Quality and Density



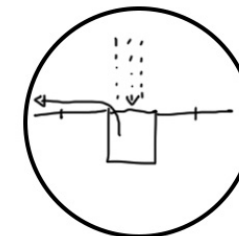
8: Agricultural and Nature Zoning



9: Agricultural Types



10: Local Water Extraction and Retention

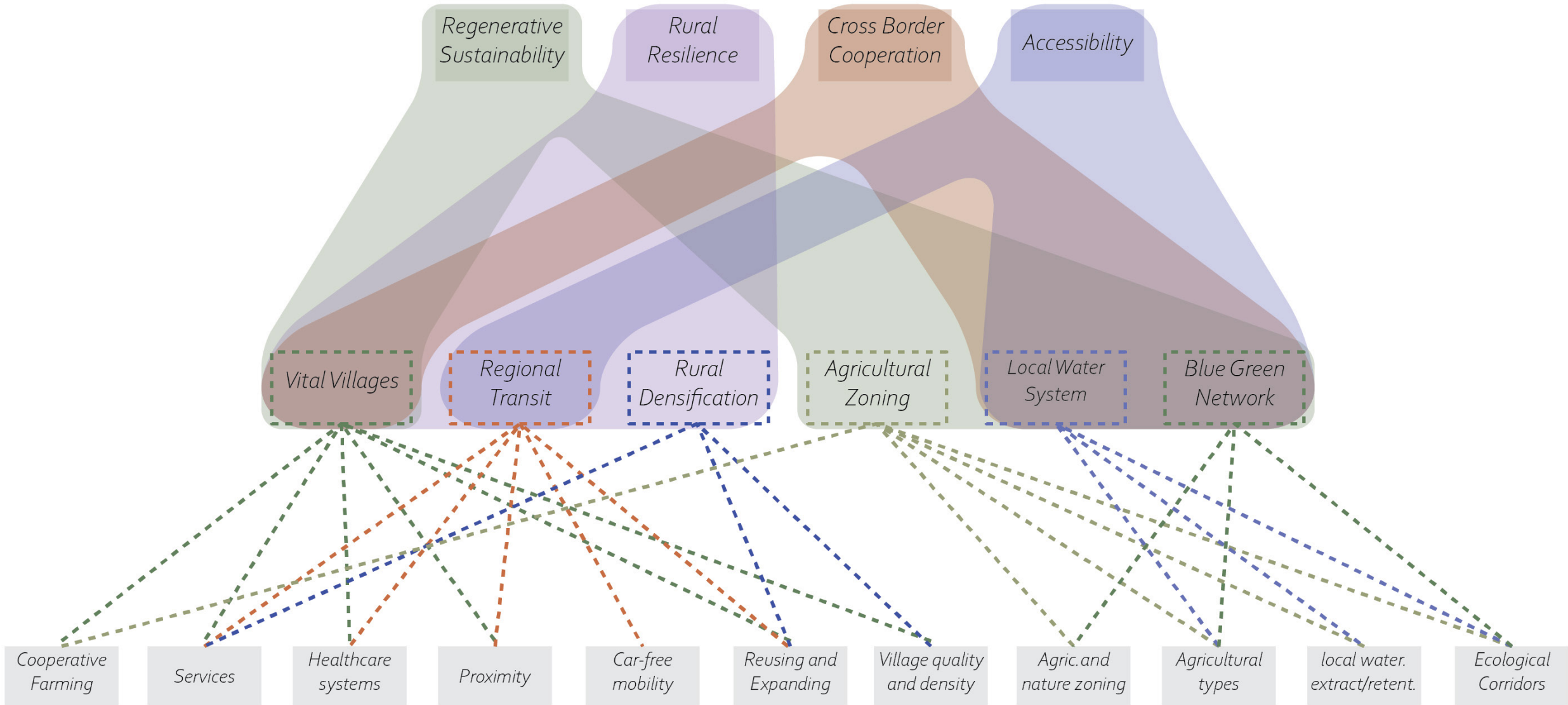


11: Ecological Corridors

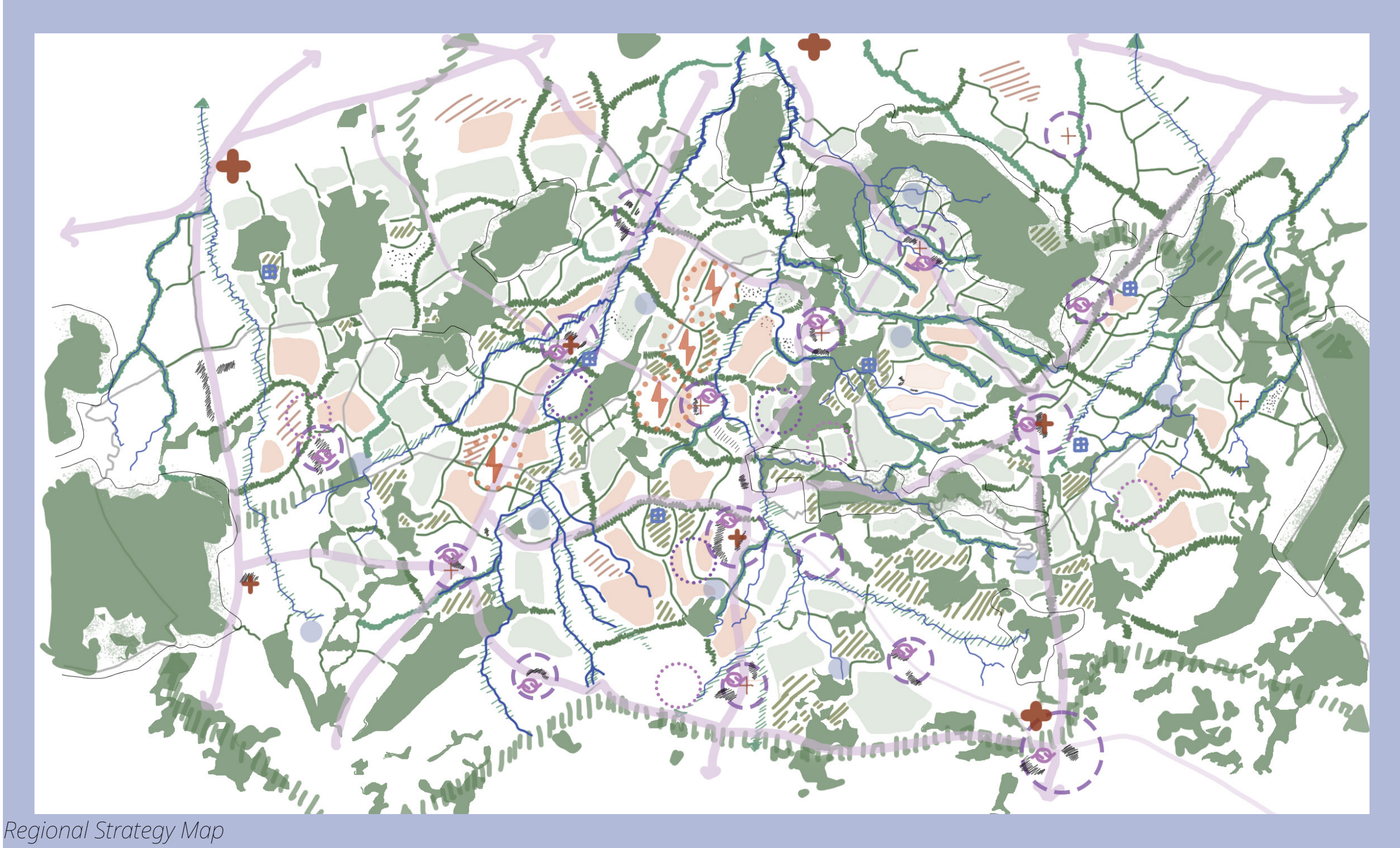


Regional

Links

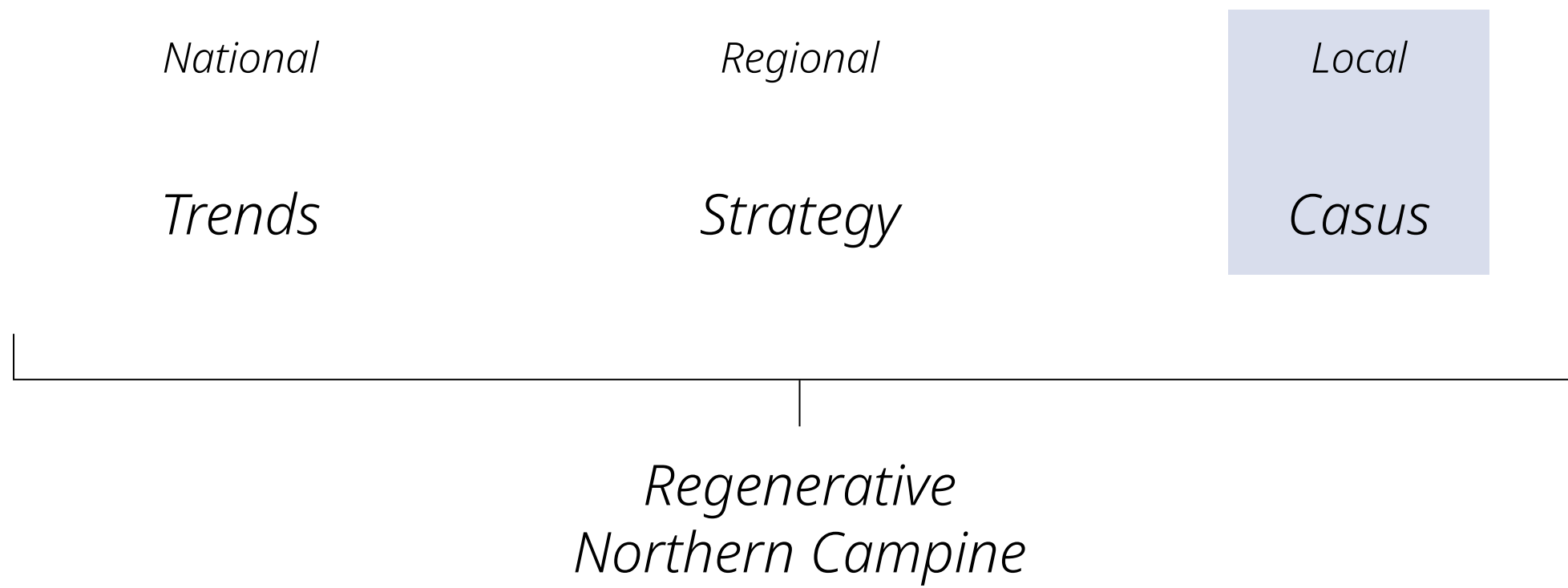


Regional Strategy



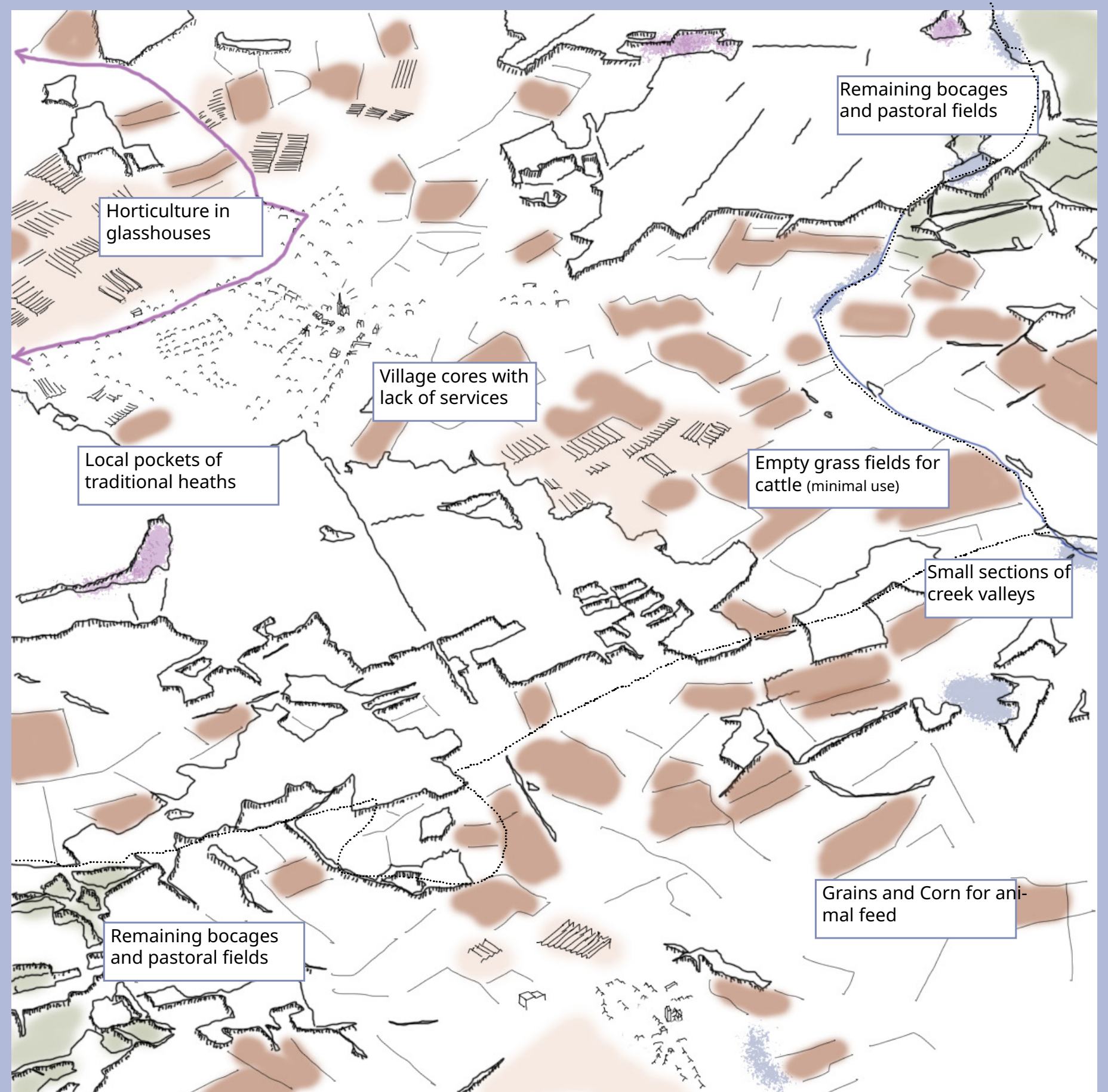
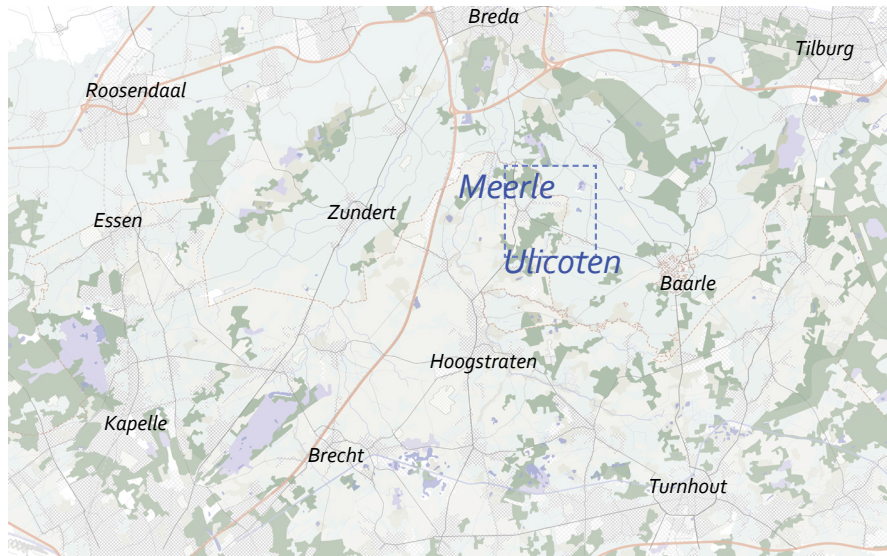
- | | | | | |
|-------------------|--------------------|--------------------------|------------------------|---------------------|
| Nature areas | Nature Restoration | River | Regional hospital | Research cluster |
| Green zones | Green Network | Urban expansion | Local clinic | Circular industries |
| Orange zones | Blue Network | Water Extraction | Local first responders | |
| Red zones | Regional BGN | Water Retention | Reuse hub | |
| Natura2000 Buffer | Local BGN | Transportation corridors | Service cluster | |





Local Casus

Meerle-Ulicoten



Sketch of current landscape and issues

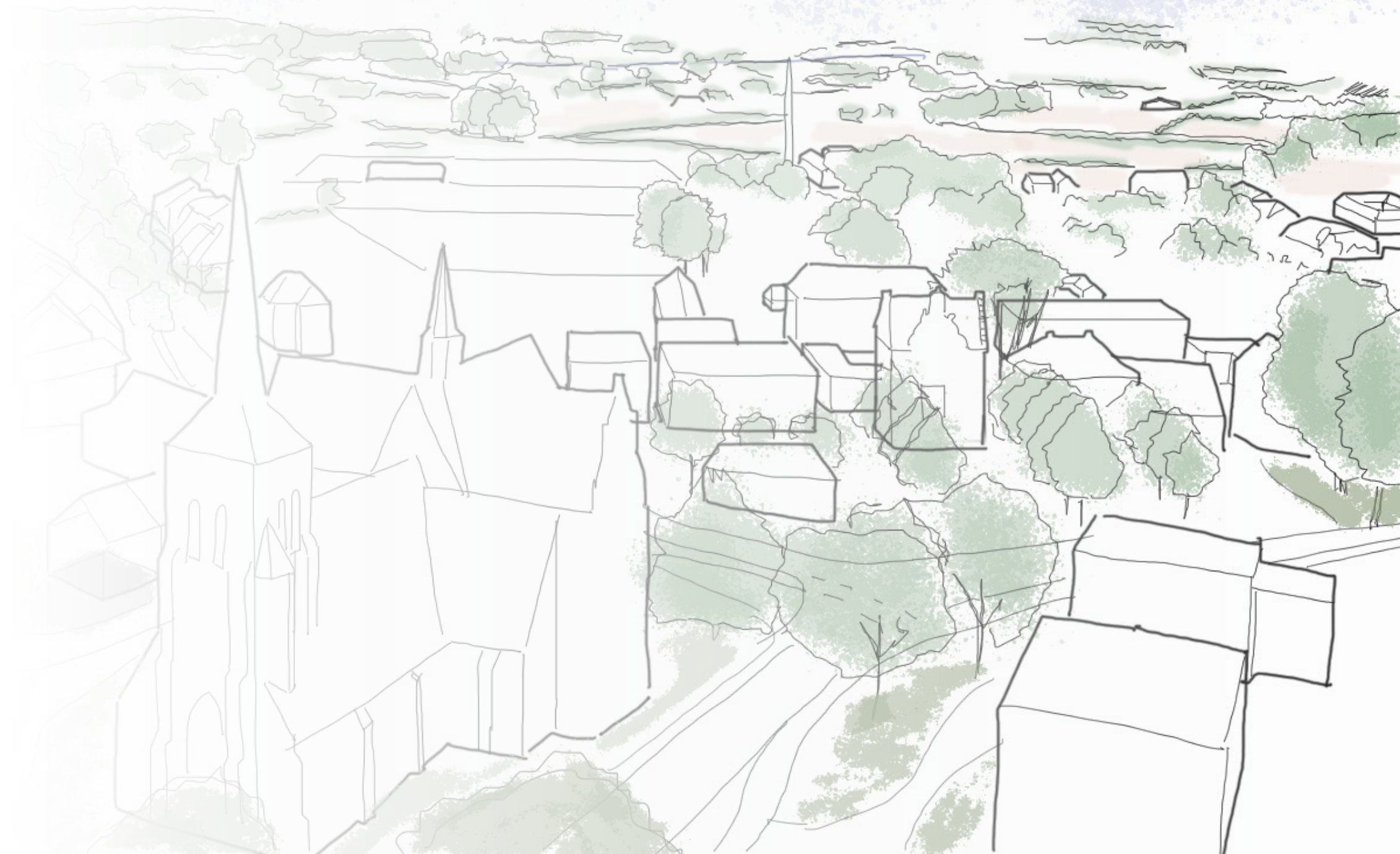
Local Casus

Regenerative landscape

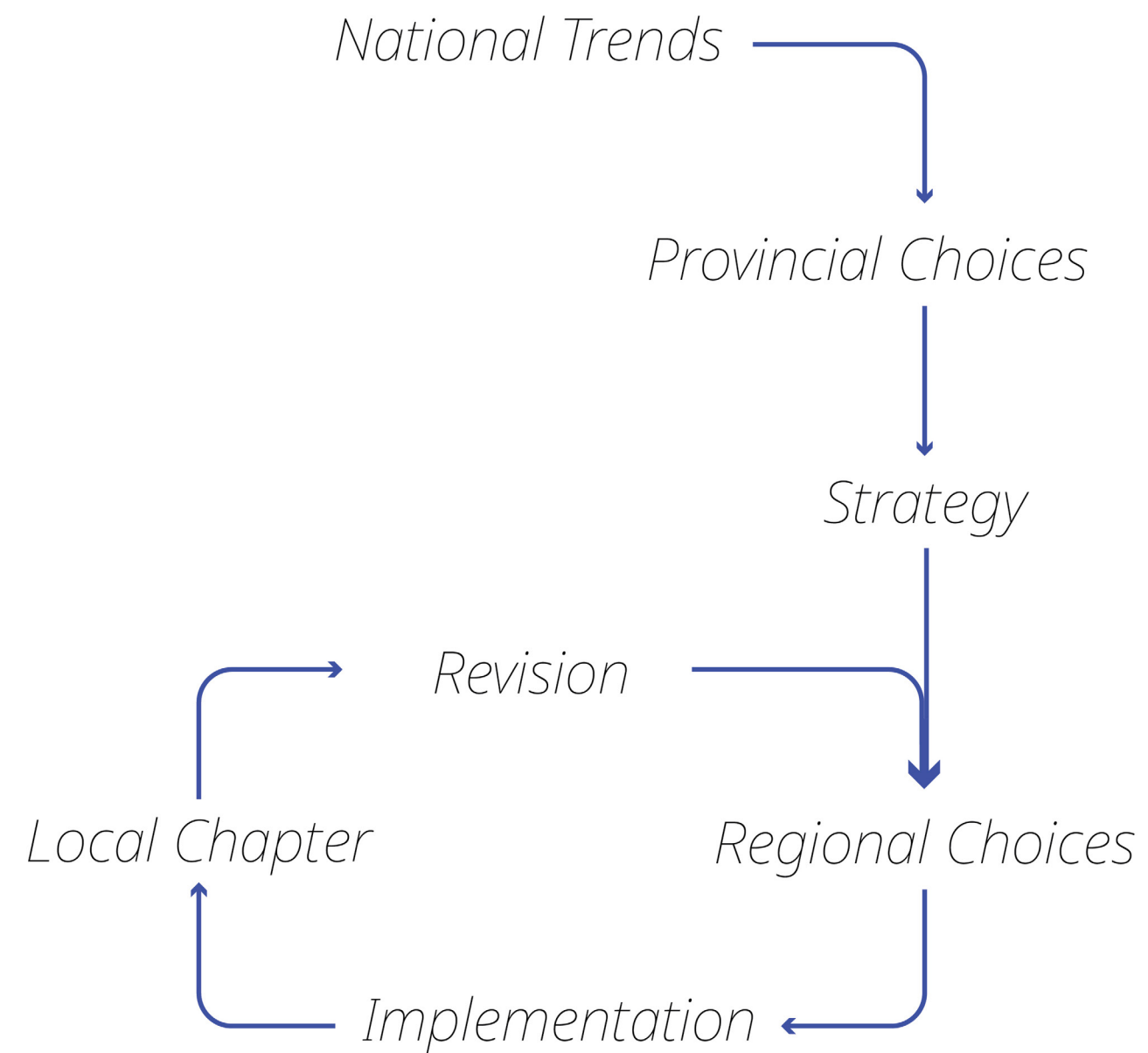


Sketch of possible outcome with changes

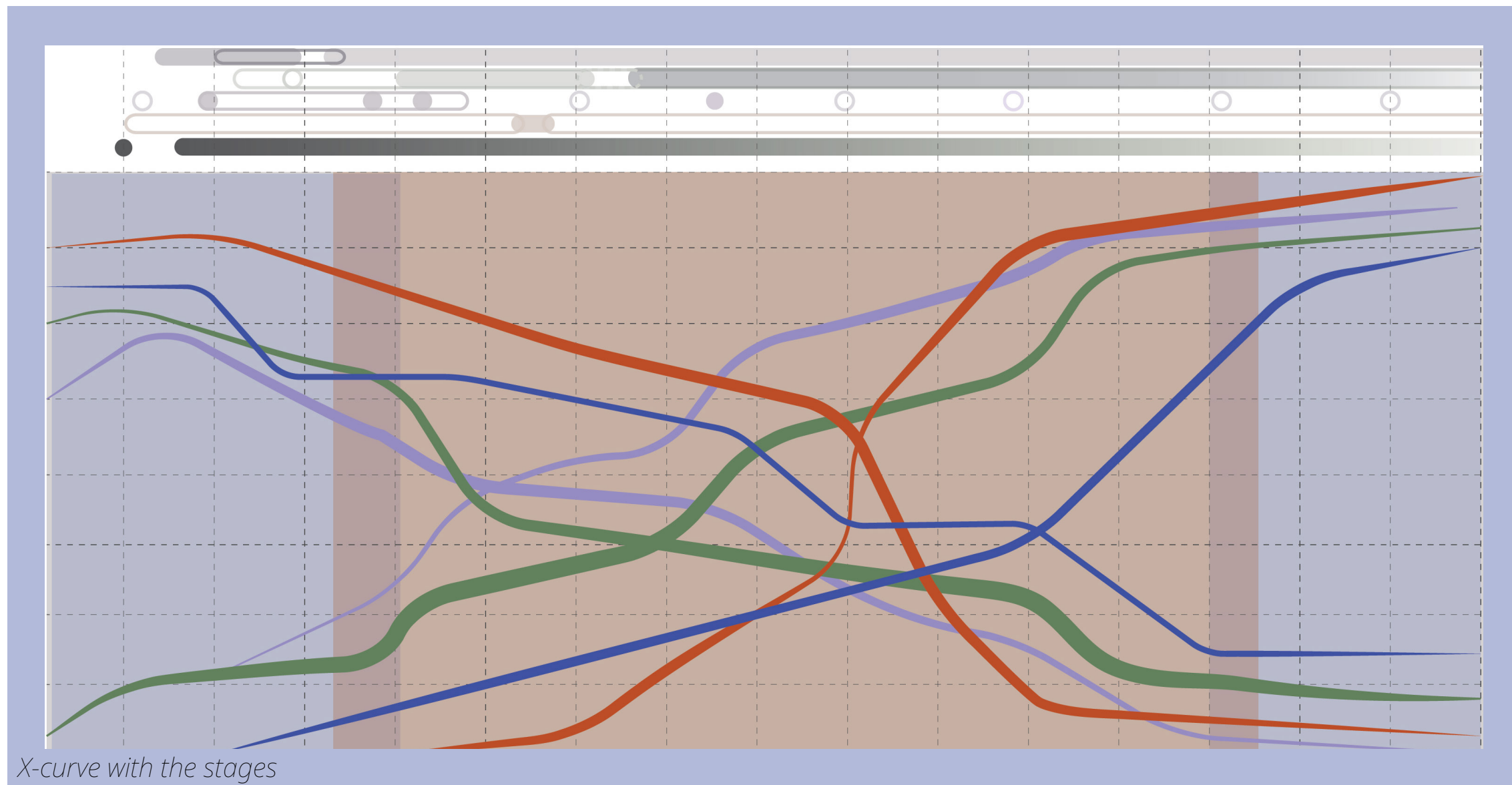
Simulation



Process



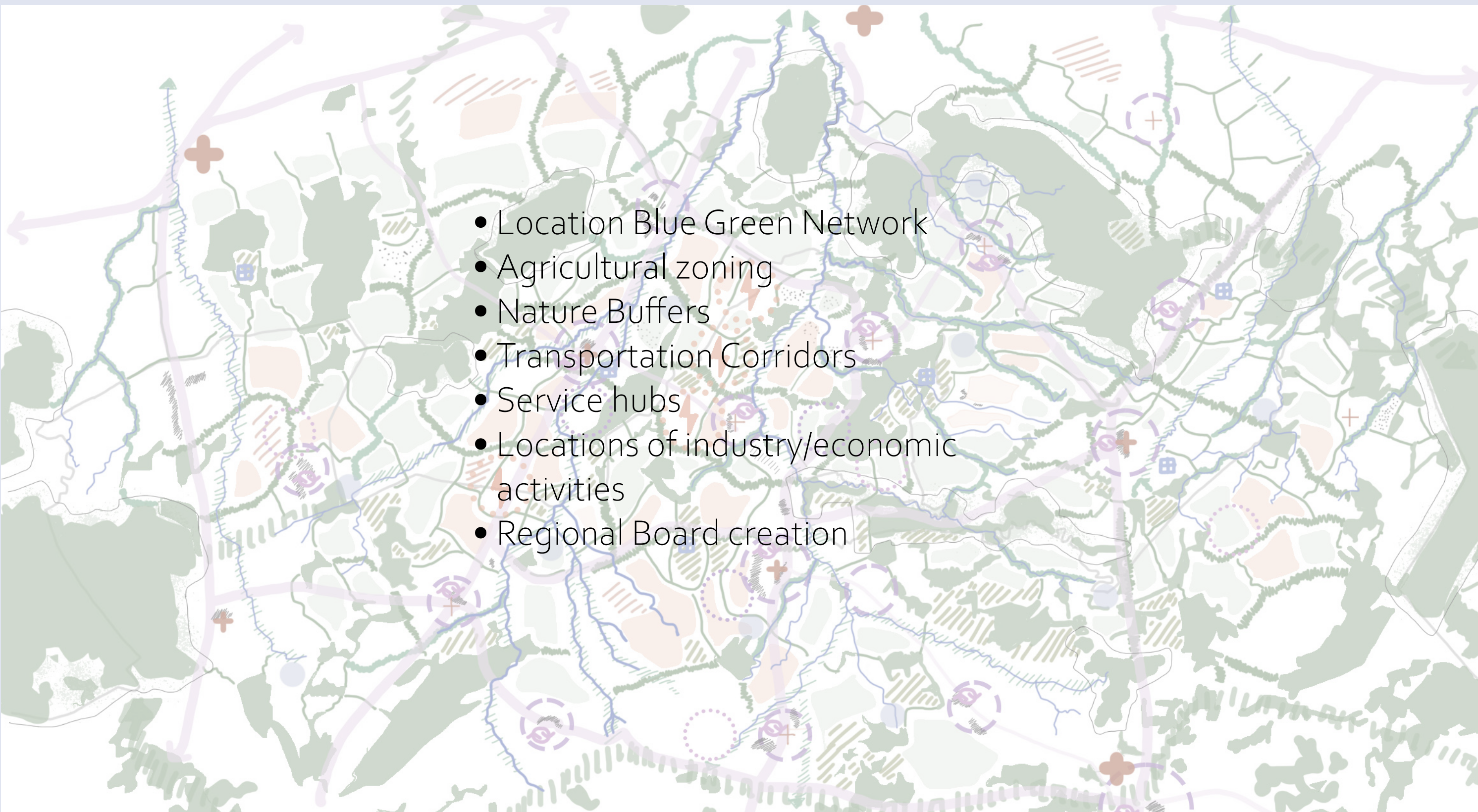
Process



National Choices

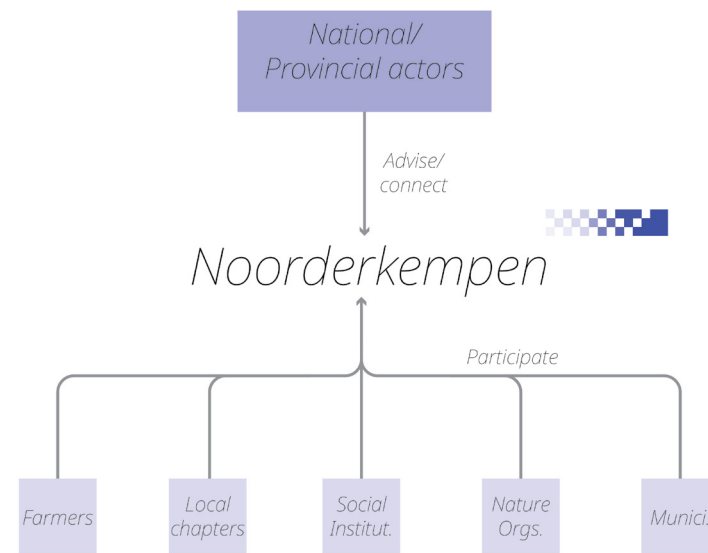
- Protein Shift
- Blue Green Network
- Soil as Base
- Agricultural Zoning
- Nature Buffers

Regional/Provincial Choices

- 
- A detailed regional strategy map showing a complex network of transportation corridors, service hubs, and land use zones. The map features a central urban area with various colored zones (green for nature buffers, orange for agricultural zoning, and light green for other land uses). Purple dashed circles and lines indicate specific locations and corridors. Red plus signs mark key points of interest. The map is overlaid with a list of regional/provincial choices.
- Location Blue Green Network
 - Agricultural zoning
 - Nature Buffers
 - Transportation Corridors
 - Service hubs
 - Locations of industry/economic activities
 - Regional Board creation

Regional Strategy Map

Regional Board

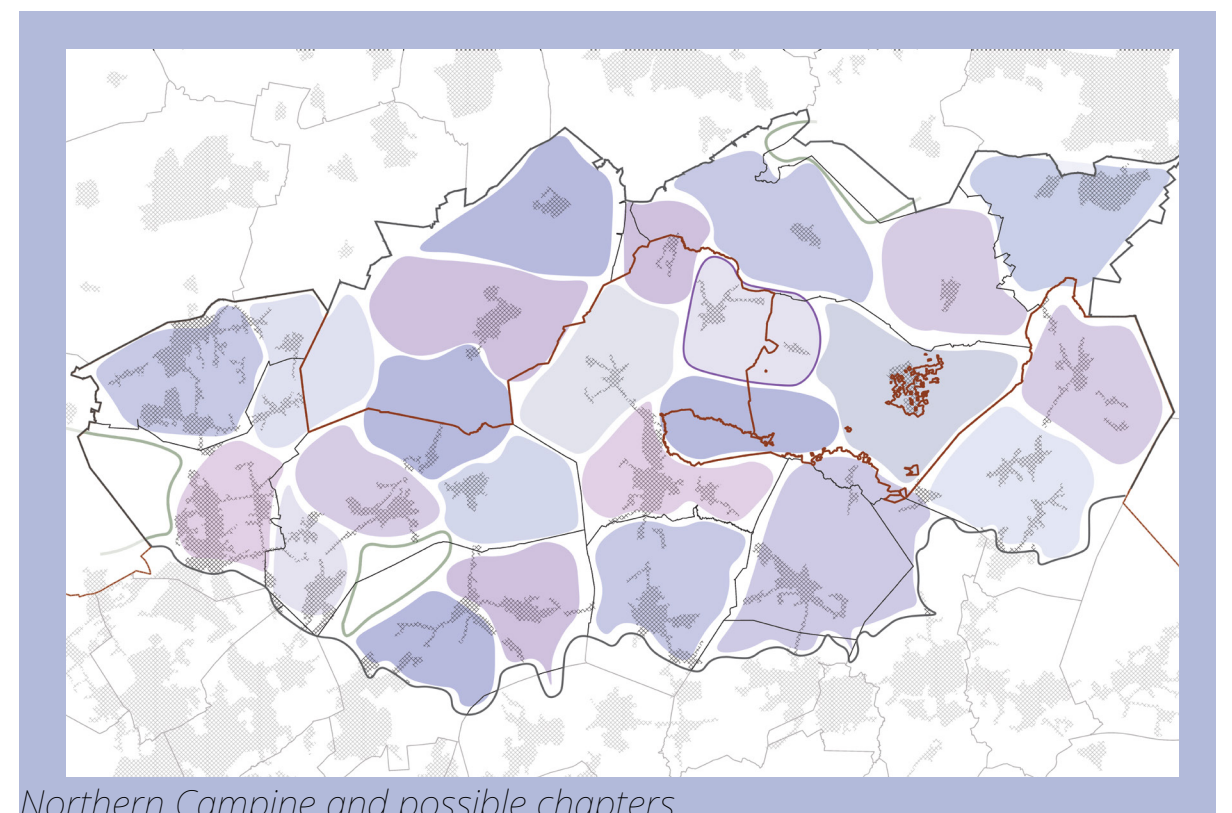


Members

- National Representatives Nature and Planning orgs.
- Municipal representatives
- Farming groups
- Commercial groups
- Nature organisations
- Socio-cultural institutions
- Chapter heads

Tasks

- Implement/revise regional strategy
- Arbitor between members/ chapters
- Link between BE and NL
- Provide services
- Maintain soil quality



Northern Campine and possible chapters

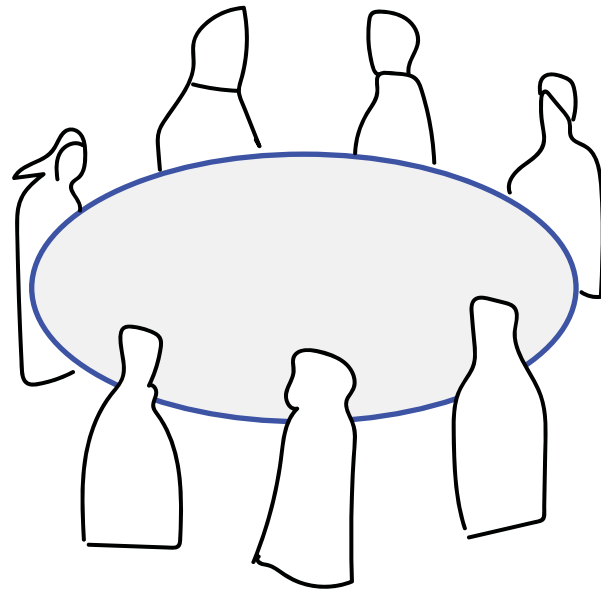
Implementation

Choices Needed

- Location Agricultural and nature zoning
- Ecological corridors locations and types
- Transit Corridors
- New Services
- New economy
 - eg: cooperative farming and processing
 - circular building sector
- Types water retention
- Locations water extraxtion



Local Chapter

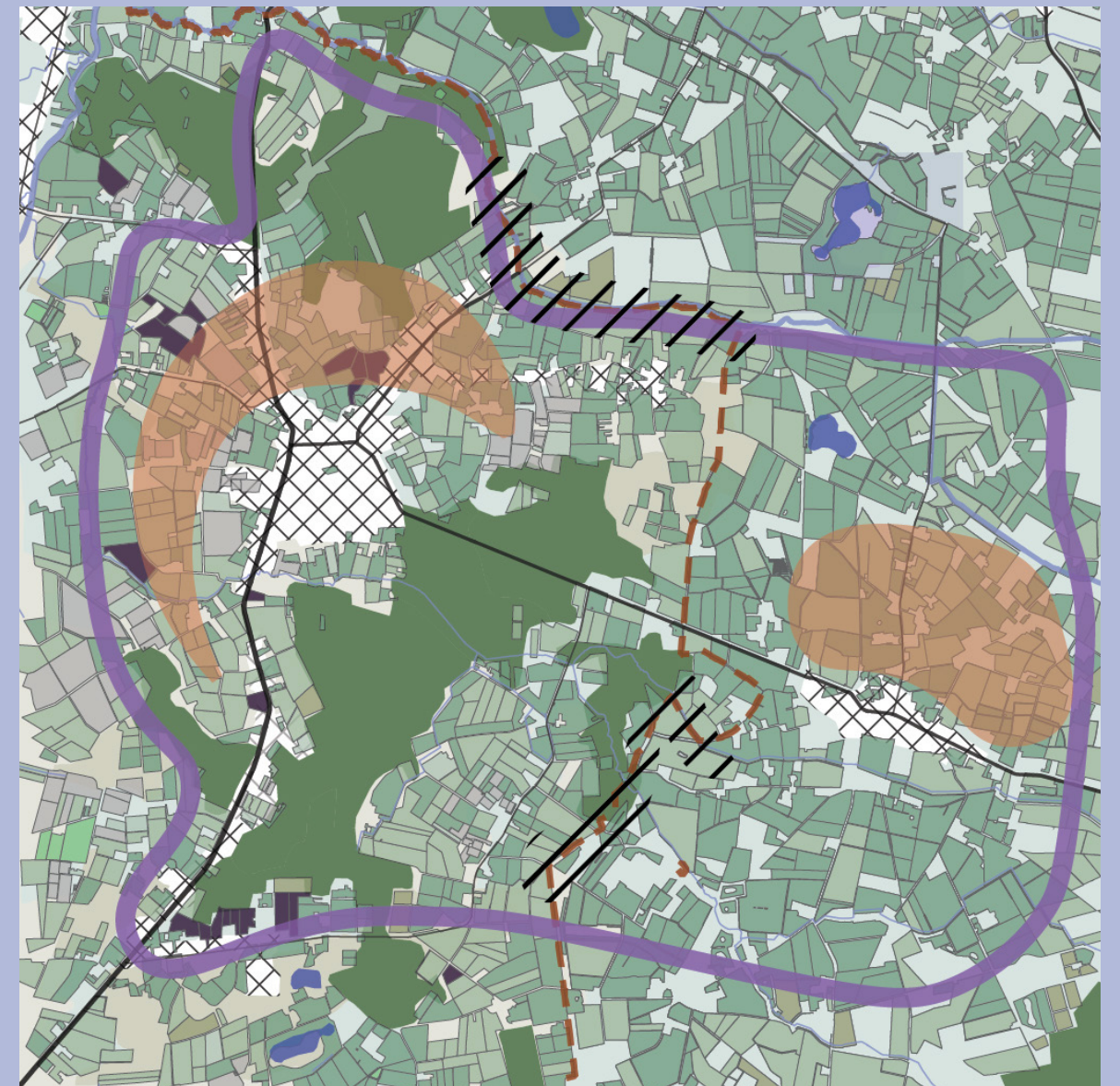


Members

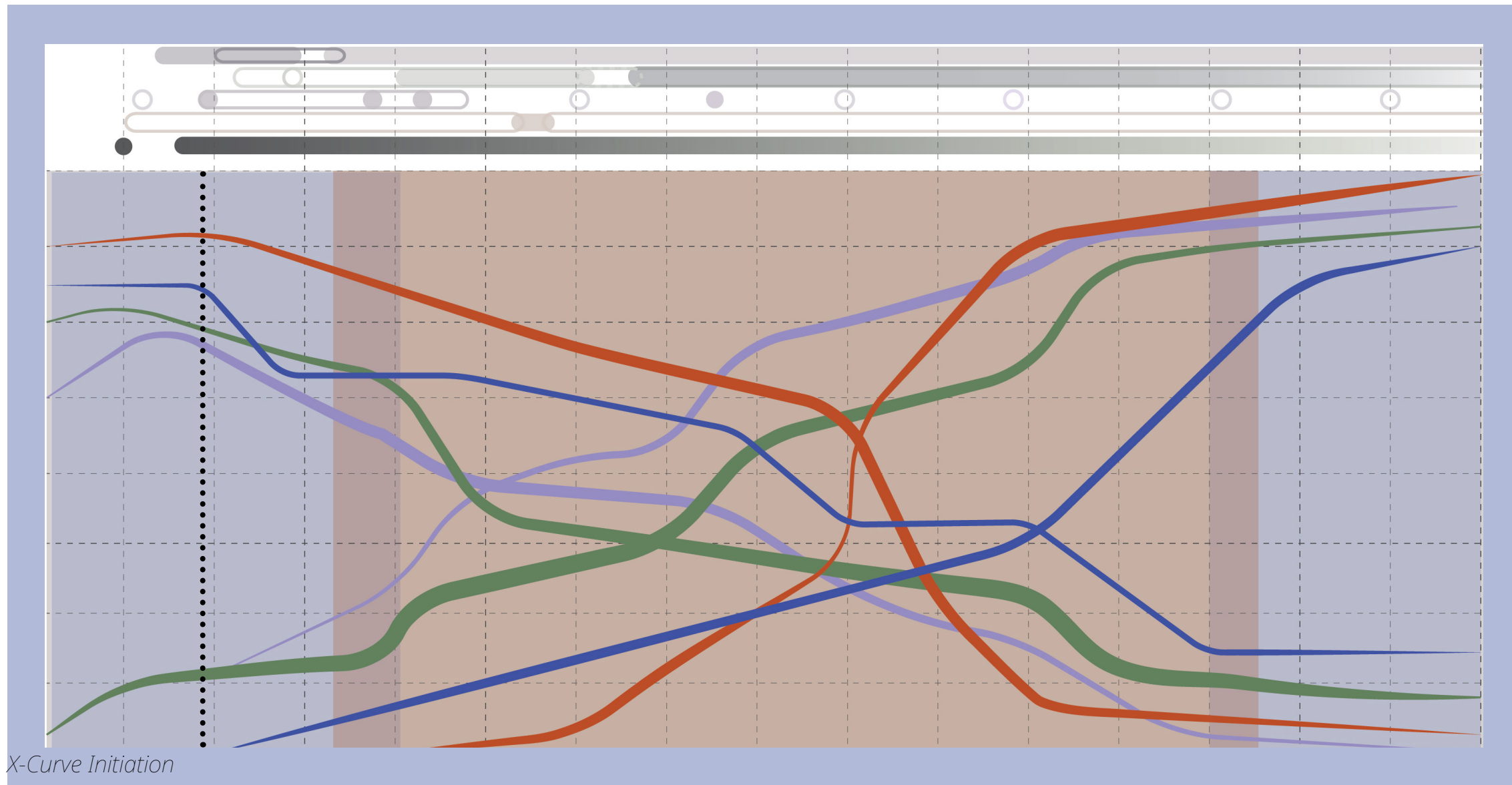
- Farmers
- Residents
- Municipal representative
- Regional board representative
- Commercial owners
- Socio-cultural institutions
- Water companies

Tasks

- Implementation corridors
- Choice of economy/ production
- Revising plans
- Platform for local participation
- Shared water management
- Agriculture zoning
- Service allocation



Initiation



Initiation

Choices

- Repurpose abandoned buildings
- Remove parking spaces
- Improve cycling infrastructure
- Set up Cooperative Agriculture
- Extensification
- Identify spaces for densification

I
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Projects



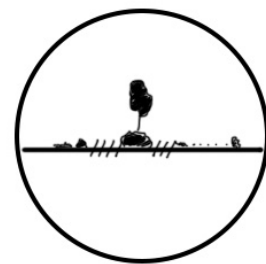
1:
Cooperative
Agriculture



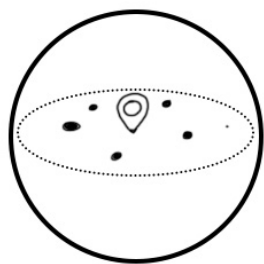
5:
Non-car
mobility



2:
Services



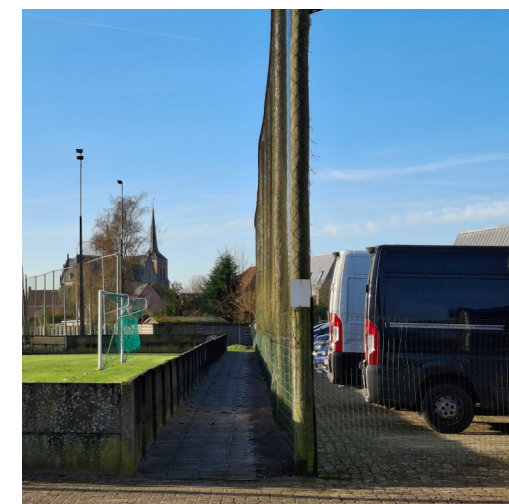
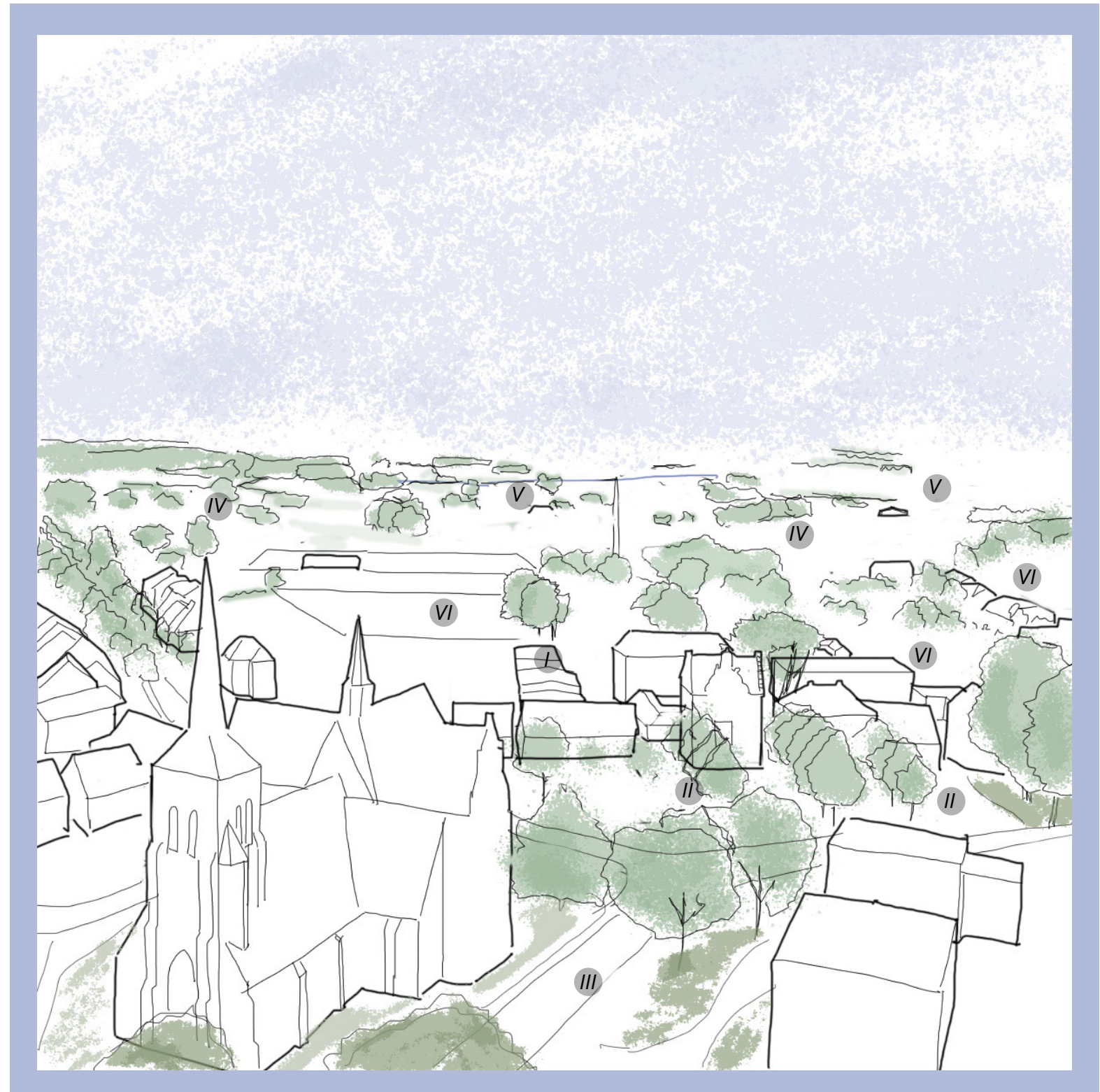
8:
Agri. and
Nature
zoning



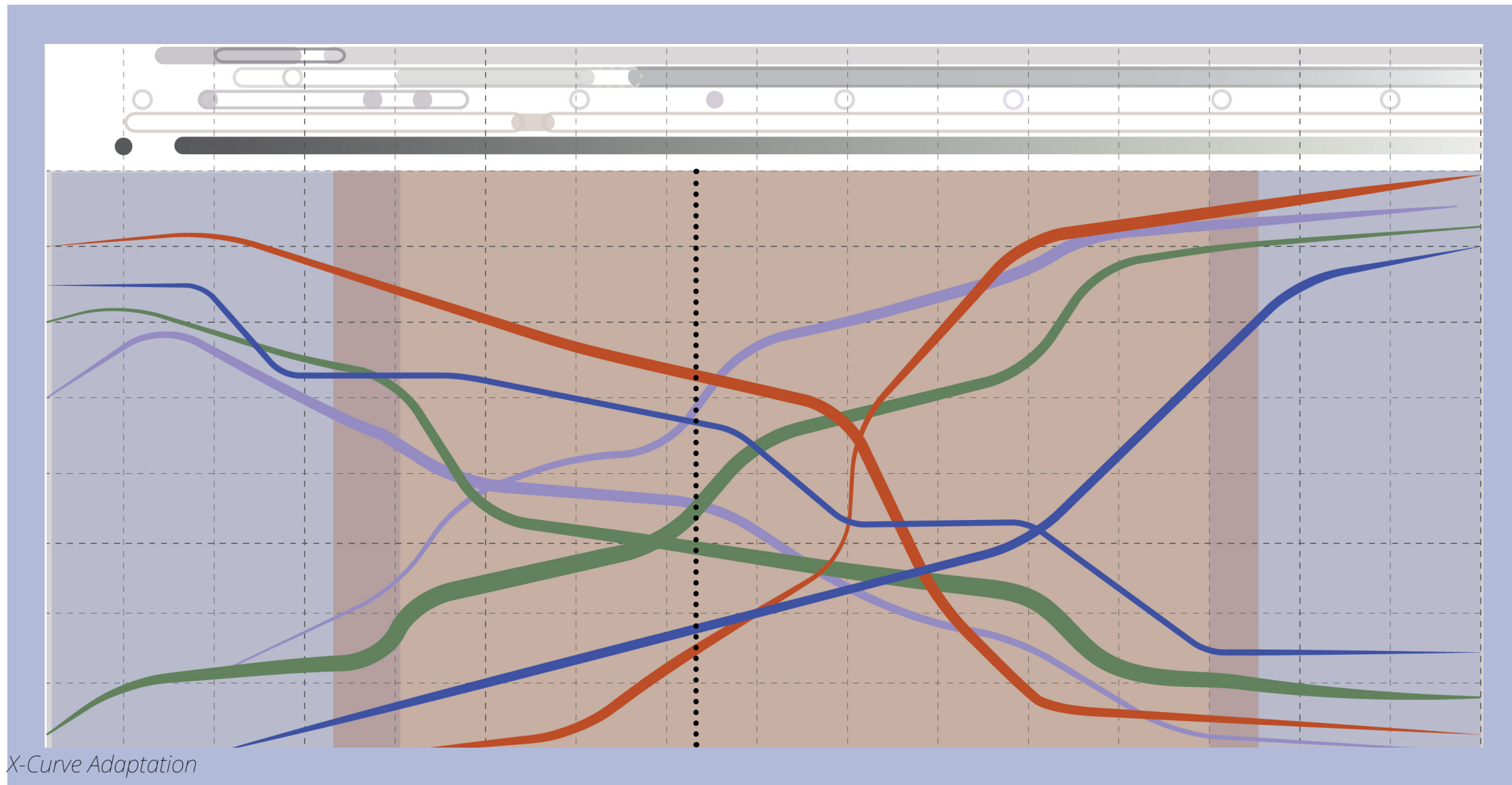
4:
Proximity



9:
Agriculture types



Adaptation



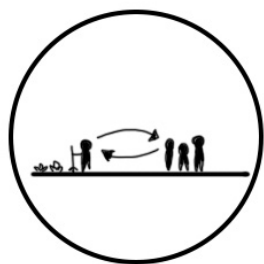
Adaptation

Choices

- Densification and services
- Market space
- Expansion cooperative agriculture
- Setting up processing
- Further Extensification
- Expanding BGN

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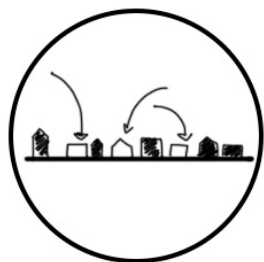
Projects



1:
Cooperative
Agriculture



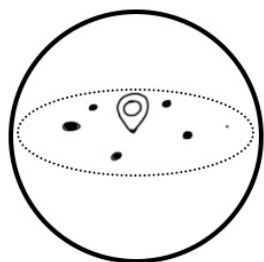
5:
Non-car
mobility



2:
Services



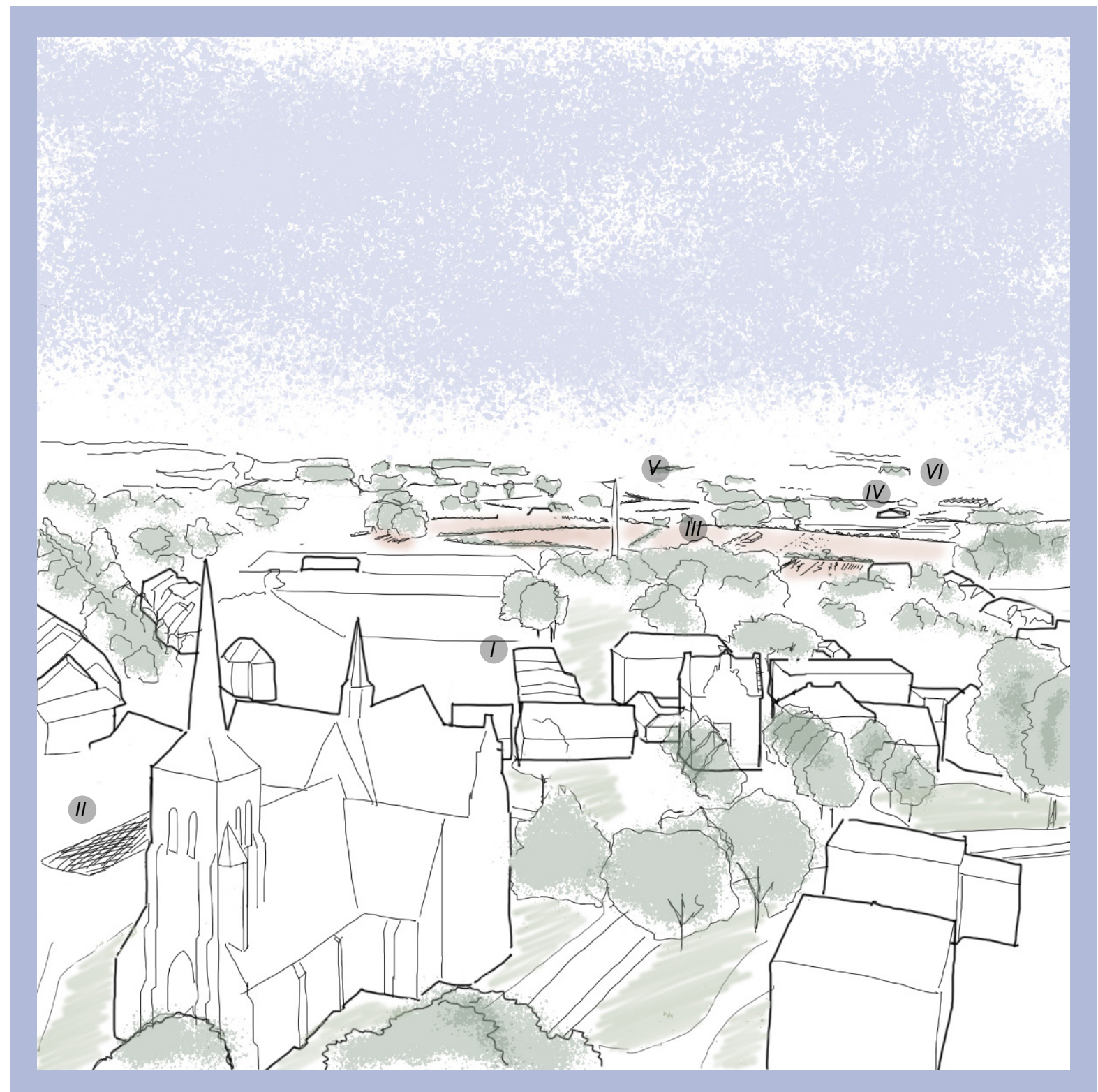
9:
Agriculture types



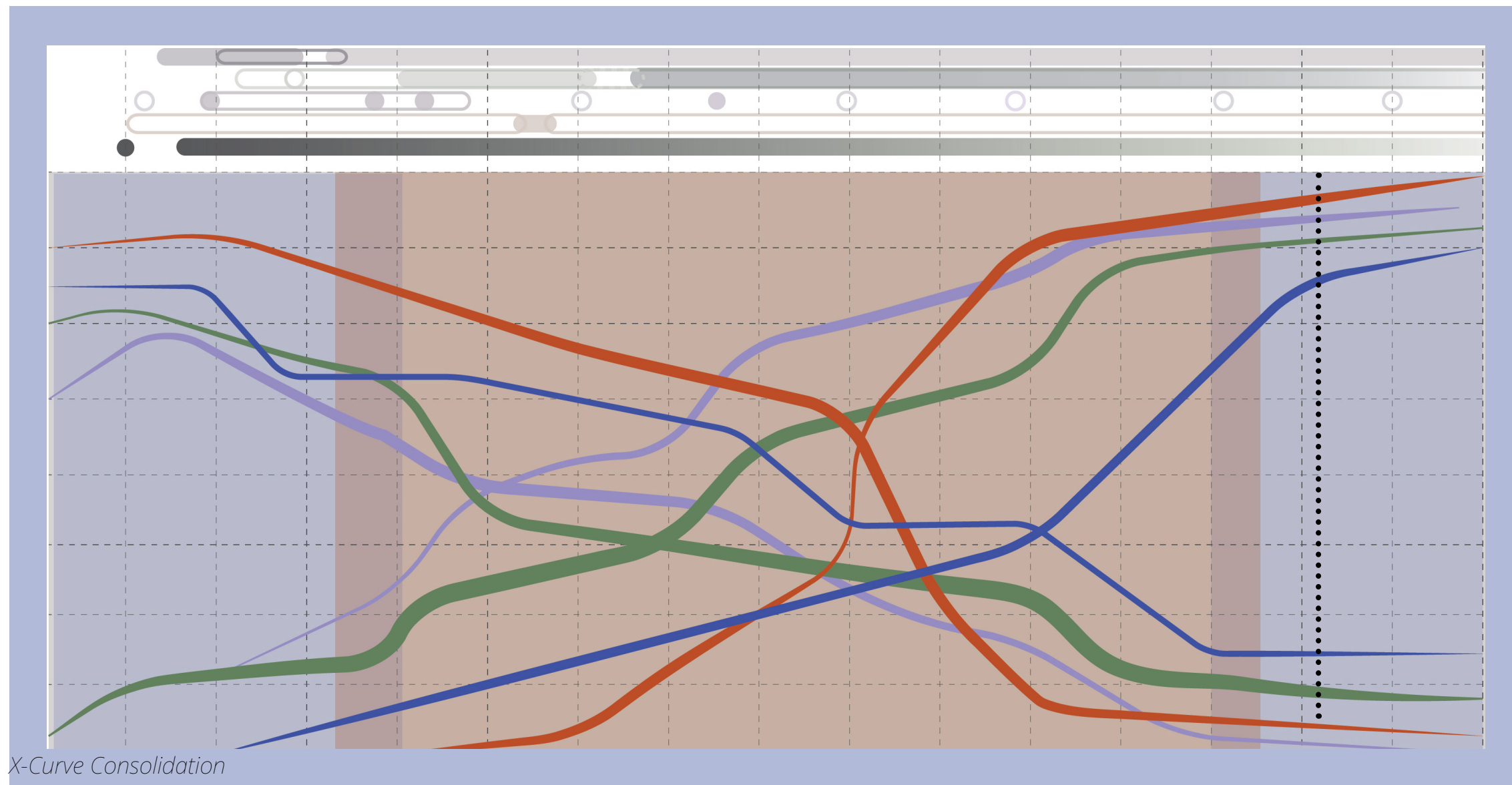
4:
Proximity



11:
Ecological Corri-
dors



Consolidation



Consolidation

Choices

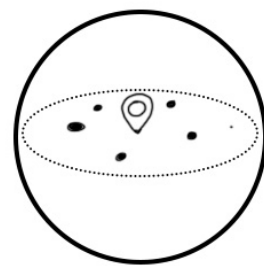
- Local processing
- Market space
- Multifunctional spaces
- Densification Housing
- Central Transit stop

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Projects



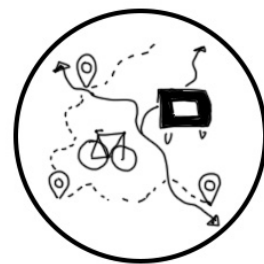
1:
Cooperative
Agriculture



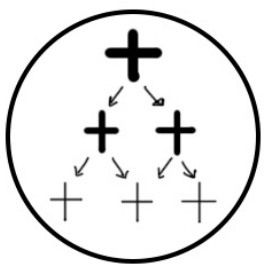
4:
Proximity



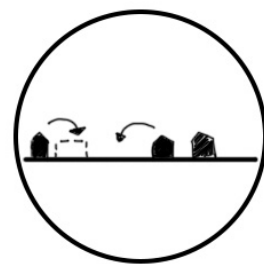
2:
Services



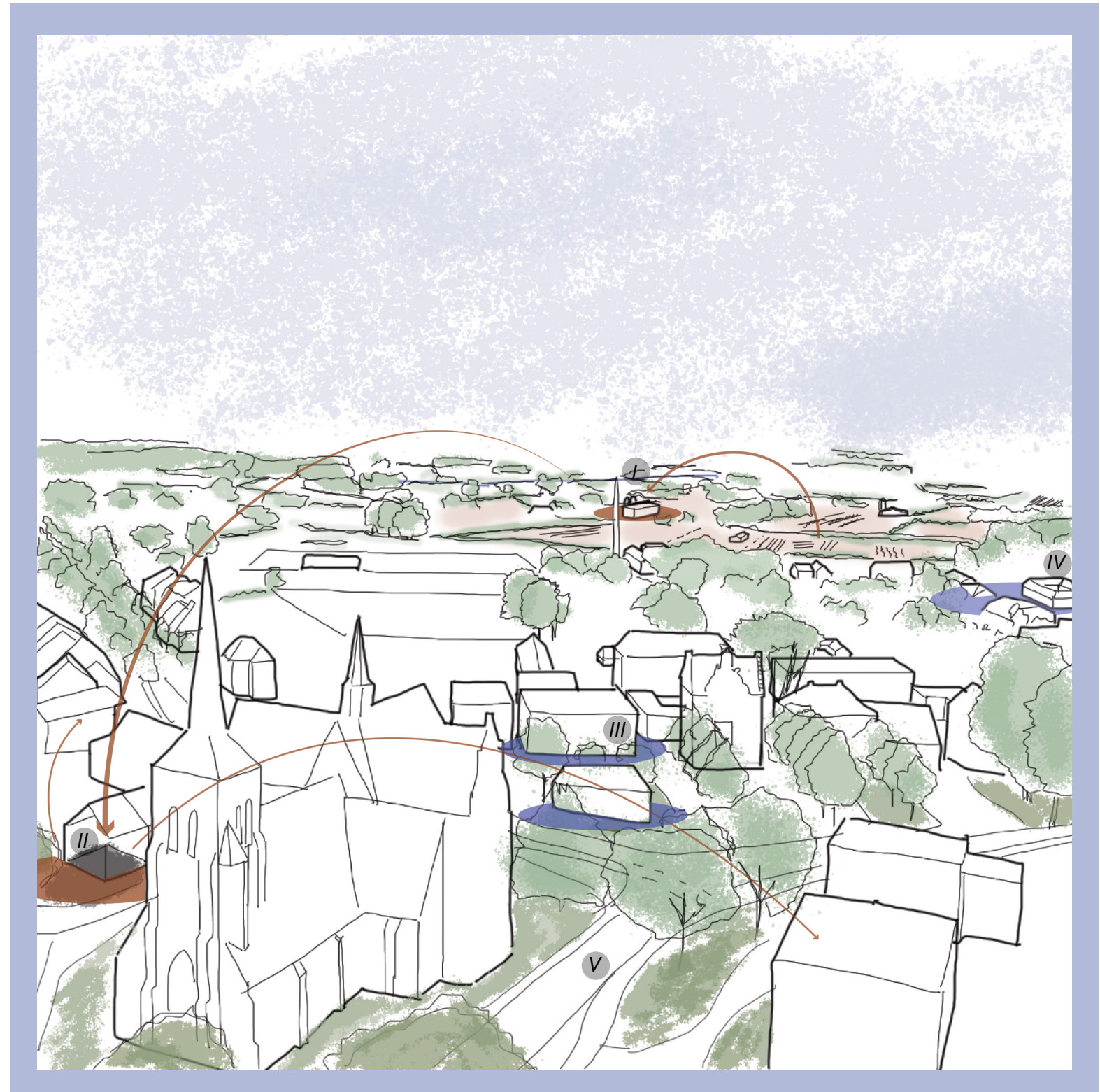
5:
Non-car
mobility



3:
Healthcare Sys-
tem



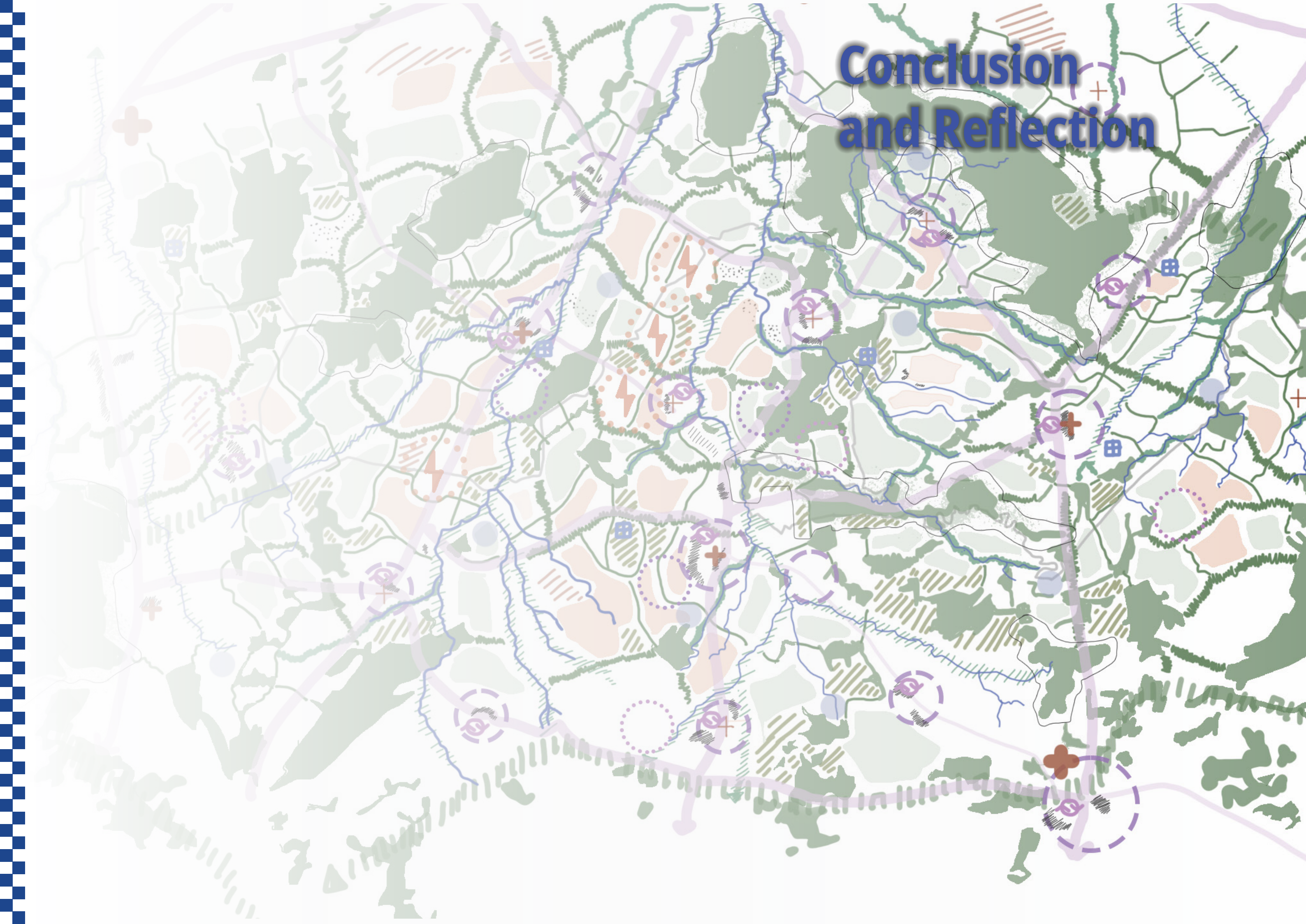
6:
Reusing and ex-
panding





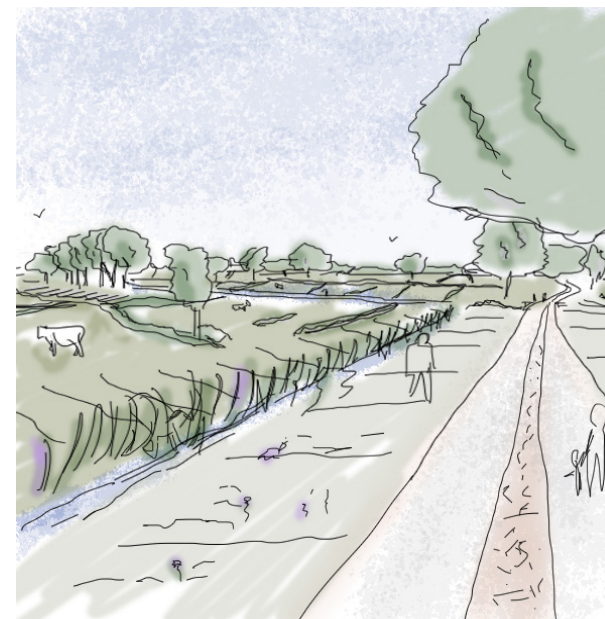
Village square after consolidation

Conclusion and Reflection



Conclusion

How could **regenerative sustainability** counter **ecological and social depletion** resulting from intensive **land-uses and rural shrinkage** in the Northern Campine region?



Regenerative Sustainability allows for a shift in thinking from depletive systems of production to systems that focus on the natural limits based on soil. The connection with social aspects can be strengthened through the implementation of local systems aimed at meeting the needs of locals first rather than external needs.

Conclusion

Spatial Themes				
Soil and Water		-	o	+
Water retention	increased drought	Uneven distribution	Increased retention	
Flooding	More extreme	irregular	Decreased	
Water Extraction	National level	Regional level	Bassin based	
Water system	Singular system	Regional system	Local systems	
Agricultural use	Anything goes	Regional specialis.	Based on soil types	
Water quality	Unusable	Low quality	High quality	
Soil quality	Depleted	Low quality	Healthy and vital	
Ecology				
Cultural landscapes	Non-existent	Small pockets	Integrated network	
Natura 2000 zones	Agri. taken away land	Agri. next to	Expanded with buffers.	
Biodiversity	Further loss	Endangered	Recovery	
Blue-Green Network	Not implemented	Disconnected	National and connected	
Hybrid Themes				
Mobility				
Modes	Single modes	Heavy focus on one	Mixed modes	
Network type	Radial, no rural links	Radial to core	Mix radial and transverse	
Core goal	High profit	Profit	Service based	
Resilience and Regenerative				
Functions	Monofunctional	Some basic services	Multifunctional	
Information exchange	No exchange	Top down	Horizontal	
Governance Networks	National	Provincial	Local and horizontal	
Housing provision	detached	terraced and detached	mix of types	
Institutional Themes				
Cross Border Coop.				
Level of stakeholders	National	Provincial	Local and provincial	
Goals	Diverging	Slight vanations	Shared	
Vision	Diverging	Similar	Shared	
Network of actors	National	Provincial	Local	
Institutions needed	Many (national and local)	Multiple	Limited	

Spatial Themes		
Soil and Water		
Water retention		+
Flooding		+
Water Extraction		o
Water system		+
Agricultural use		+
Water quality		+
Soil quality		+
Ecology		
Cultural landscapes		+
Natura 2000 zones		+
Biodiversity		+
Blue-Green Network		+
Hybrid Themes		
Mobility		
Modes		+
Network type		+
Core goal		+
Resilience and Regenerative		
Functions		+
Information exchange		o
Governance Networks		o
Housing provision		+
Institutional Themes		
Cross Border Coop.		
Level of stakeholders		o
Goals		+
Vision		+
Network of actors		o
Institutions needed		o

Discussion

Limitations

Location

- Limited transferability
- Different data availability

Methods

- Policy analysis
- Stakeholder analysis (power and interests)

Advantages

- Integral approach
- Basis for system change

Reflection

Ethical implications

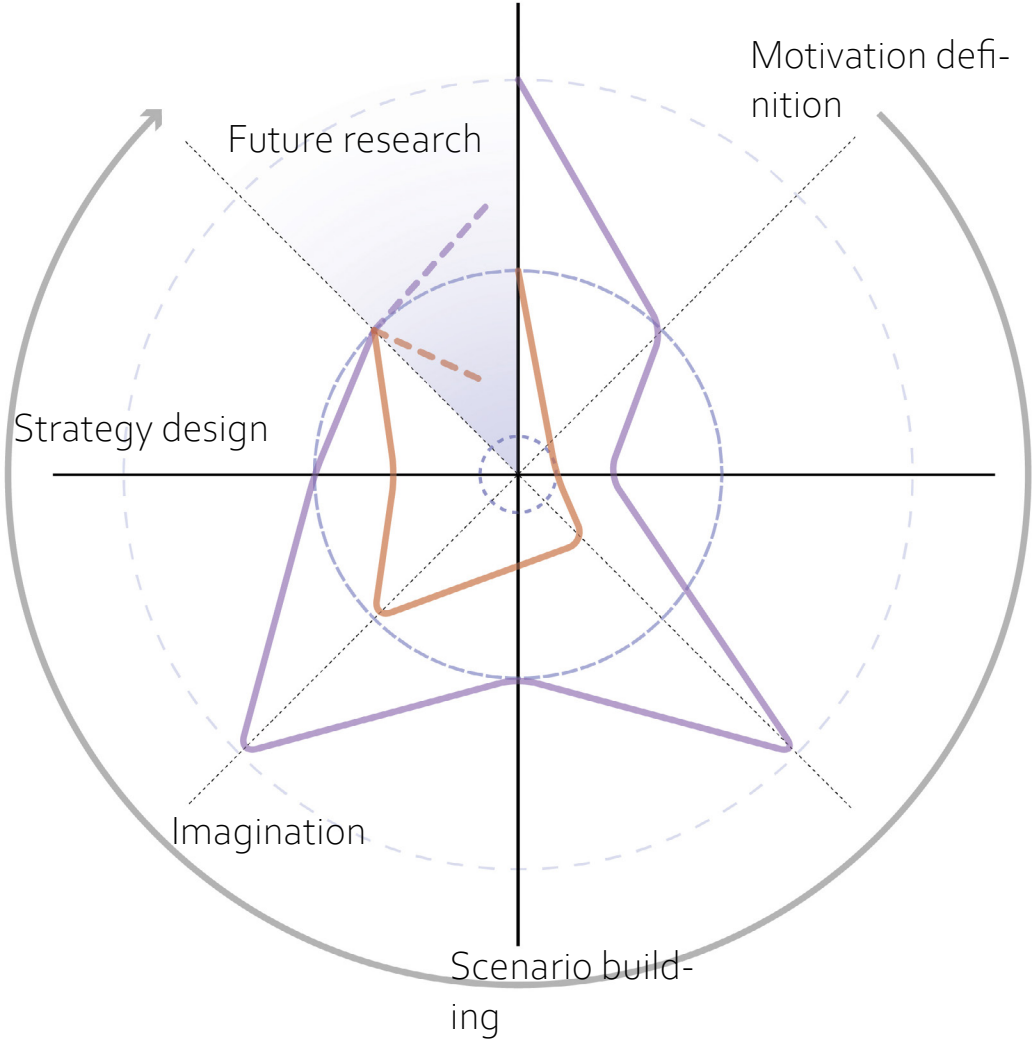
Social

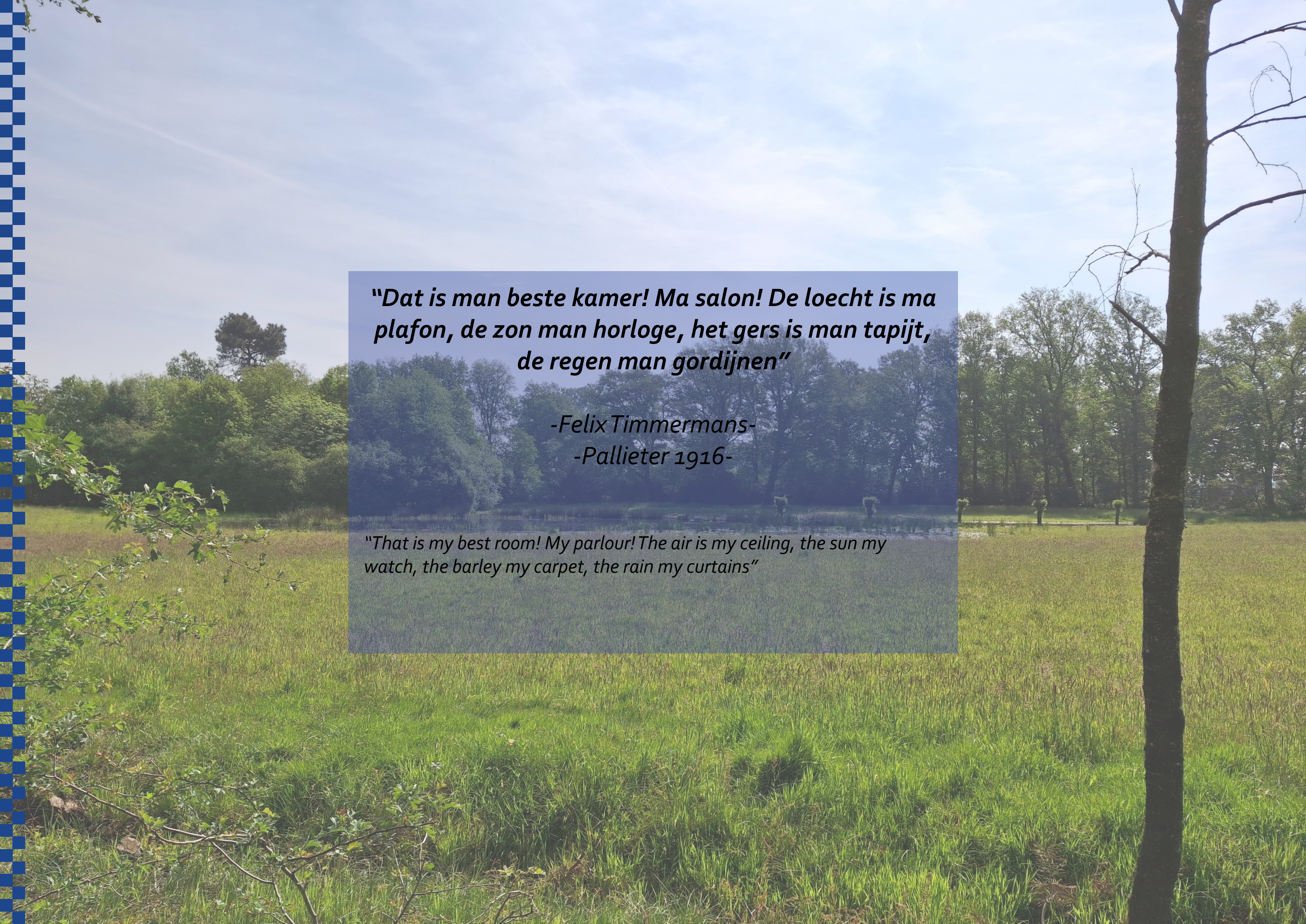
- Focus on quantity services
- Avoid personal bias (conscious or otherwise)
- Allowing room in design for future adaptation by residents

Policy

- Qualitative analysis of existing policies

Reflection





***"Dat is man beste kamer! Ma salon! De loecht is ma
plafon, de zon man horloge, het gers is man tapijt,
de regen man gordijnen"***

*-Felix Timmermans-
-Pallieter 1916-*

*"That is my best room! My parlour! The air is my ceiling, the sun my
watch, the barley my carpet, the rain my curtains"*



Appendix



Initiation

Choices

- Hedgerows as plot edges
- Agriculture types
- Water retention through vegetation
- Extensification
- Agricultural zoning

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Projects



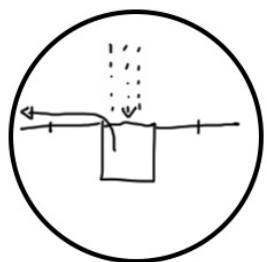
8:
Agri. and Nature
zoning



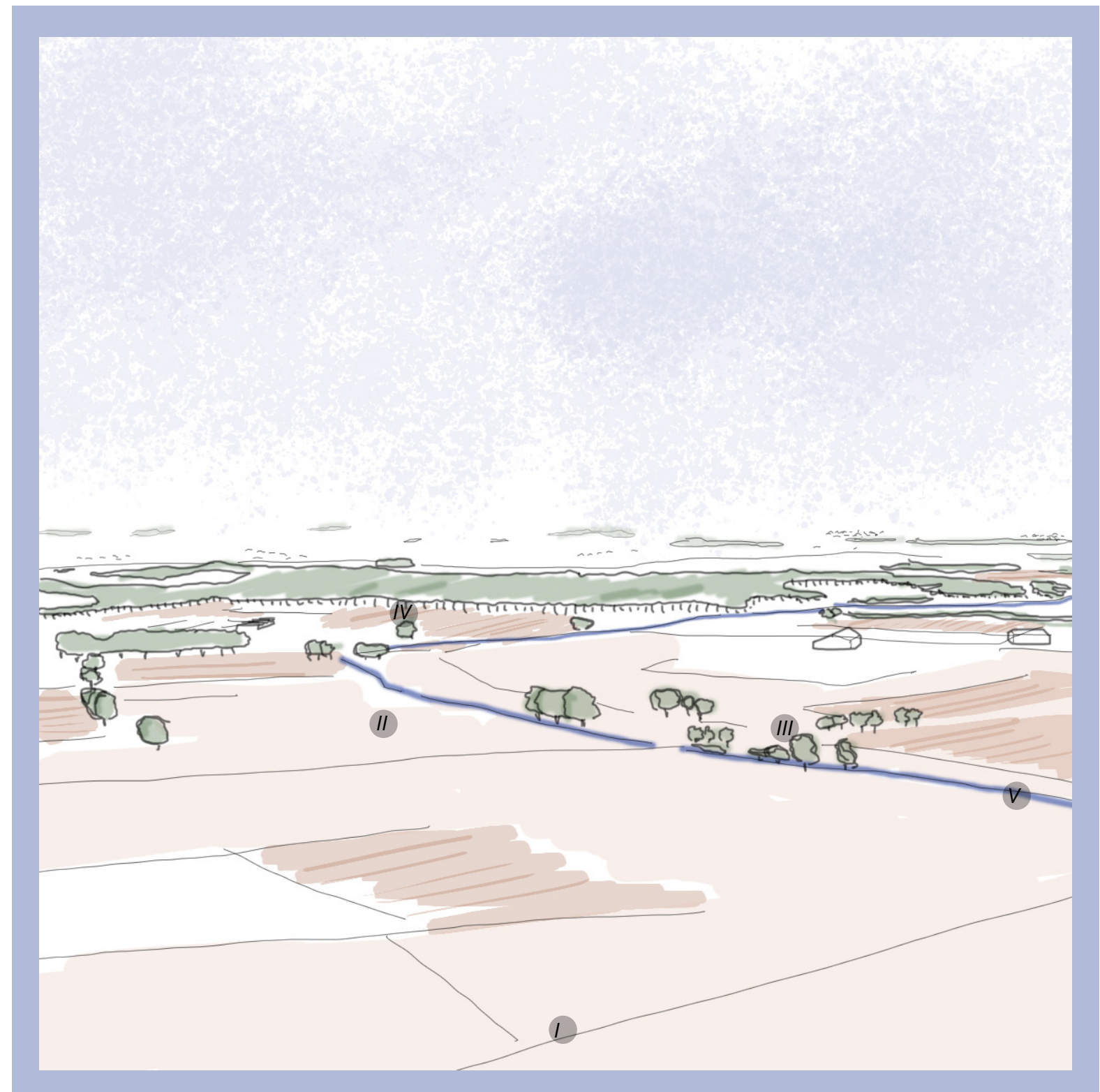
11:
Ecological Corri-
dors



9:
Agriculture types



10:
Local water ex-
traction and re-
tention



Adaptation

Choices

- Agricultural zoning
- Agriculture types
- Thickets
- Water retention
- Extensification
- Expanding BGN

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Projects



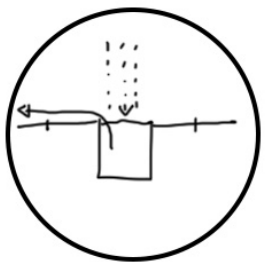
8:
Agri. and Nature
zoning



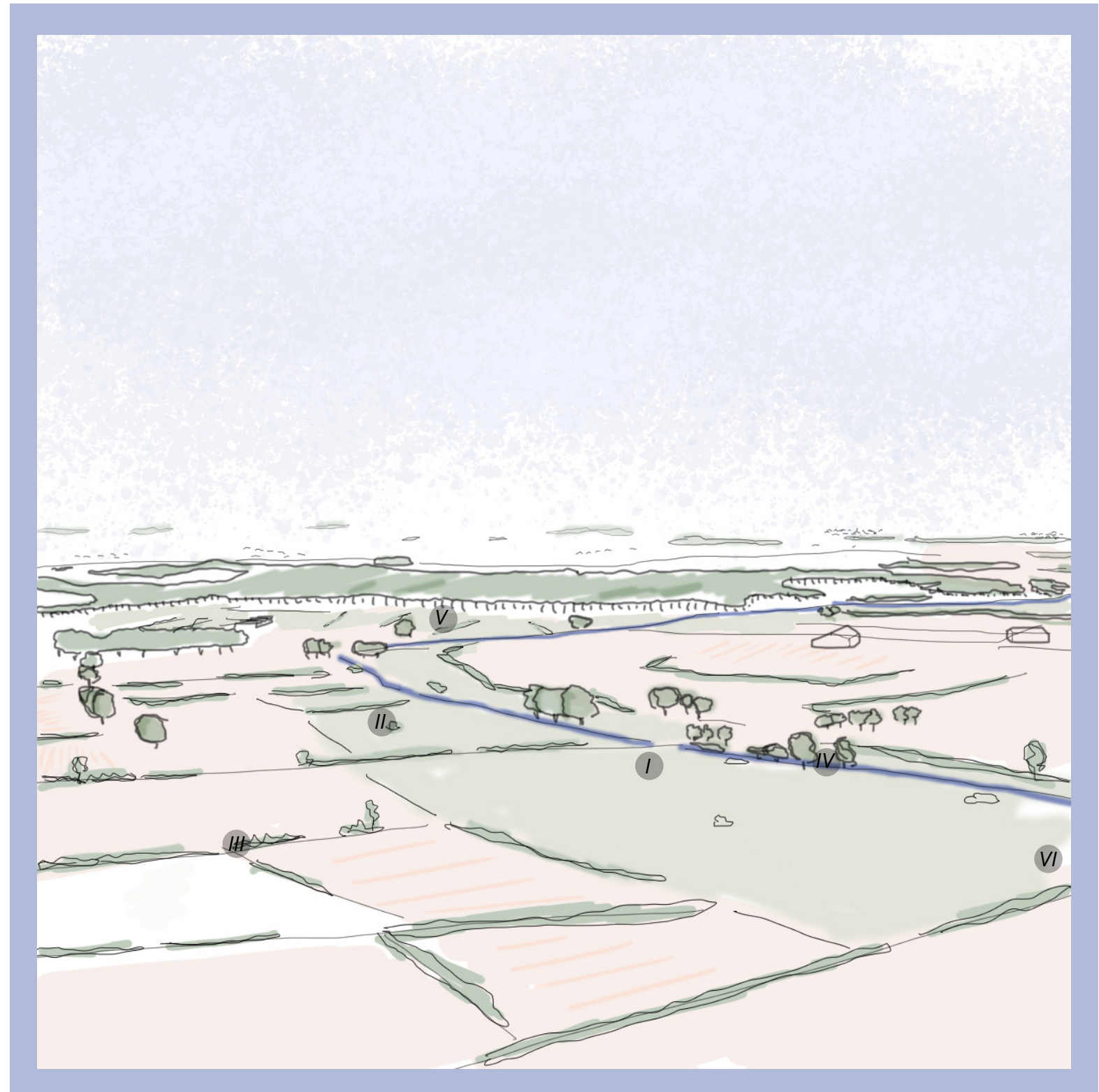
11:
Ecological Corri-
dors



9:
Agriculture types



10:
Local water ex-
traction and re-
tention



Consolidation

Choices

- Connect to local market
- Agriculture types
- Connected Thickets
- Water retention
- Extensification
- Maintain BGN

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Projects



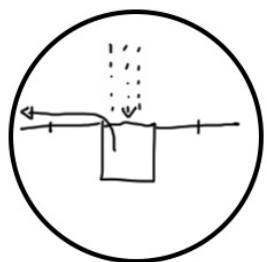
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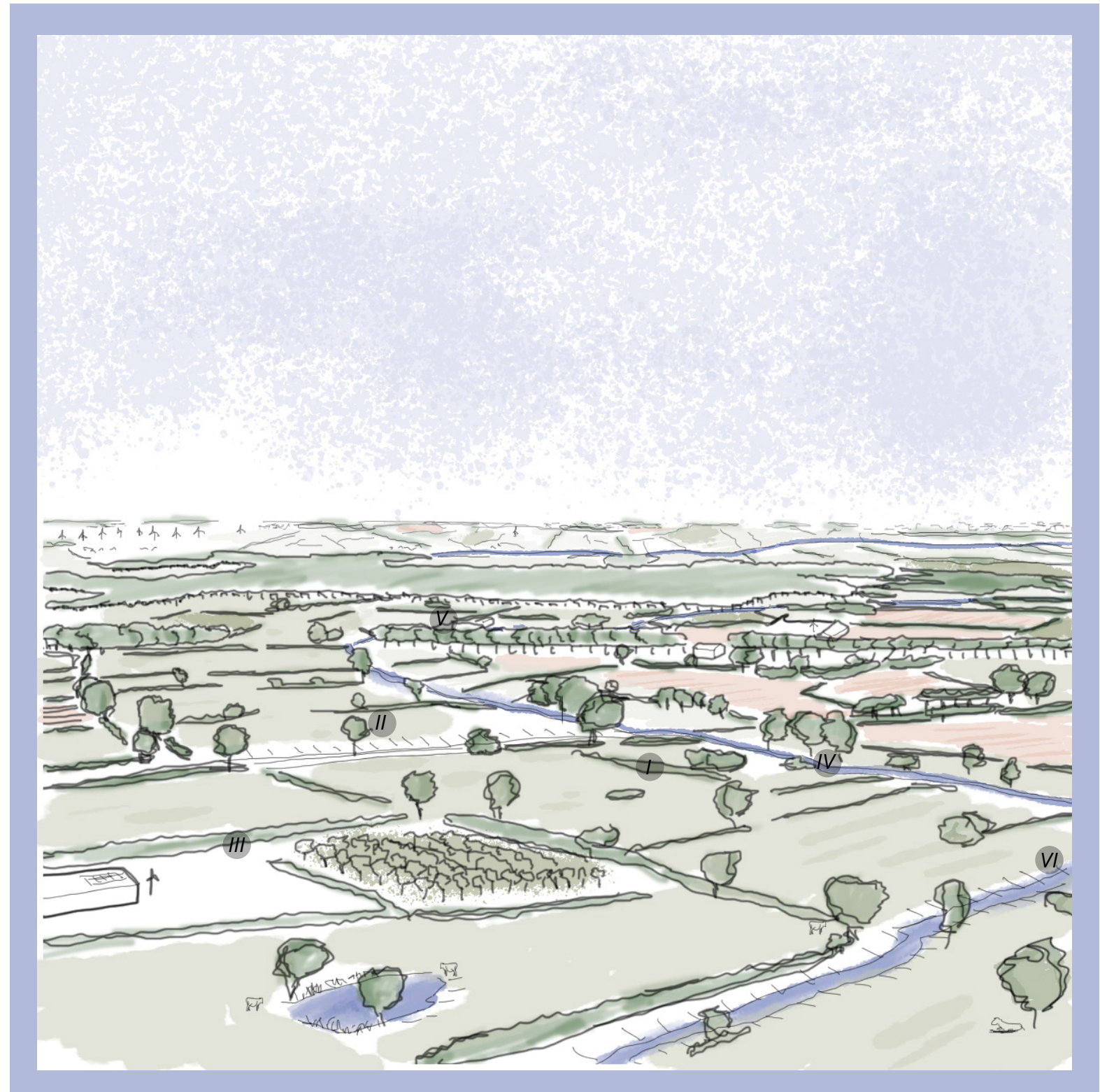
11:
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dors

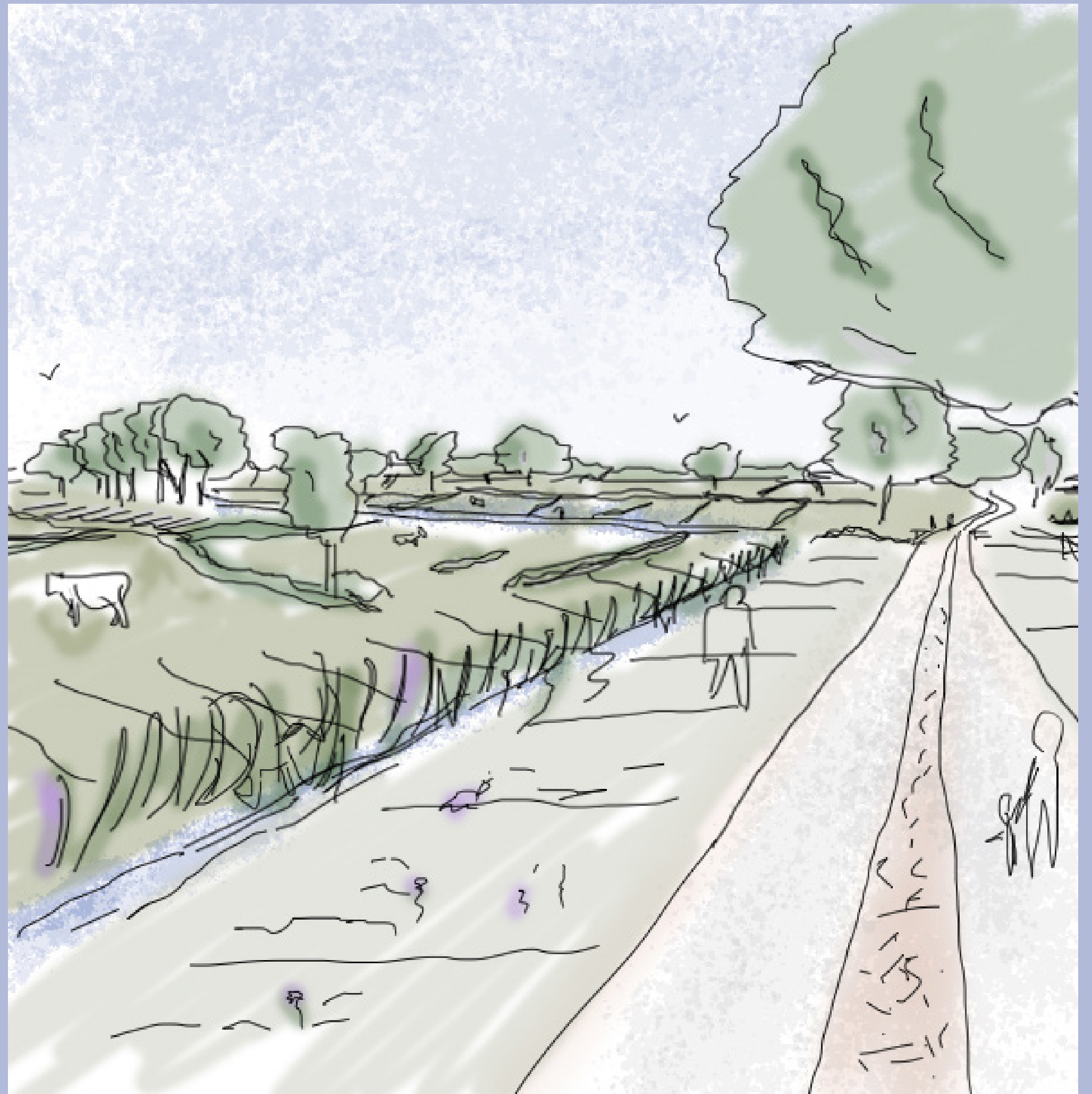


9:
Agriculture types



10:
Local water ex-
traction and re-
tention





Creek Valley after consolidation

