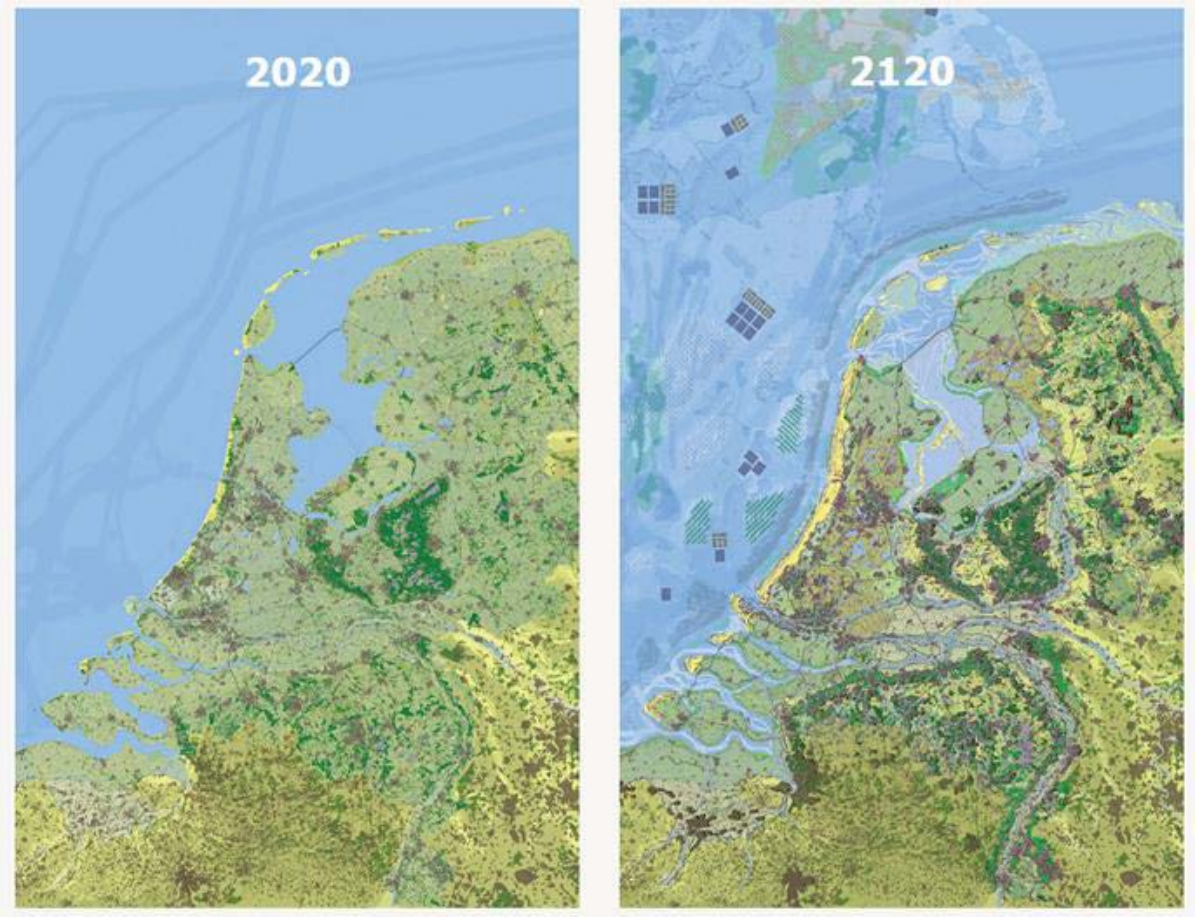
# RESERARCH THROUGH DESIGN

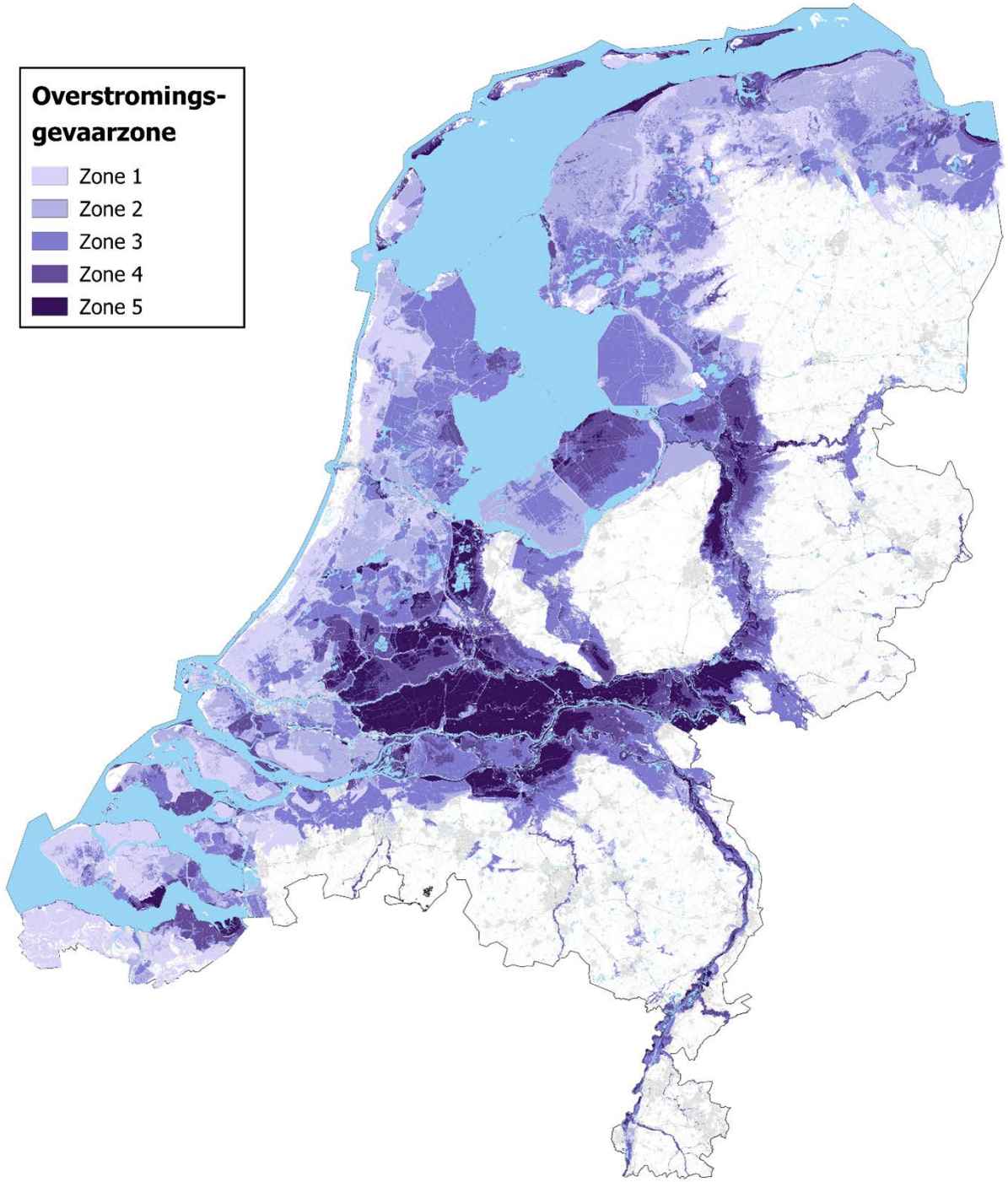
- NL2120

Perspective of climate adaptation

So deal with:

- Sea level: 1.5m higher
- River Rhine: rain river
- Urban temperature: 3 to 4 degrees higher

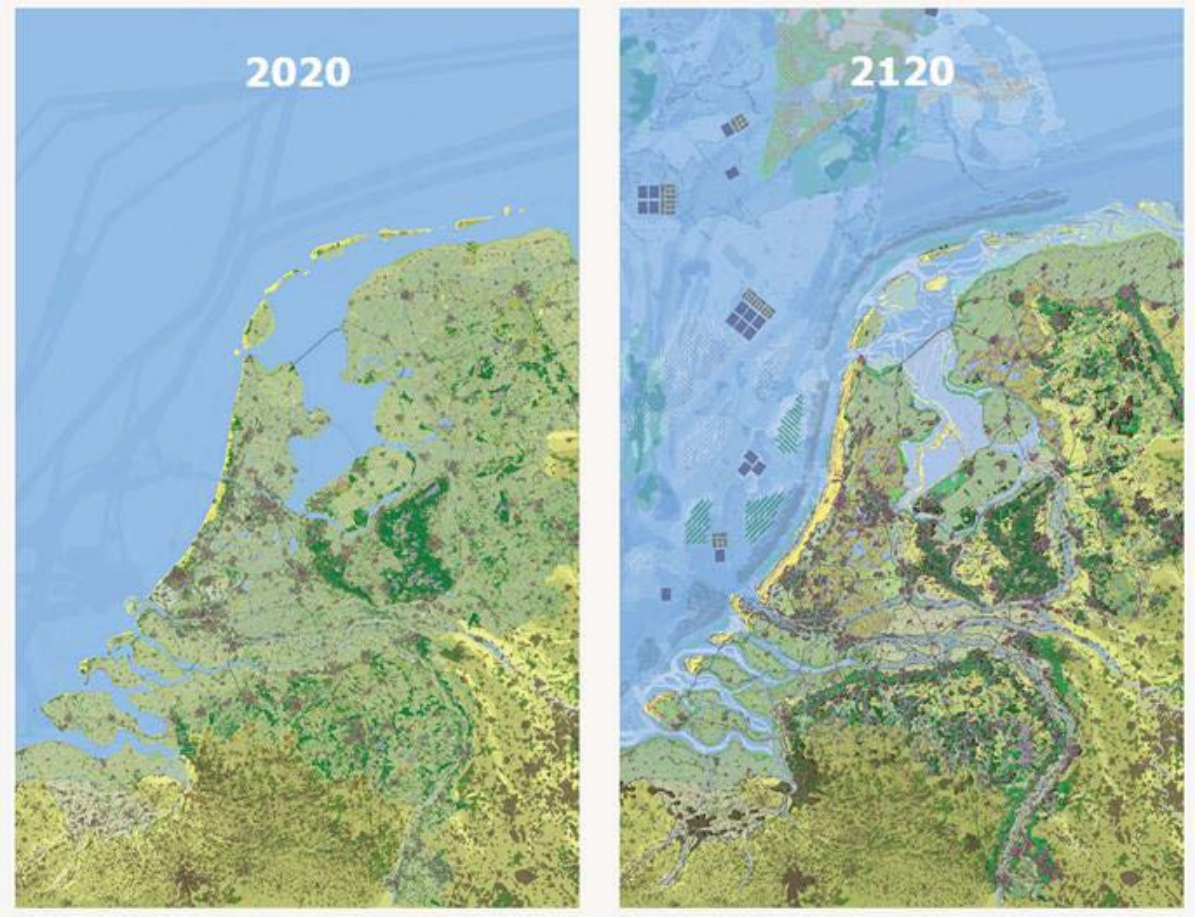



Overstromings-
gevaarzone
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5

# NL2120 scenario

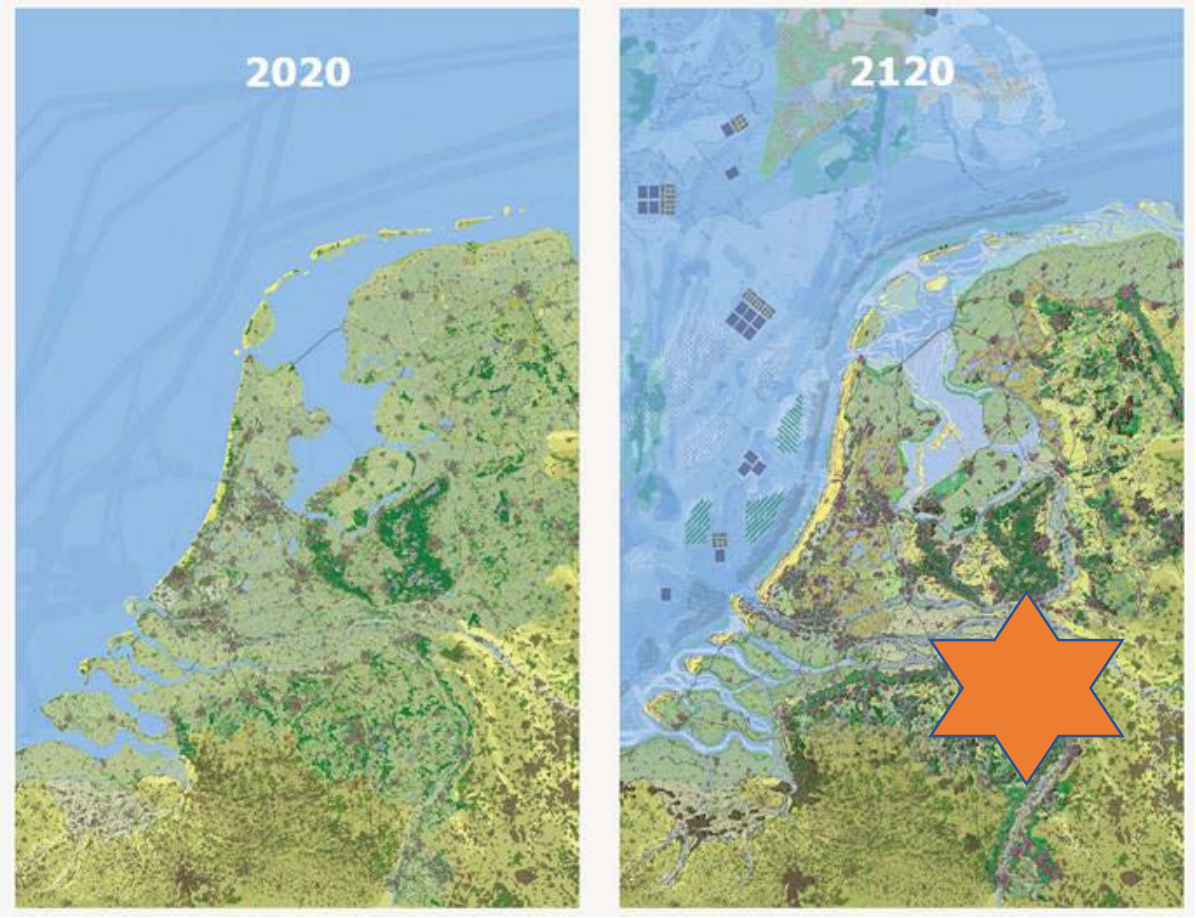
- Positive
- Adaptive
- Inspiring
- Realistic

- Principle: follow the existing natural system

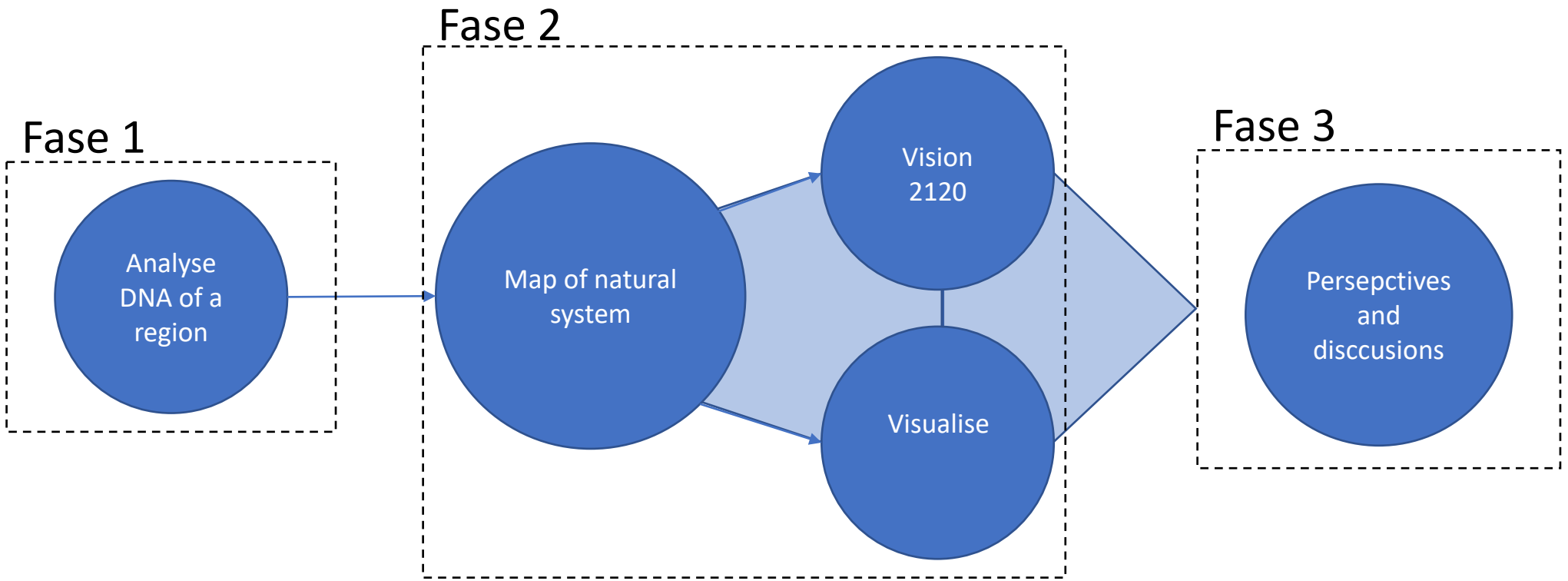


# NL2120 scenario: Arnhem

- Positive
- Adaptive
- Inspiring
- Realistic



# Approach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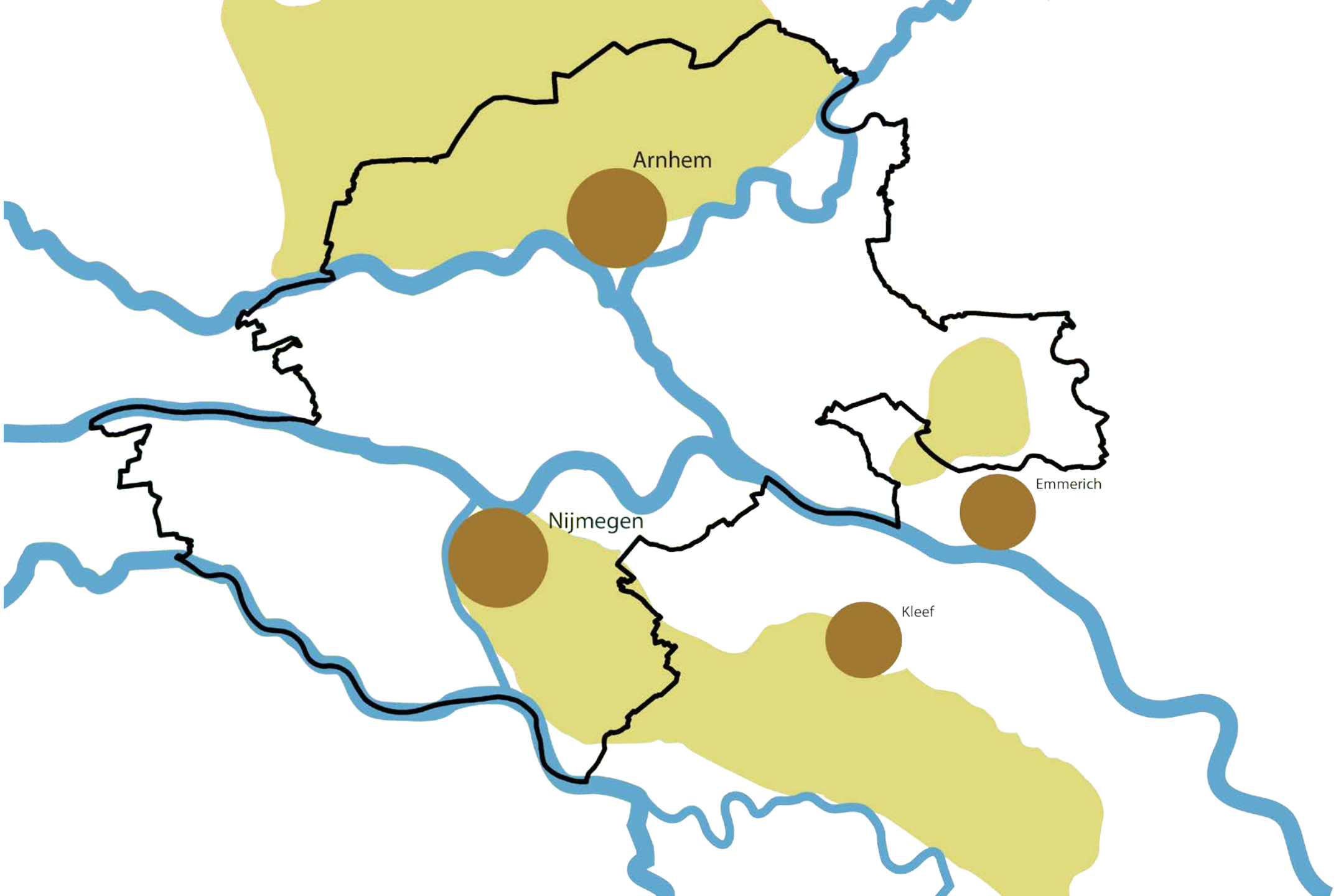
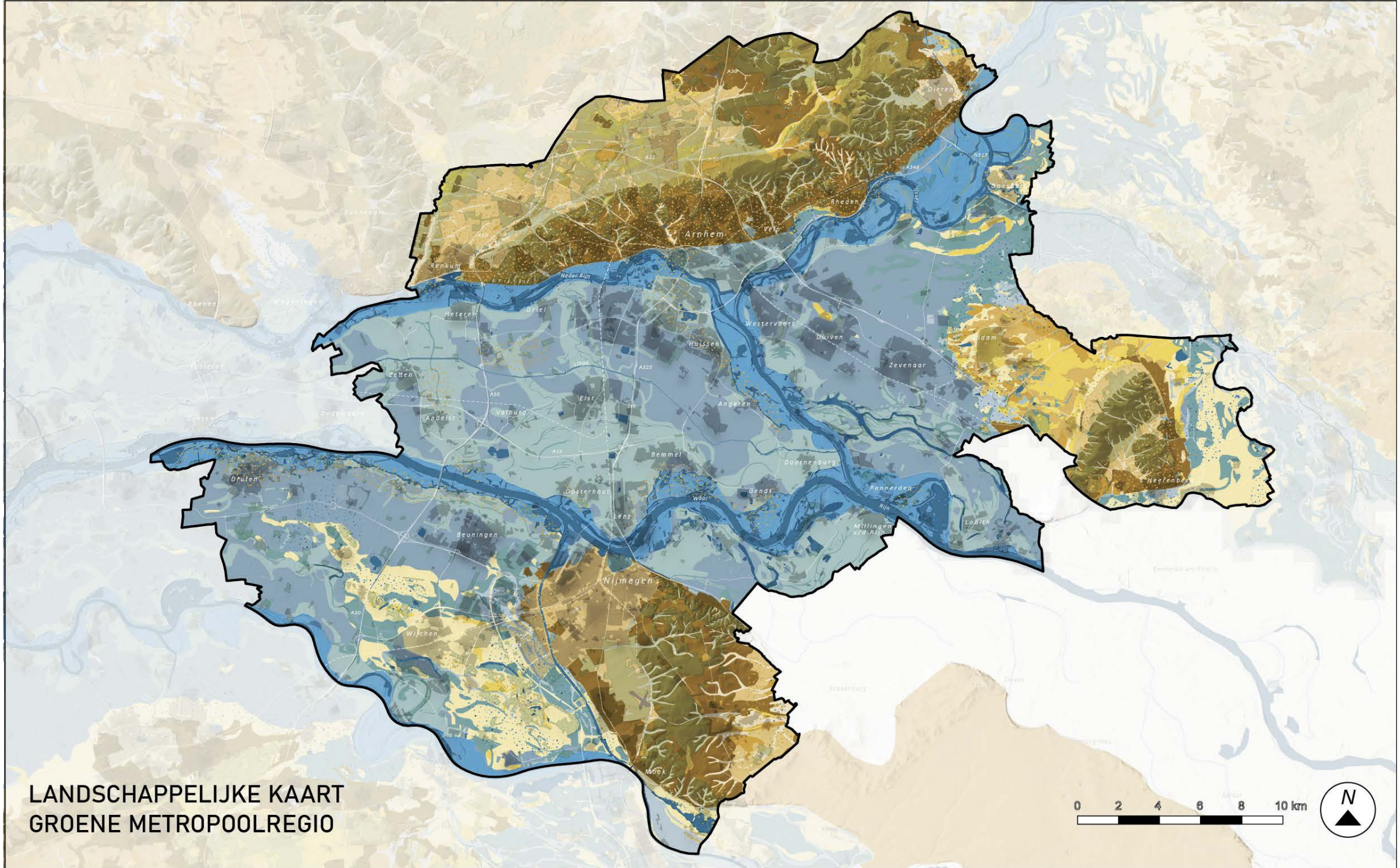
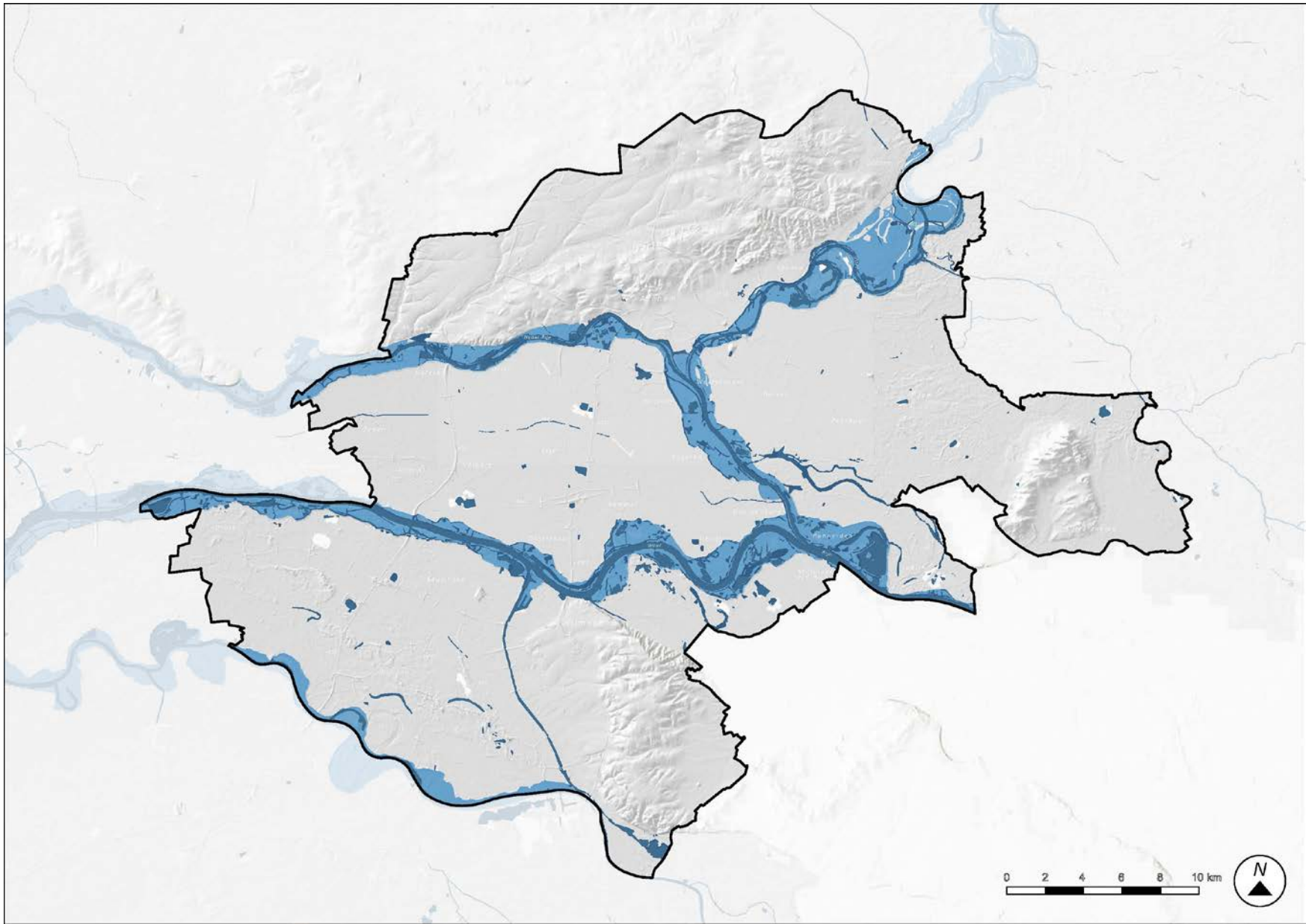

Arnhem
Nijmegen
Emmerich
Kleef

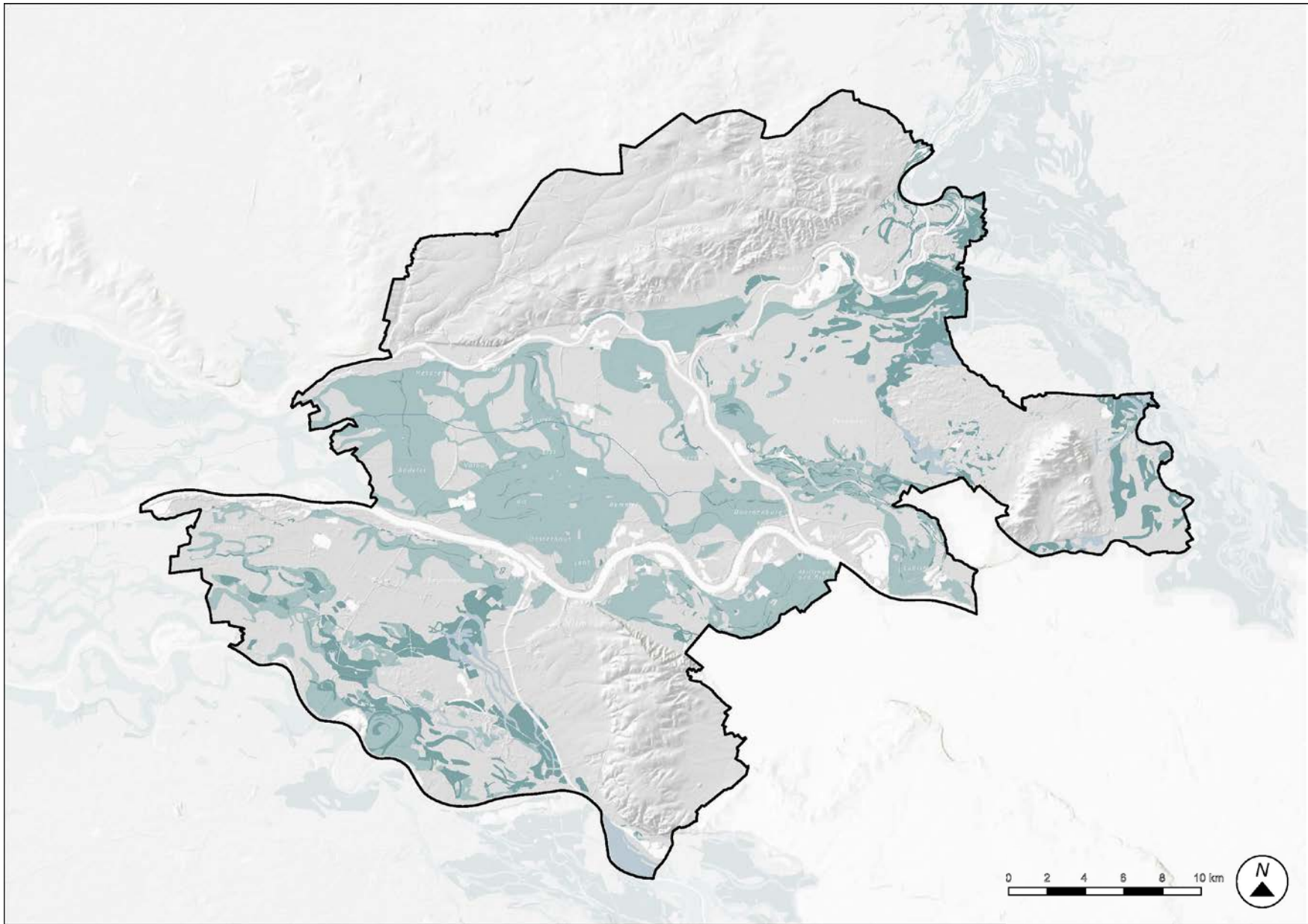


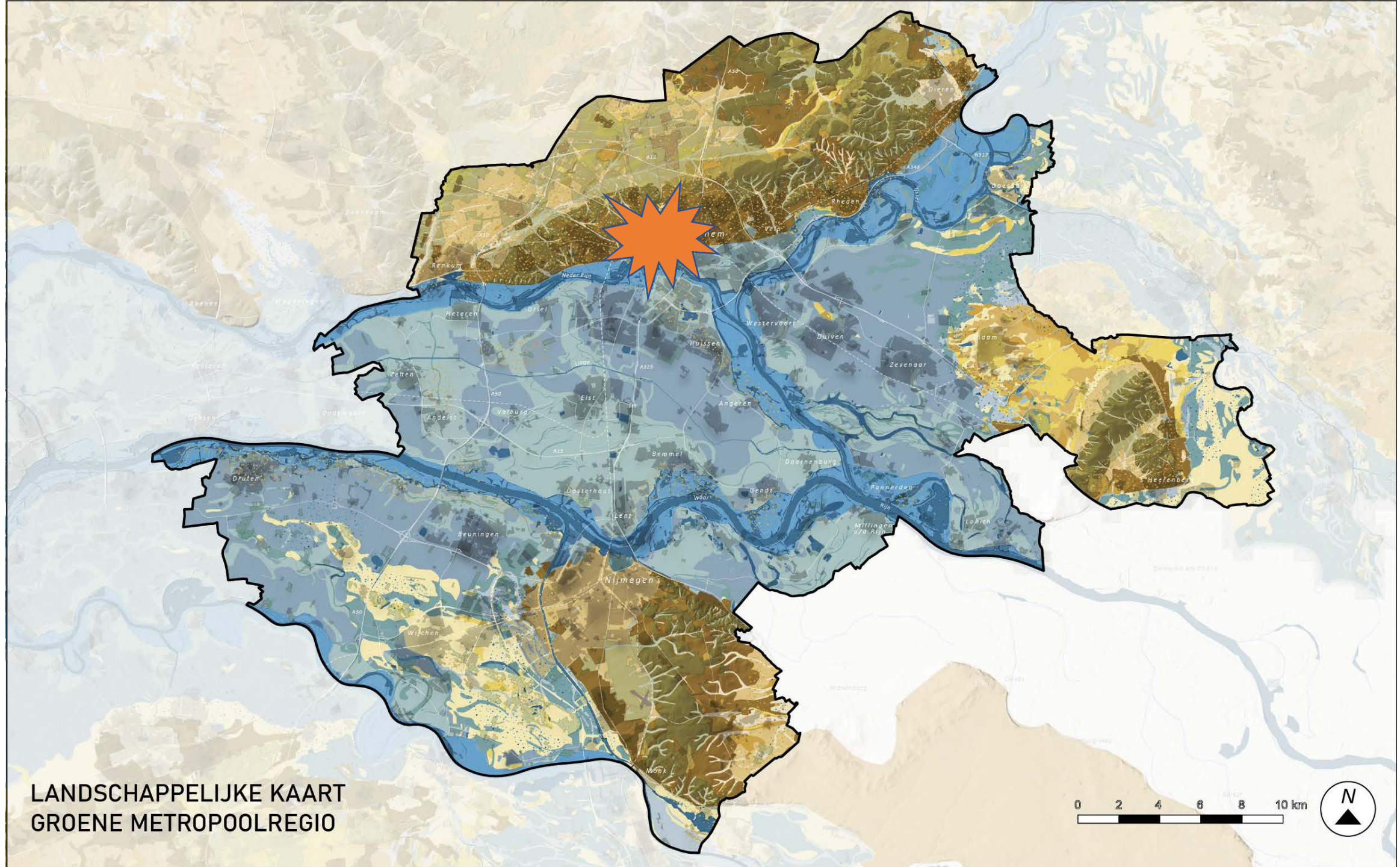

# LANDSCHAPPELIJKE KAART
# GROENE METROPOOLREGIO

# Select a future for the rivers

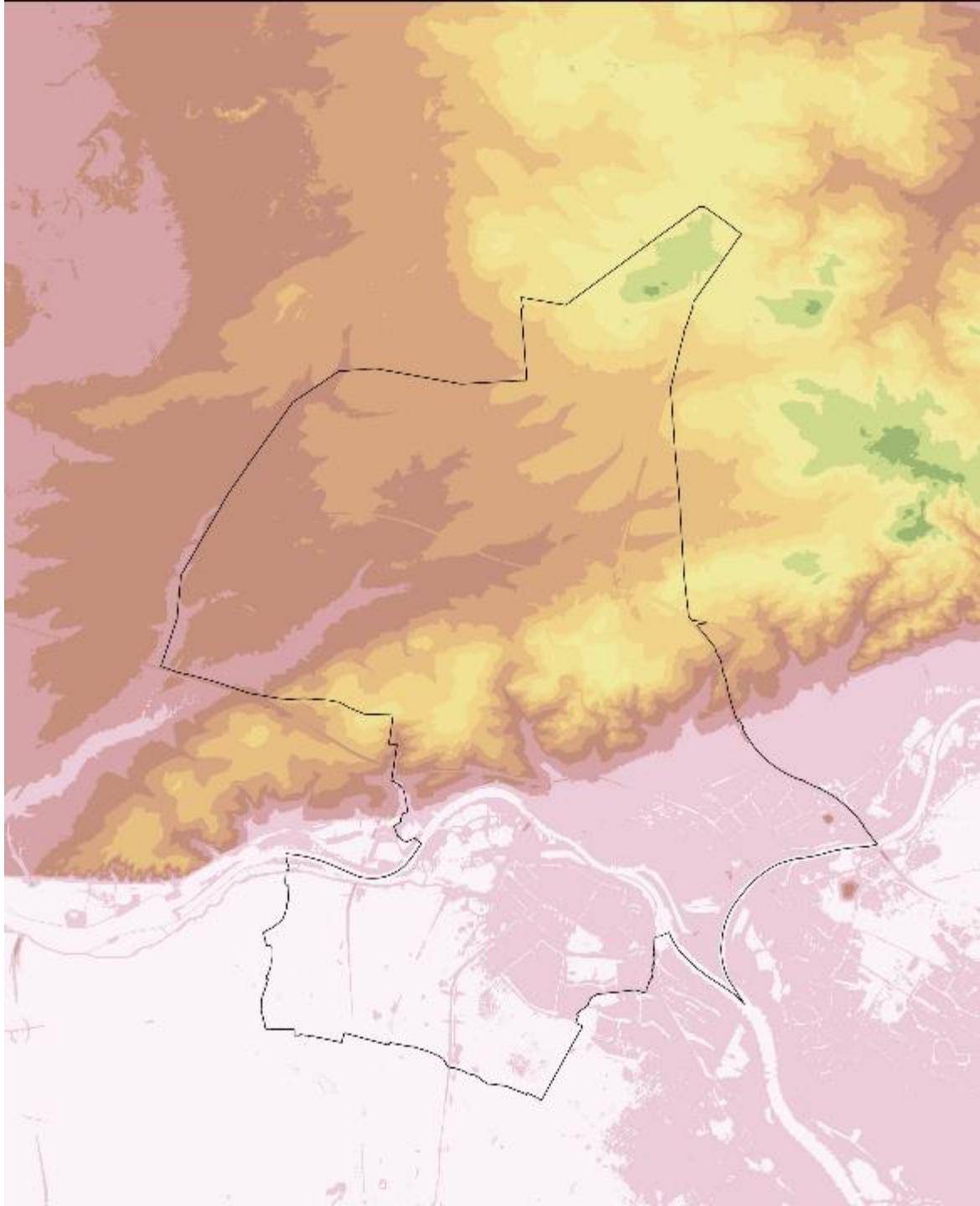


# Best agricultural soils

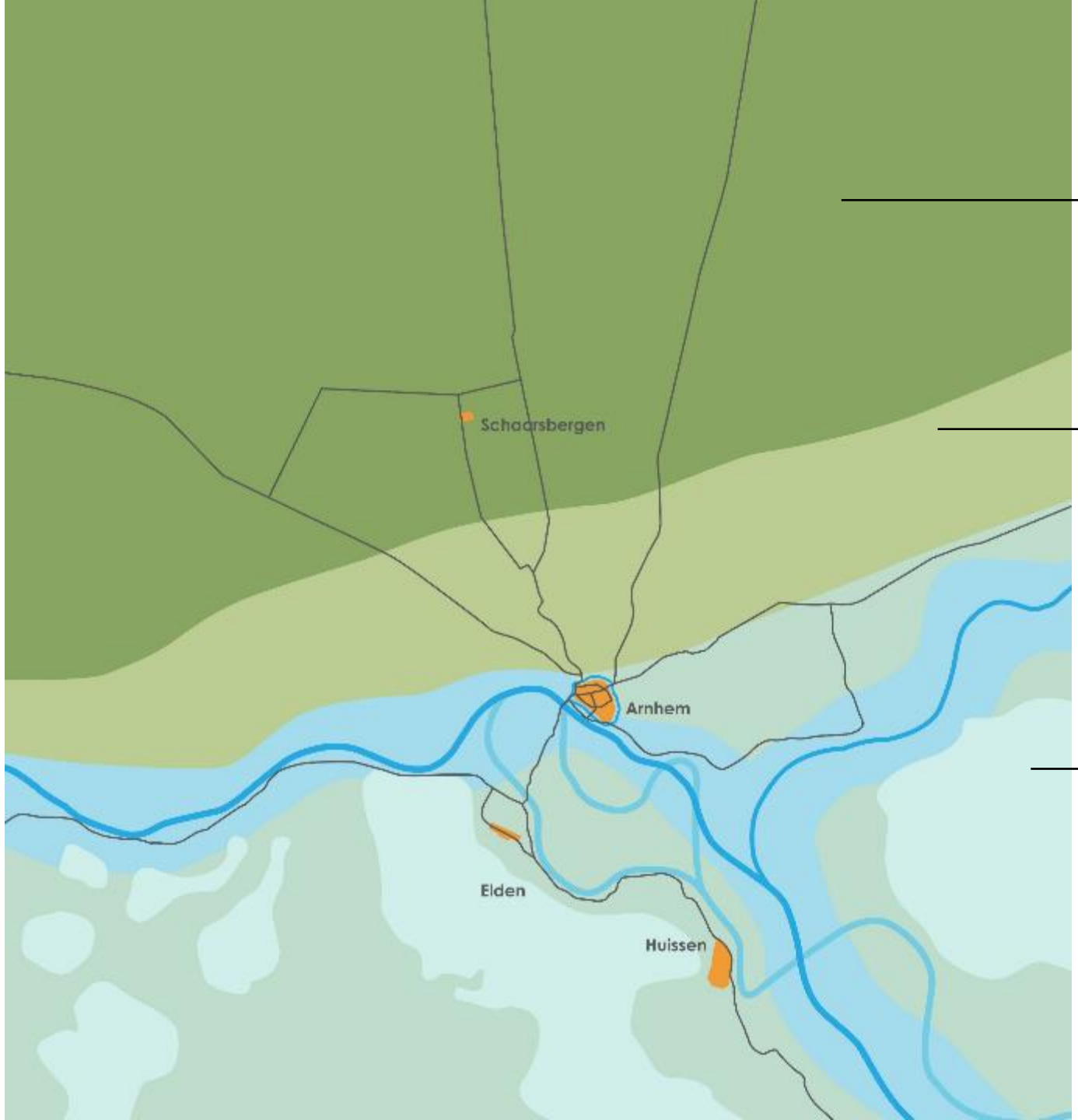



LANDSCHAPPELIJKE KAART
GROENE METROPOOLREGIO
0 2 4 6 8 10 km
N
Arnhem
Nijmegen
Renkum
Heteren
Oosterhout
Beuningen
Druten
Wijchen
Mook
Rheden
Duiven
Zevenaar
Westervoort
Huissen
Angeren
Bemmel
Lent
Zetten
Andelst
Valburg
Elst
Driel
Dieren
Doesburg
Didam
Heerenberg
Doornenburg
Pannerden
Millingen a/d Rijn
Lobith
Genat
Waal
Rijn
Neder-Rijn
IJssel

# Case study Arnhem



# Landschaps typen

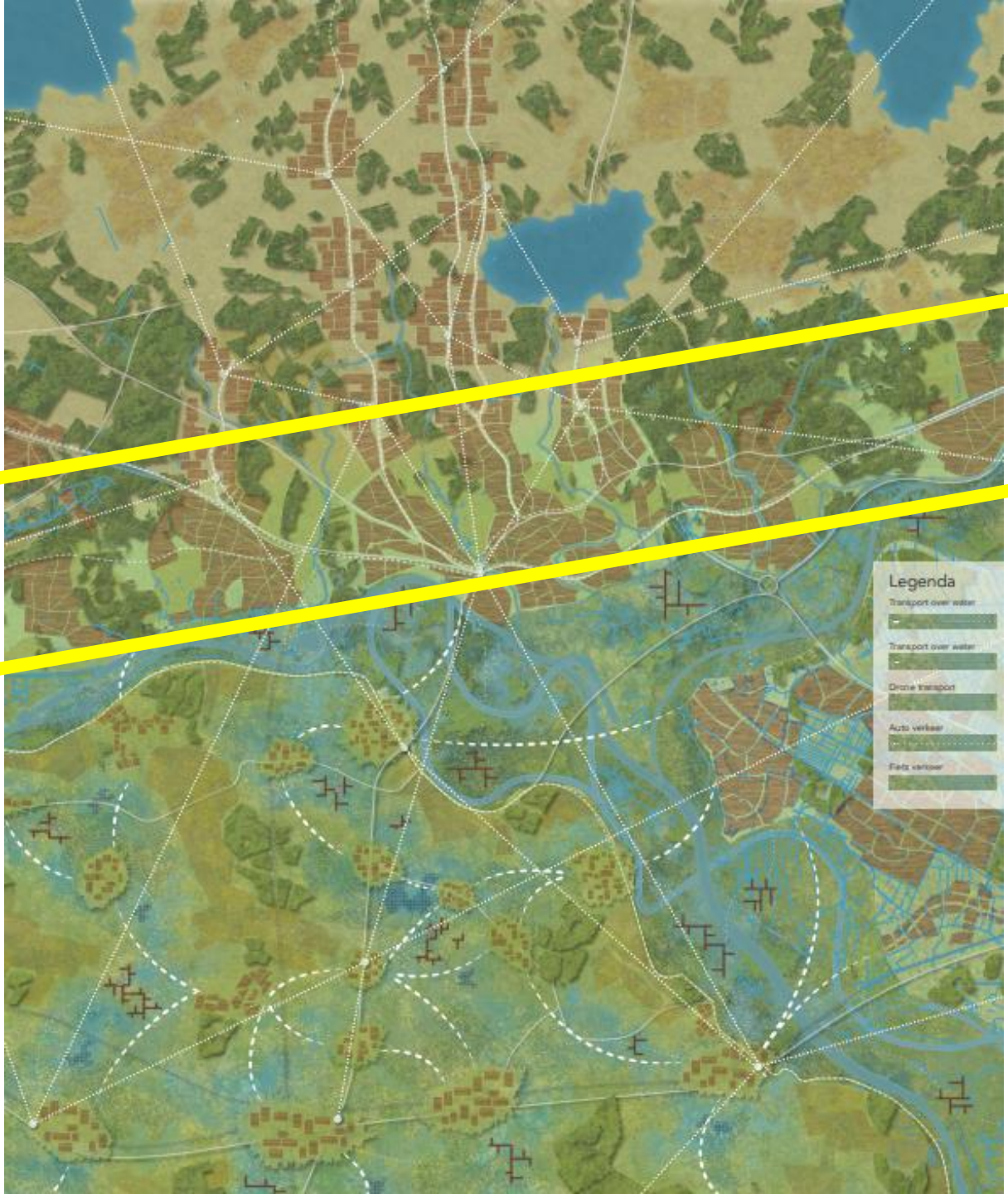



Veluwe plateau
Biodiversity
High and safe
Drinking water

Veluwe flank
Cultural heritage
High and safe

Rivier
Floodrisk
Biodiversity, river
Transport?

# Visie Arnhem 2120




Veluwe plateau,
push moraine

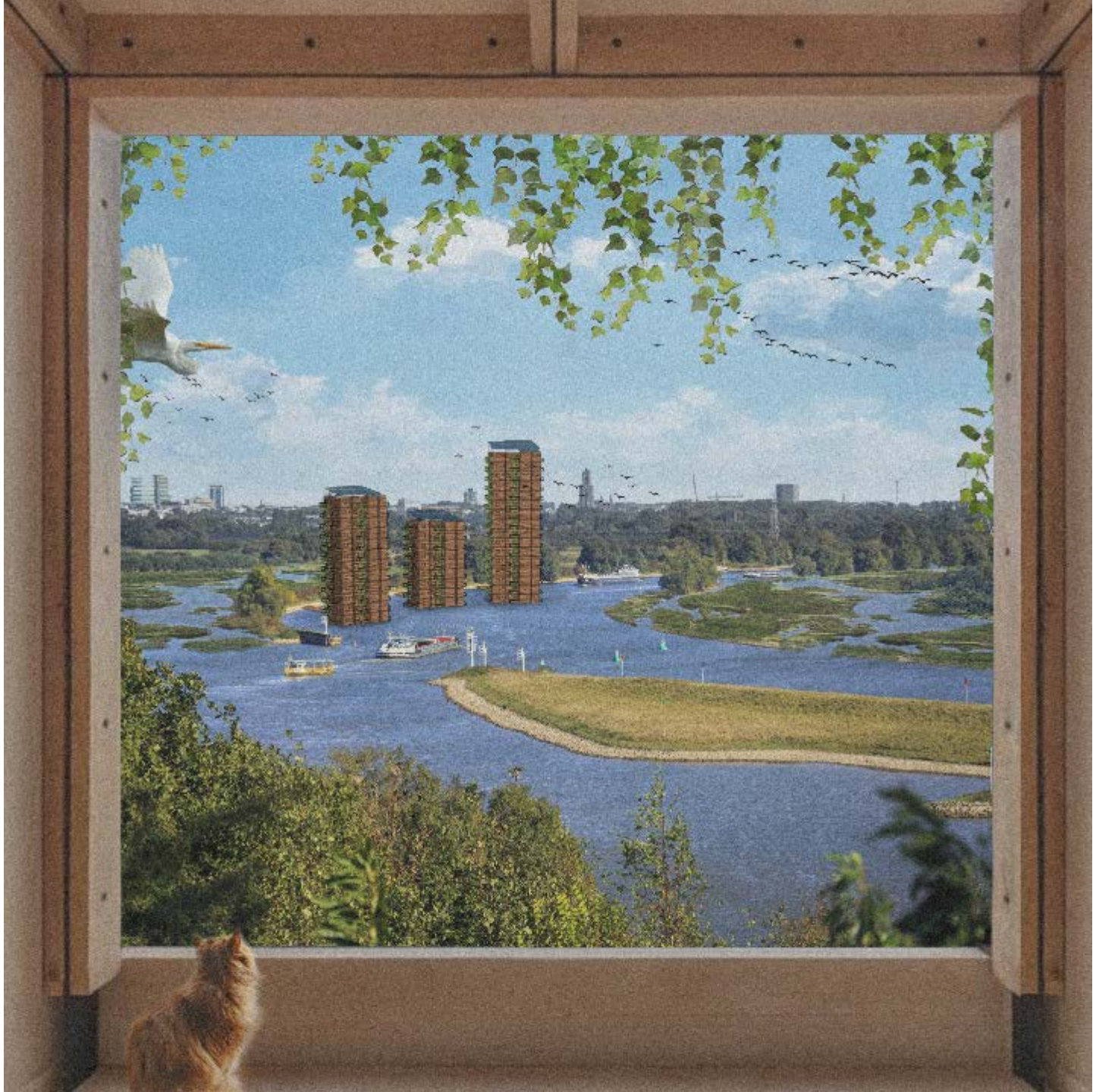
Veluwe fringe

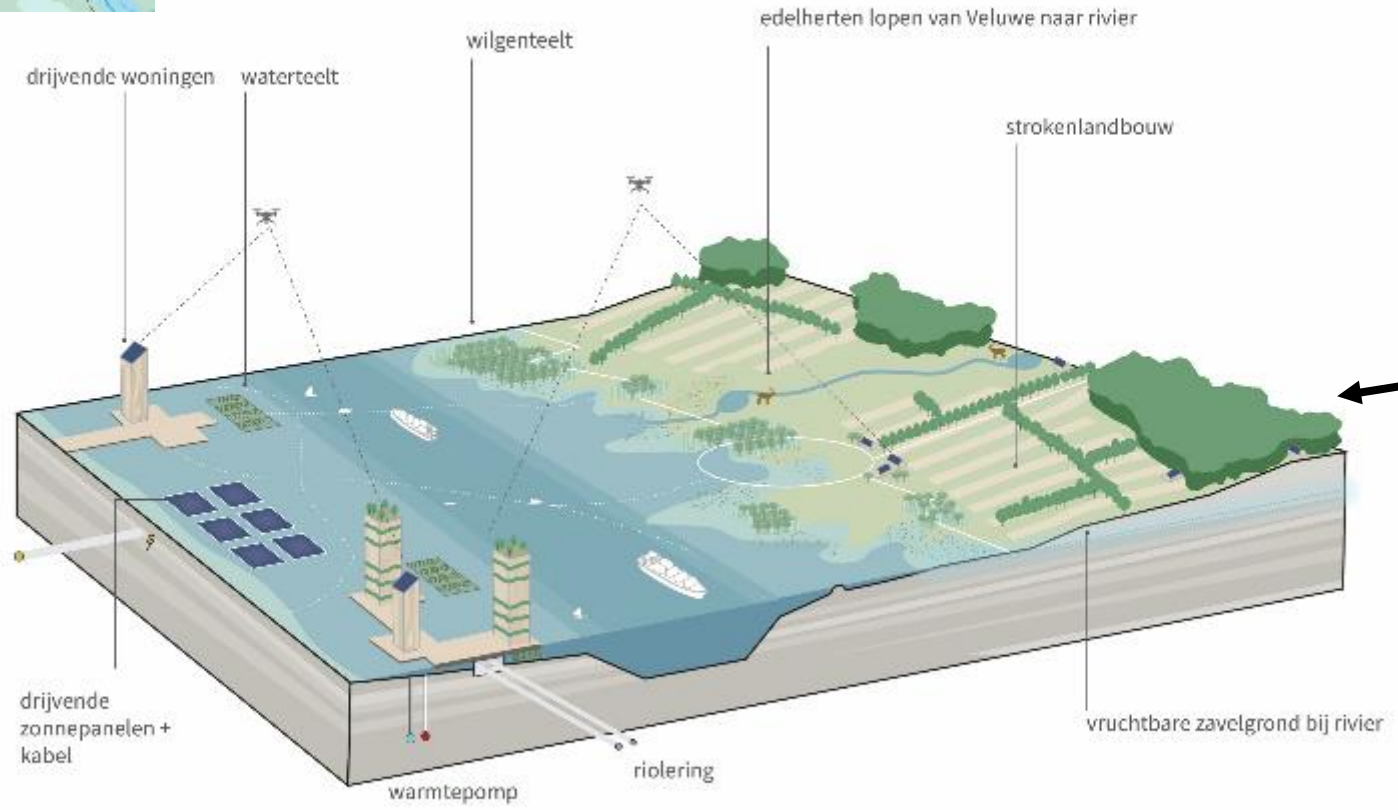
River area


Plateau

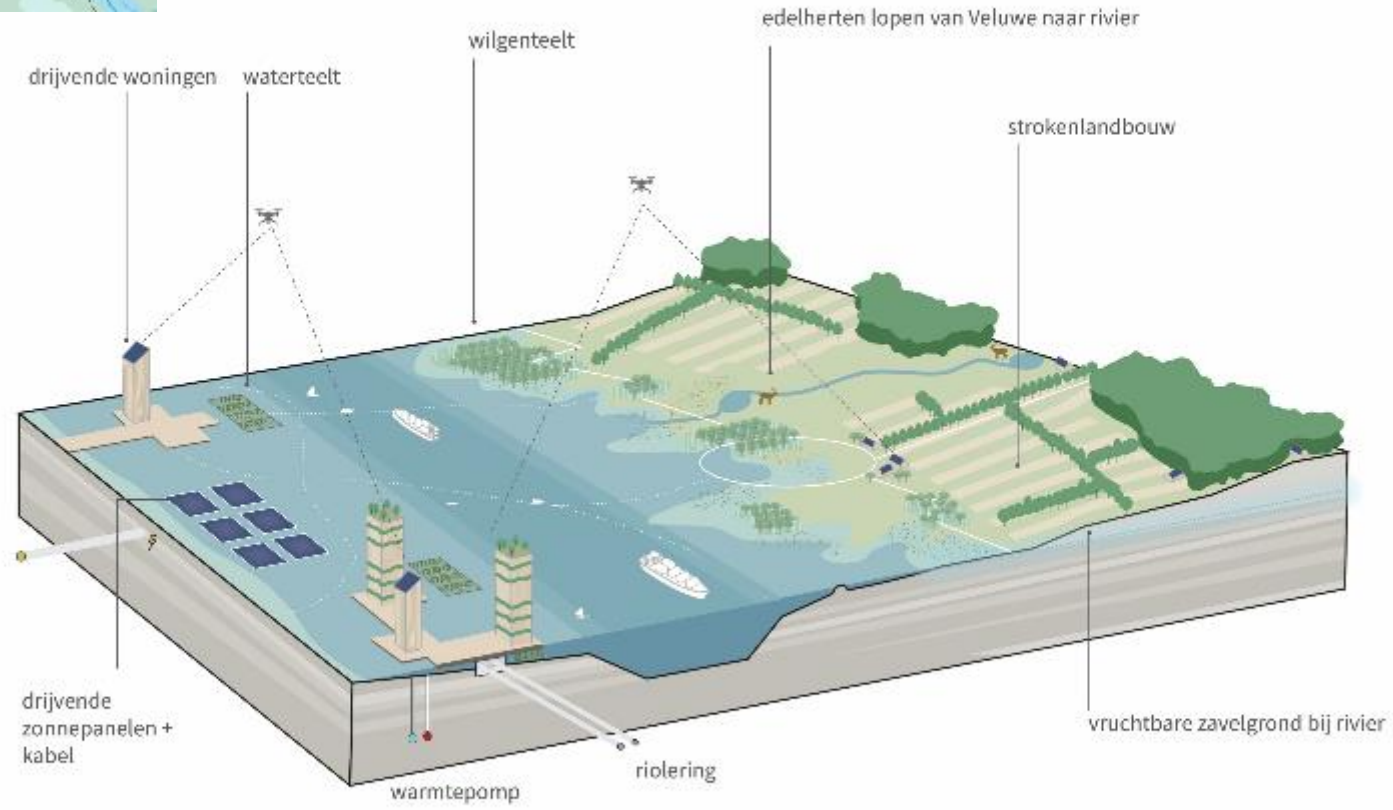

Fringe

# Rivierengebied




drijvende woningen
waterteelt
wilgenteelt
edelherten lopen van Veluwe naar rivier
strokenlandbouw
drijvende zonnepanelen + kabel
warmtepomp
riolering
vruchtbare zavelgrond bij rivier


Legenda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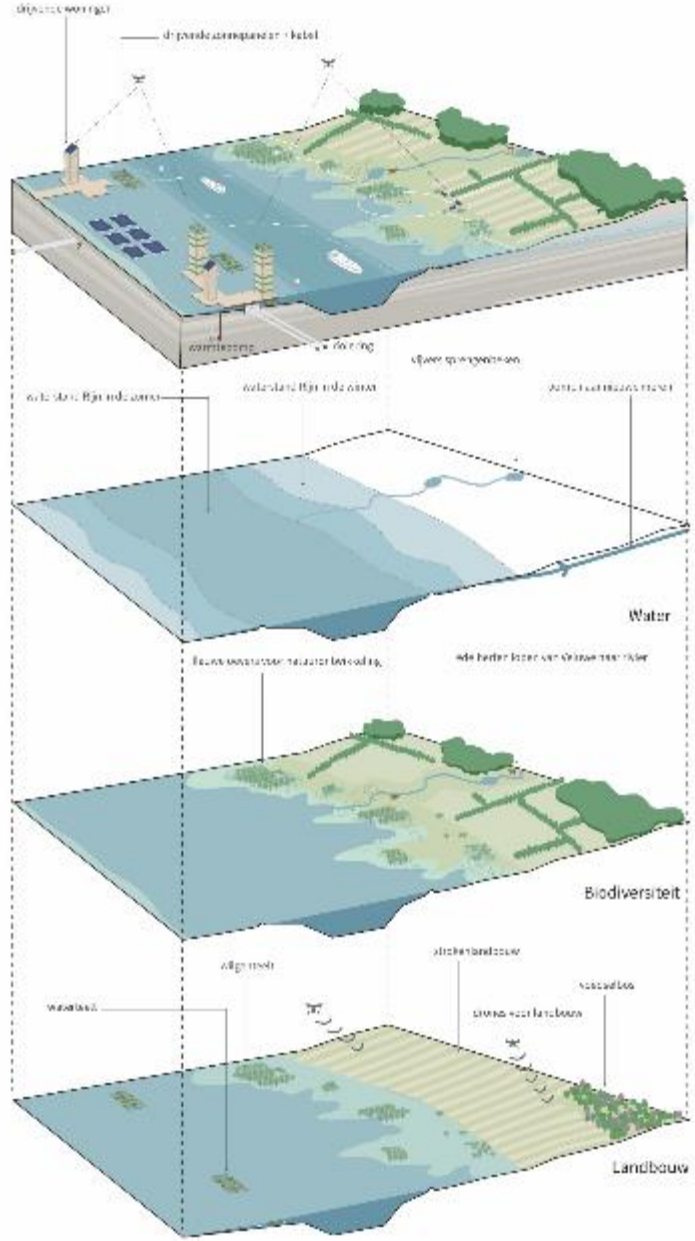
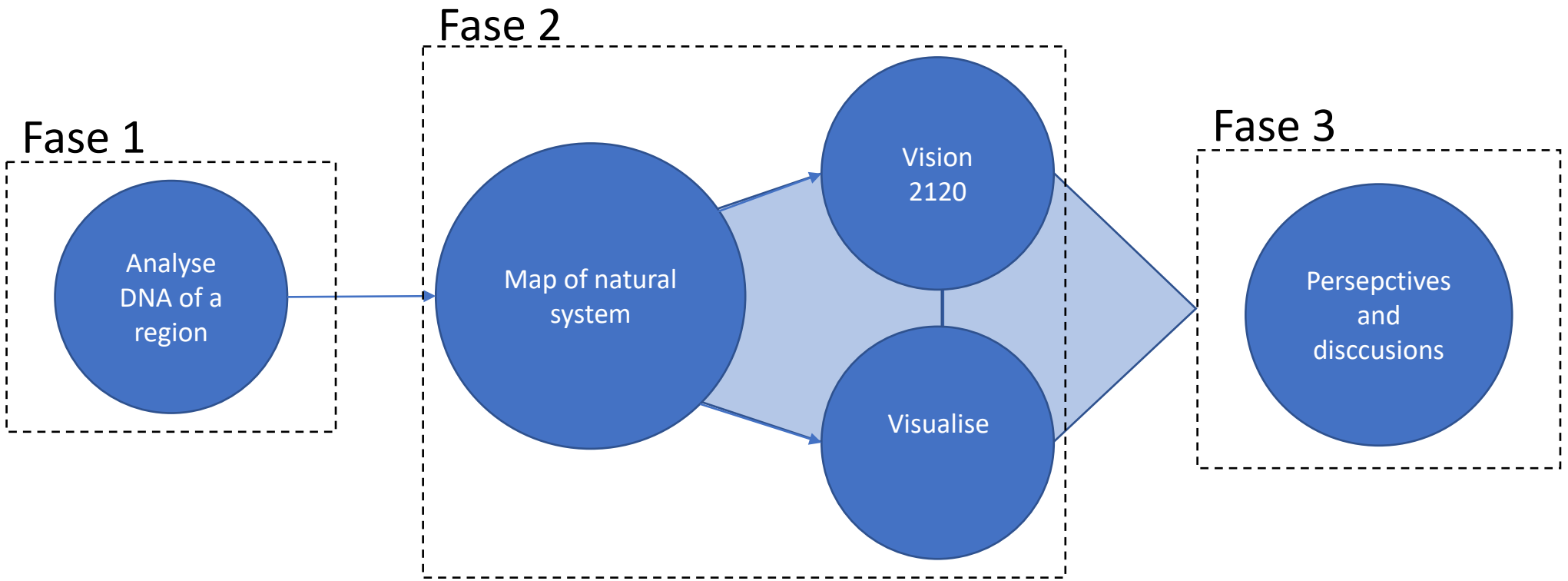

Water
Biodiversiteit
Landbouw

# Arnhem 2120

1. National level: Redirect urban planning to the East
2. Roads narrowed, greene, self dtiving cars, drone transport.
3. Routes for cool air from the forest
4. One river and river metropole Arnhem Nijmegen
6. Nature 2100: combining dela nature with Veluwe

# Approach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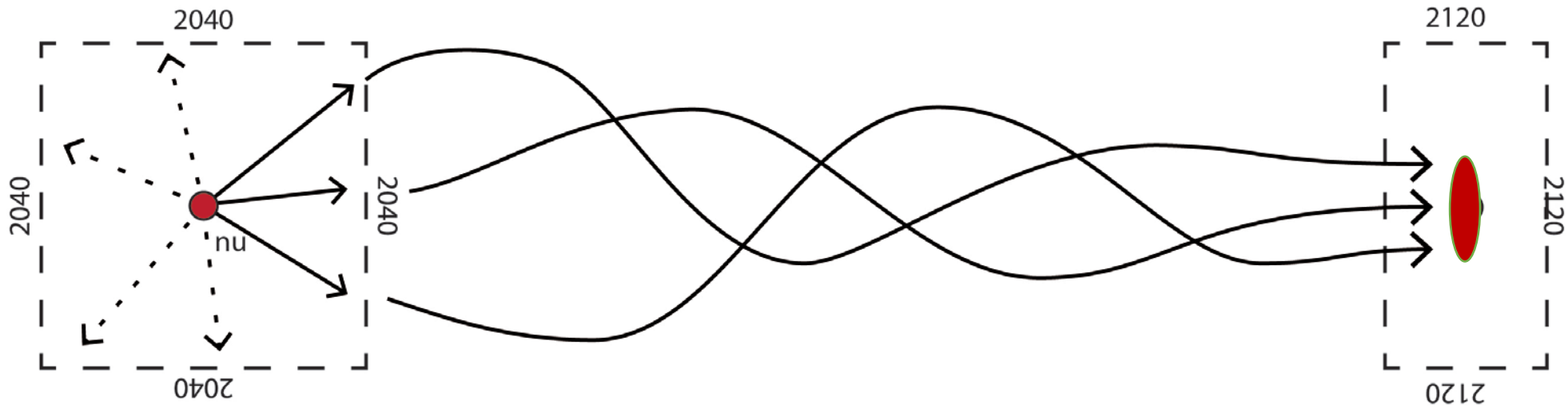
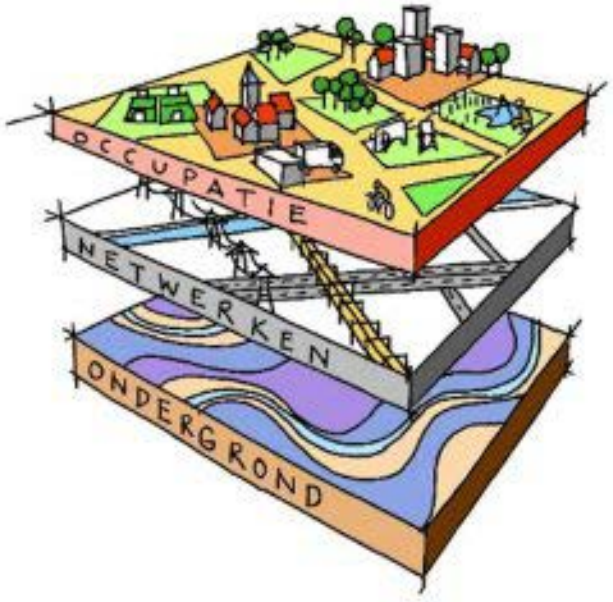
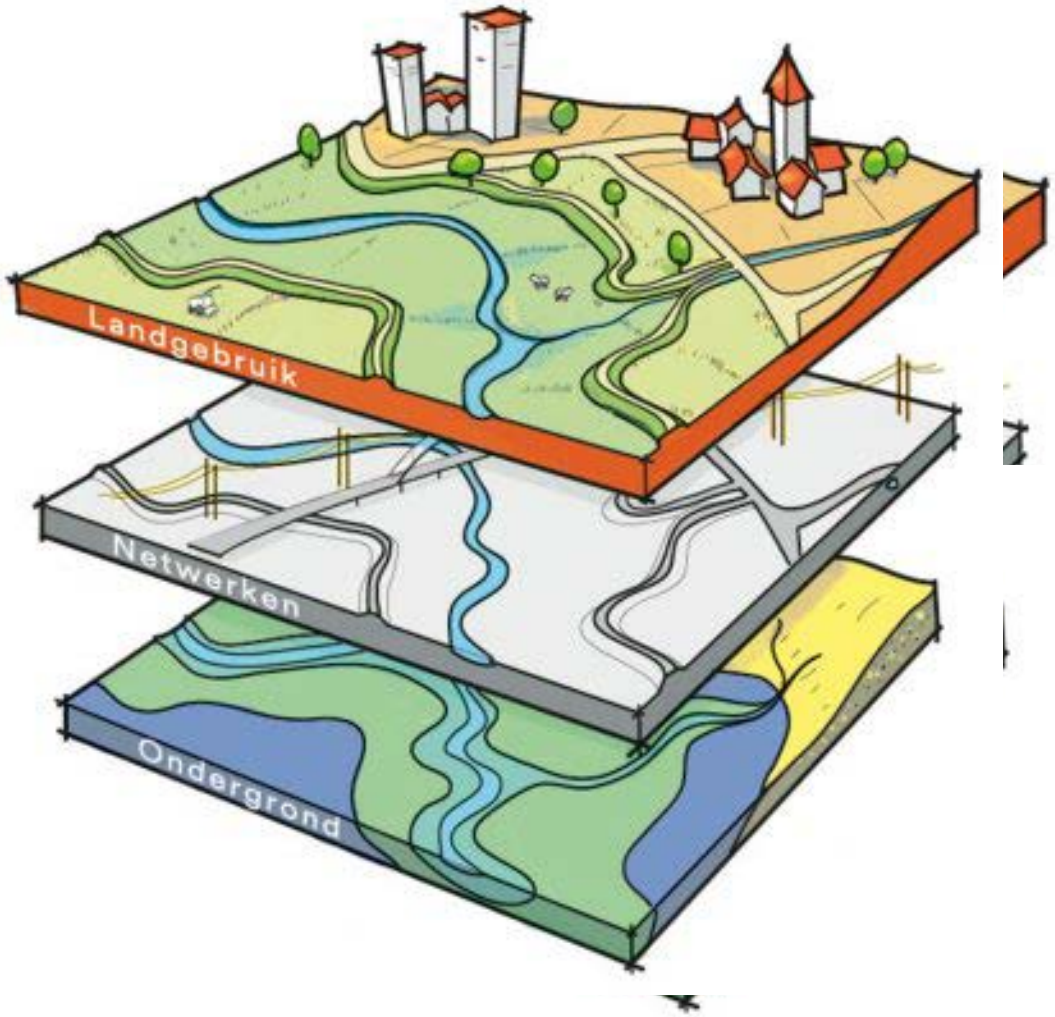
# Conclusion 1: design a long term vision for discussion




- Ver vooruitblikken is nodig én biedt kansen:
  - ontstijging huidige dossiers/problematiek
  - voedingsbodem voor planvorming nu

# Conclusion 2: Re-install the natural system

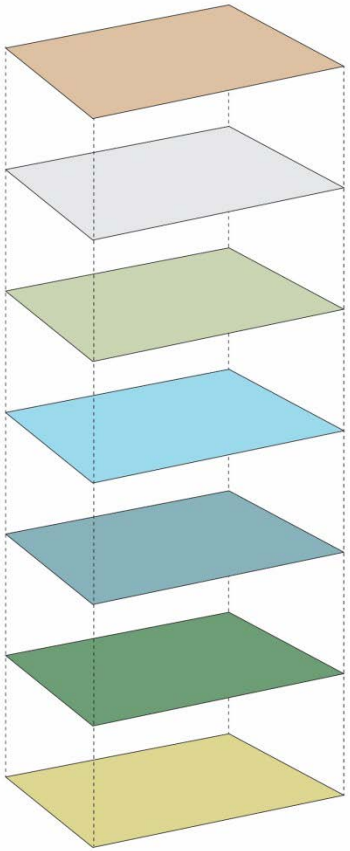





Deltares, BoschSlabbers & Sweco, 2021.

# What to plan first?



housing

Mobility

Energy

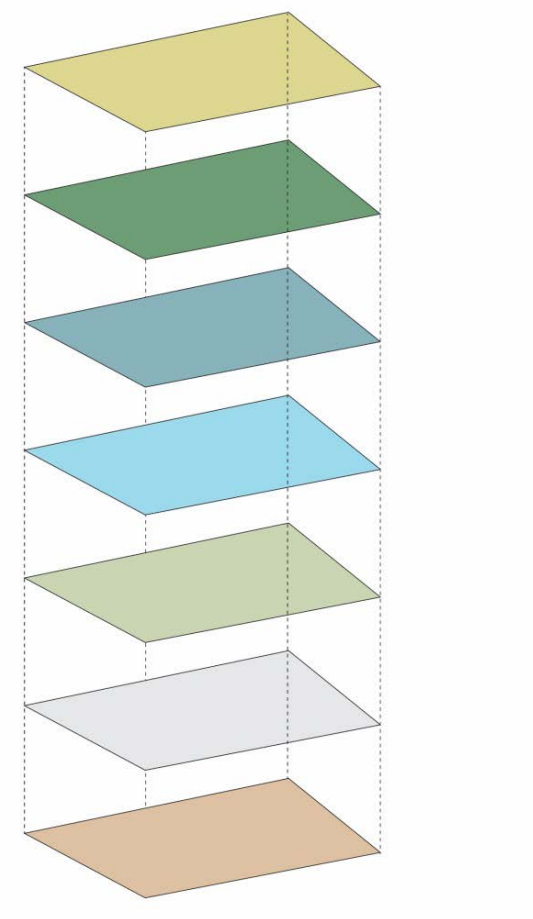
Agriculture

River regime

Biodiversity

(sub) soil

# What to plan first? The natural system!



(sub) soil

biodiversity

River regime

Agriculture

energy

mobility

Housing, working

# Conclusion 3: actively involve politicians


If you know that:

- The housing areas that you build now are still there in 100 years
- Sea level will be 1.5m higher
- Rivers will be sometimes dry and sometimes over-full and gorgious
- City temperature will be degrees higher

**Do you think that you do enough now if you supply every new house wiyh a solar panel, an extra tree and a rain barrel?**

# Galicia

- National level: Redirect urban development to Galicia
  - Use existing highway structure for economic and housing redevelopment. Avoid valleys and coastal deltas
  - Restore 10.000 abandoned villages: 300  inhabitants as an average

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- Make cities greener
- Natura 2100.
  - Restore robust nature connecting coastal-, river- and mountains.
  - Include ecosystem services in planning (abandoned villages)

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- Relax: in 2120 Godello can be provided to you by The Netherlands


Dare to start to
think about the
future!