Planbureau voor de Leefomgeving

Urbanization and land-use development in Europe

ESPON peer-learning workshop 20 May 2021

David Evers

ESPON SUPER terminology

- **Sustainable** (temporal balance and thematic balance)
- **Urbanization** and land use (measurement and explanation of phenomenon)
- **Practices** (land-use decision-making, effectiveness of planning)
- in **European Regions** (territory matters, regional approach)

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Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

PBL Netherlands Environmental Assessment Agency

Bundesinstitut für Bau-, Stadt- und Raumforschung

im Bundesamt für Bauwesen und Raumordnung

POLITECNICO DI TORINO

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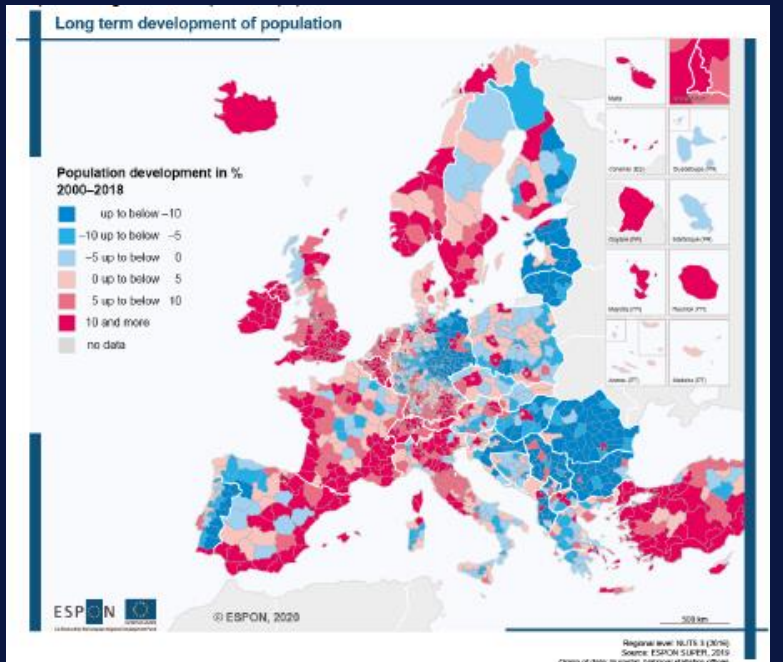
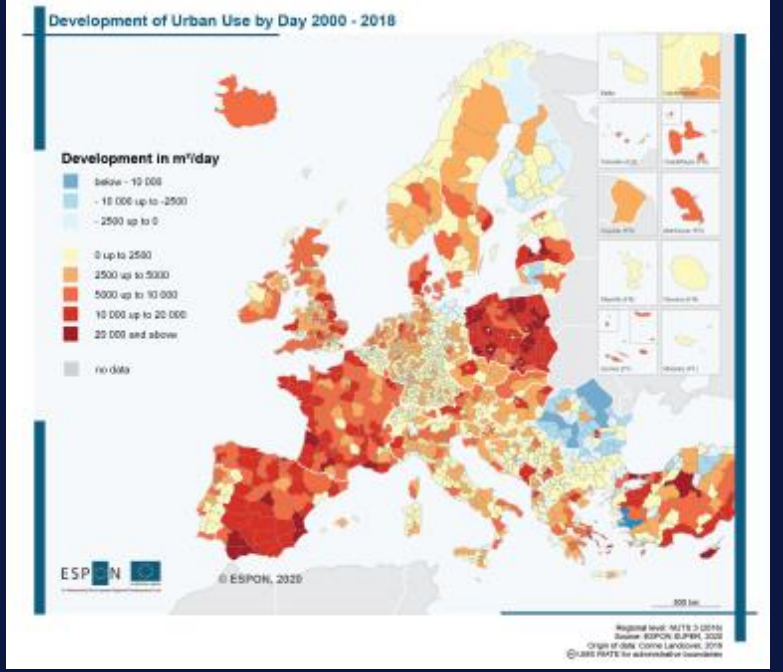
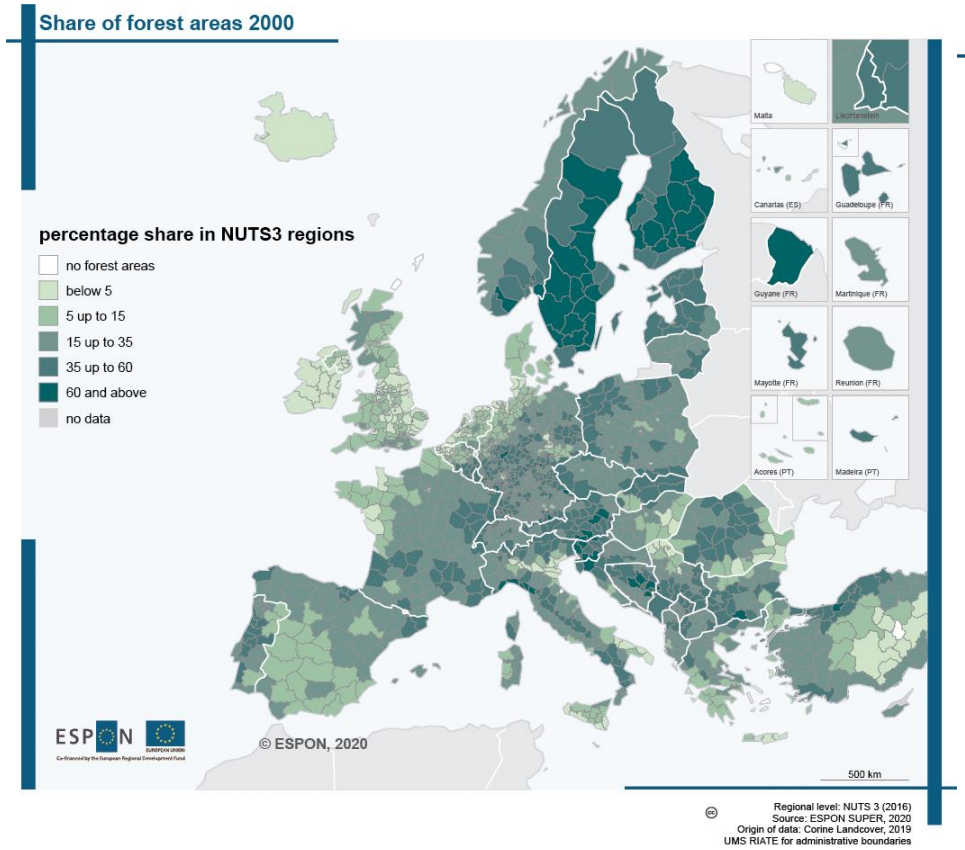
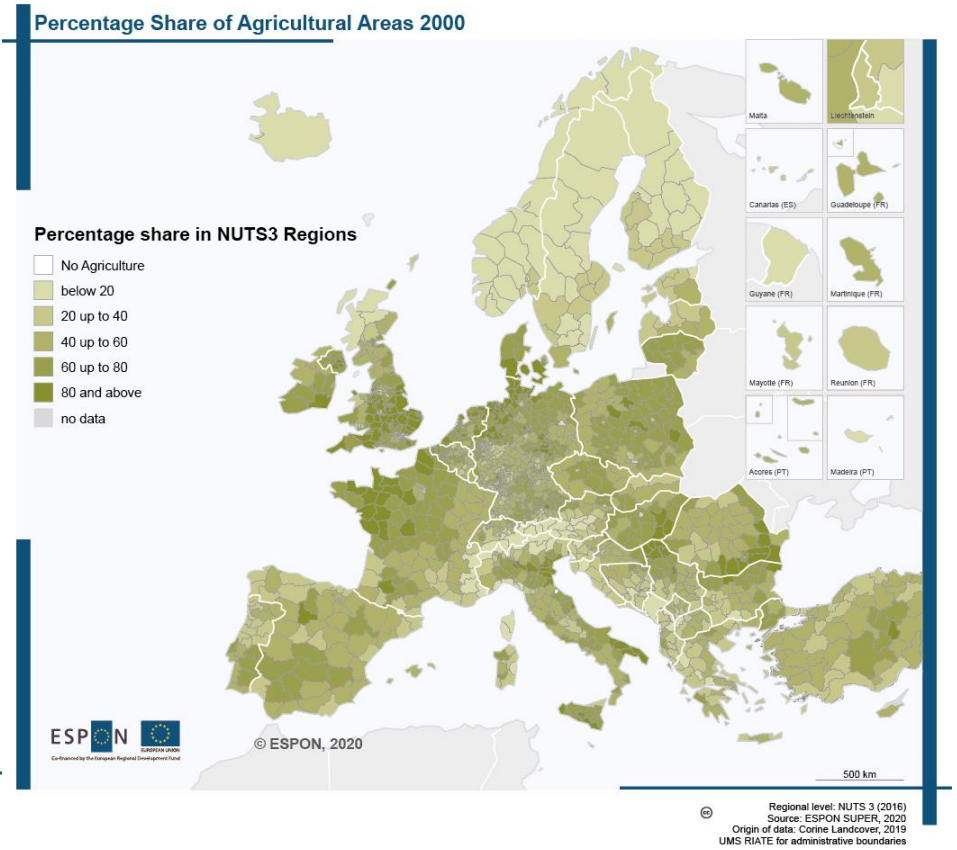
Evidence on urbanization and land-use developments in Europe





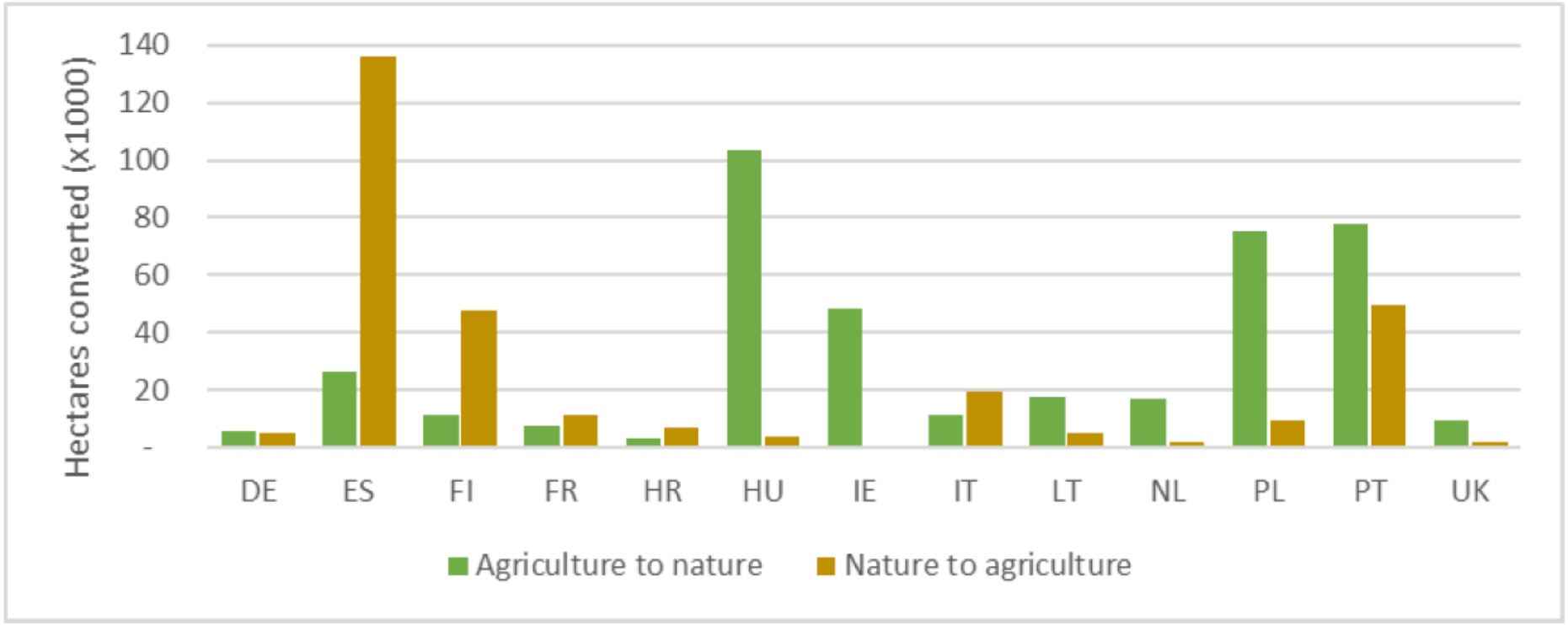
Natural and agricultural development





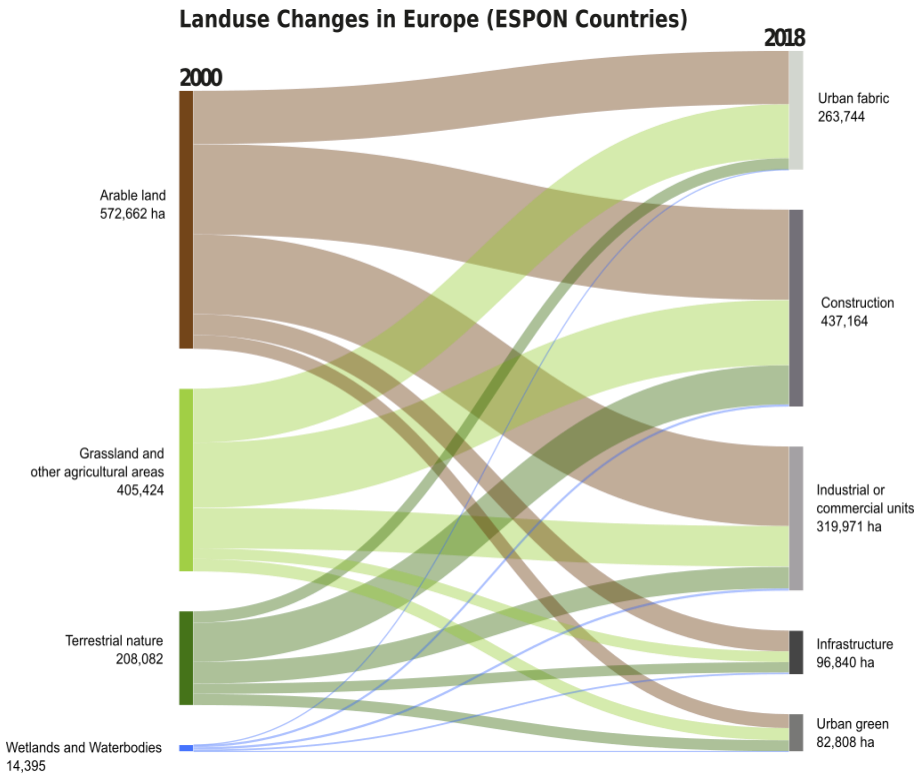
Natural and agricultural development

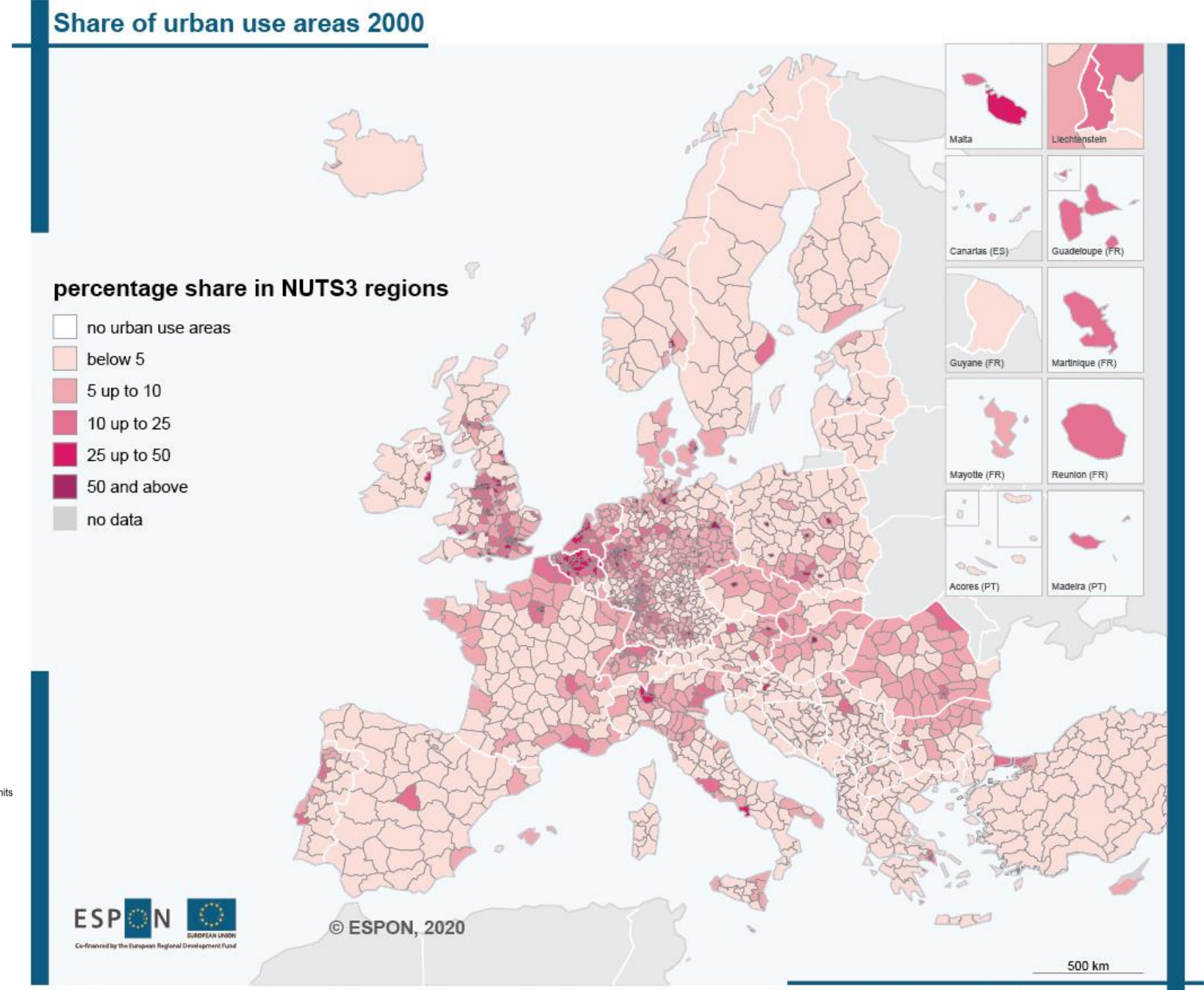
Figure 3.2: Conversion of agriculture to nature and nature to agriculture per country in the period 2000-2018 (for countries with a total conversion of more than 10.000 ha)



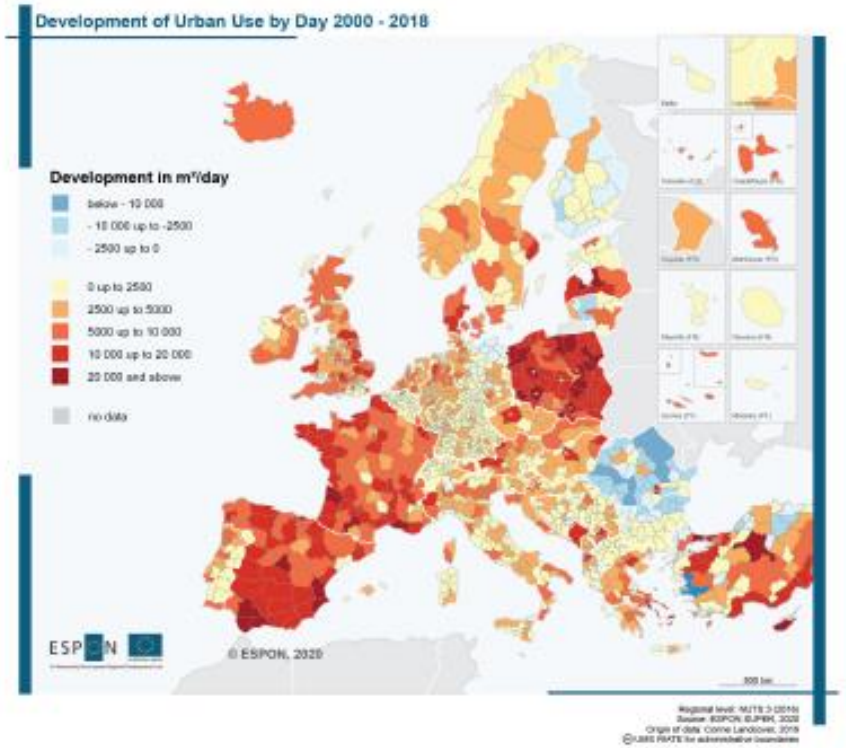
Between 2000-2018, about 1.17 million hectares of land was converted into urban use.

This is approximately 250 football fields per day (>0)

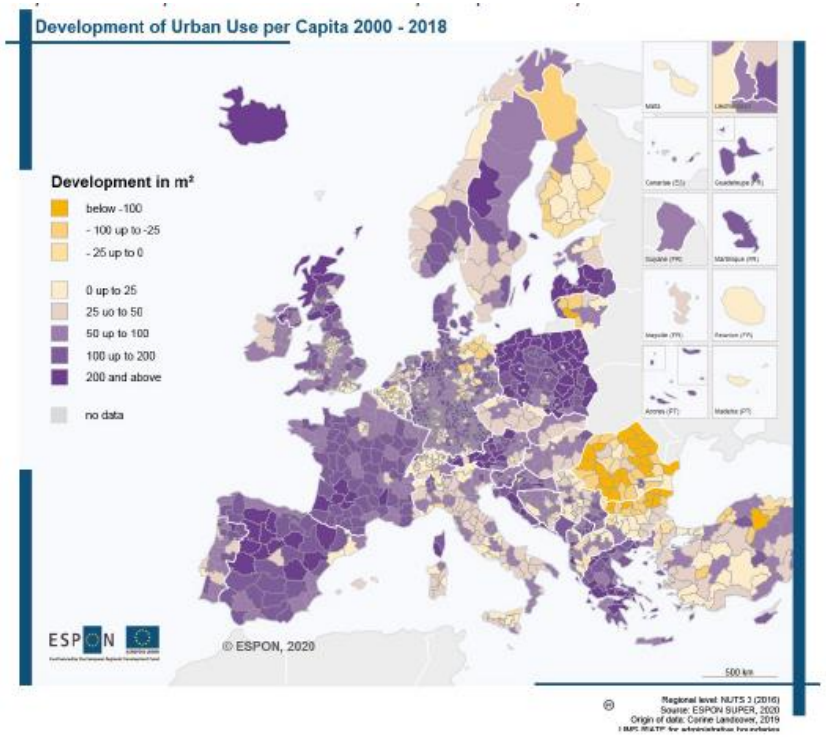




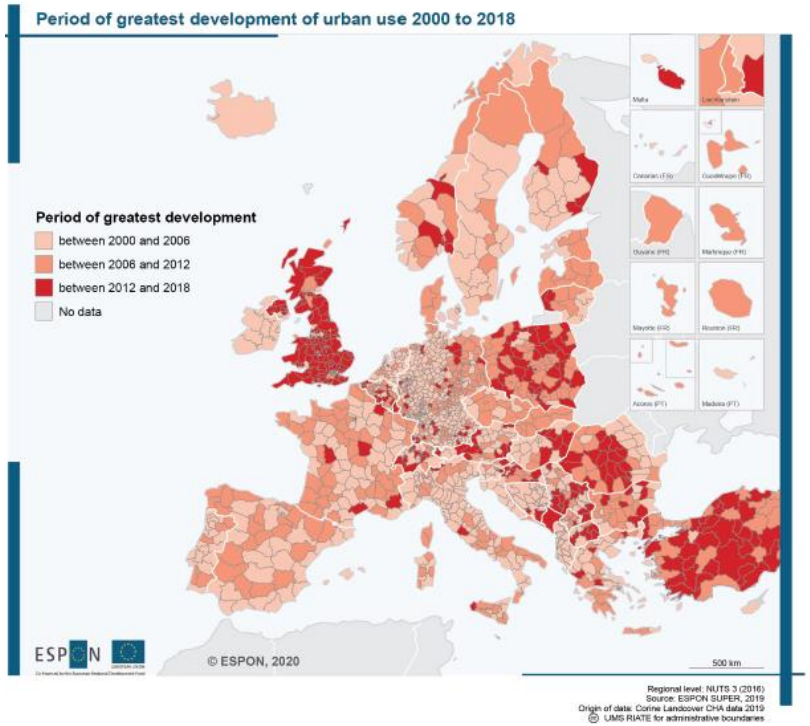
Is this sustainable?



Absolute ha/day

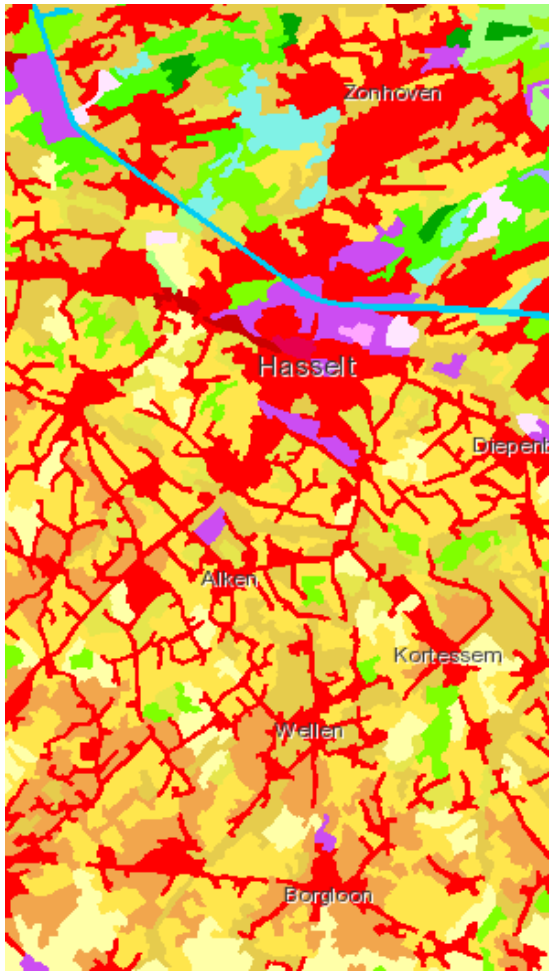


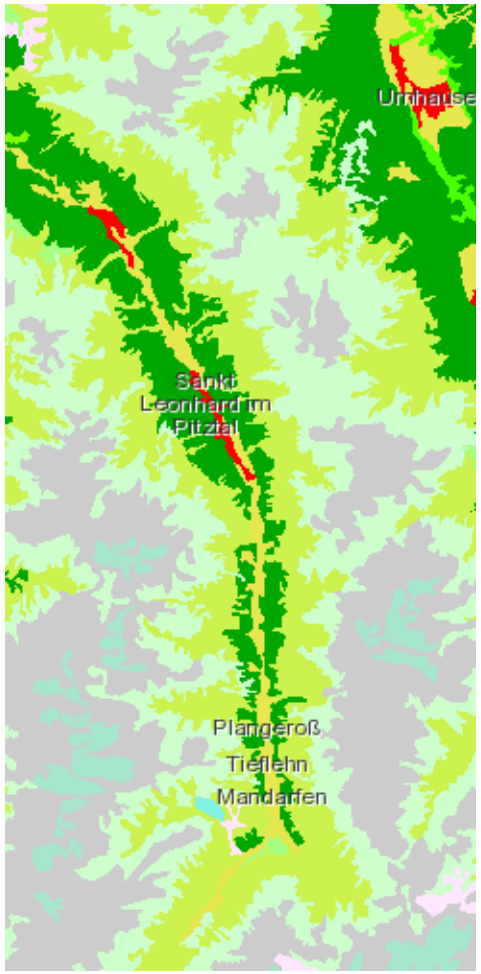
Development ha/capita

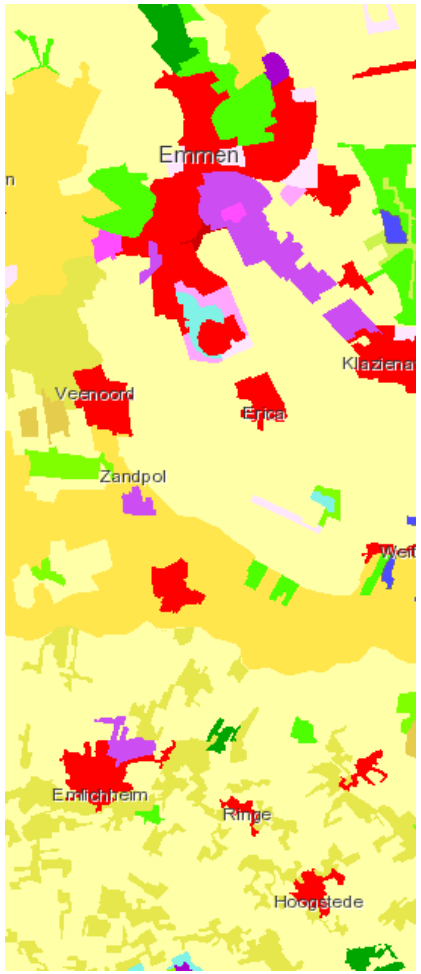


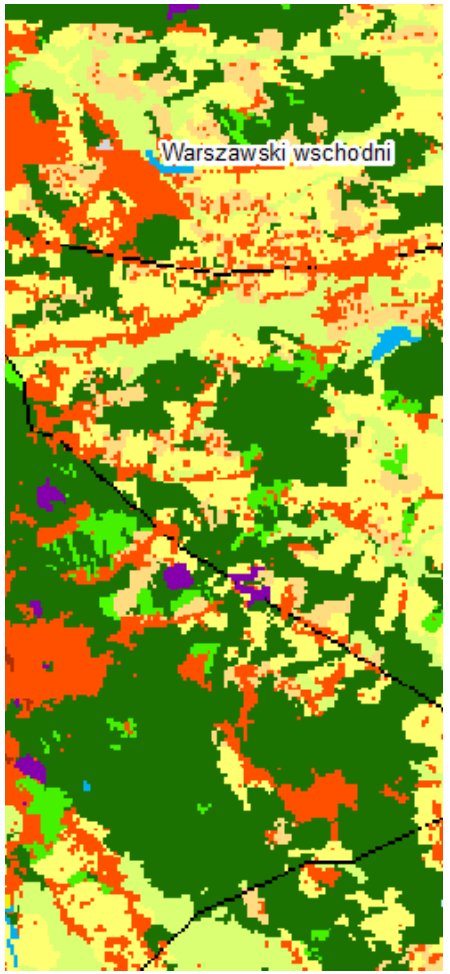
Speeding up or slowing down?

Urban form: easy to see, hard to measure

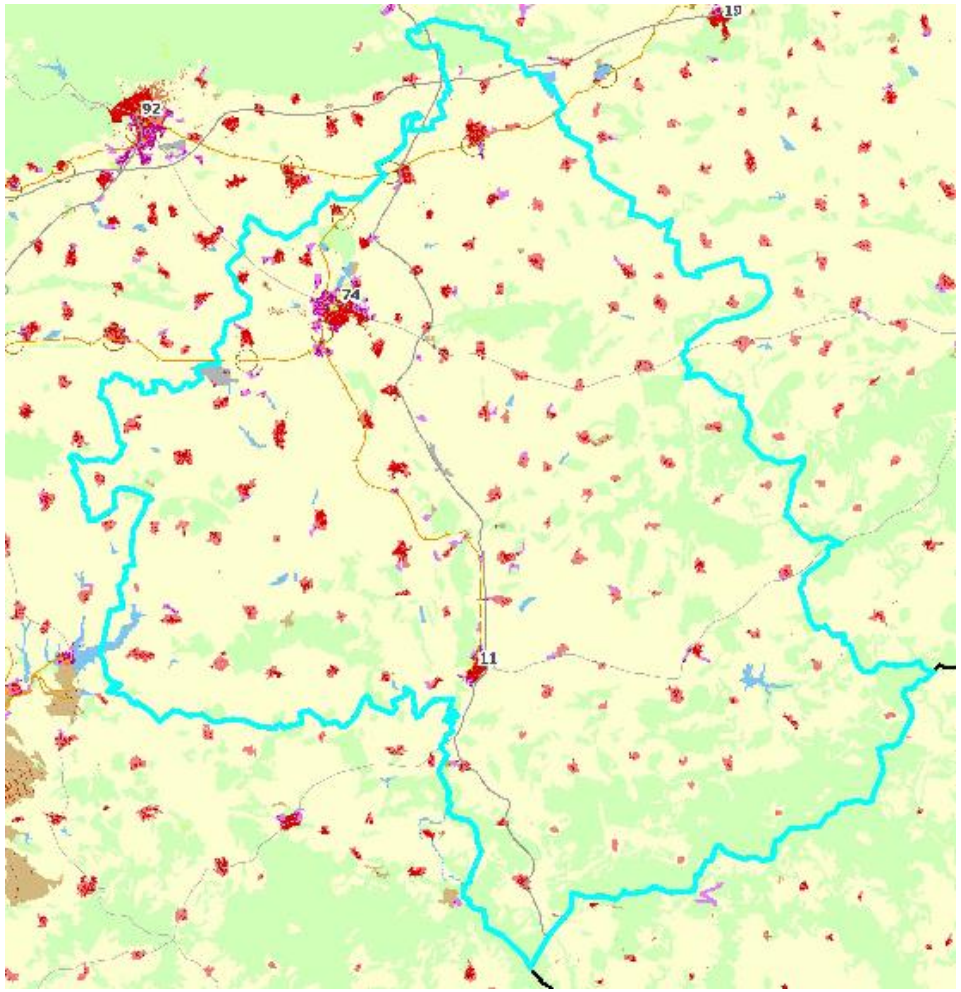


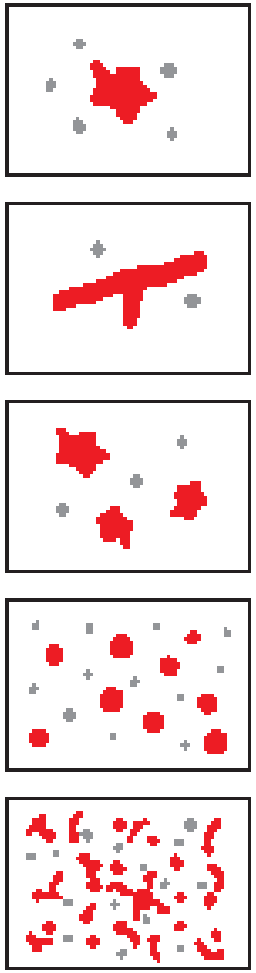


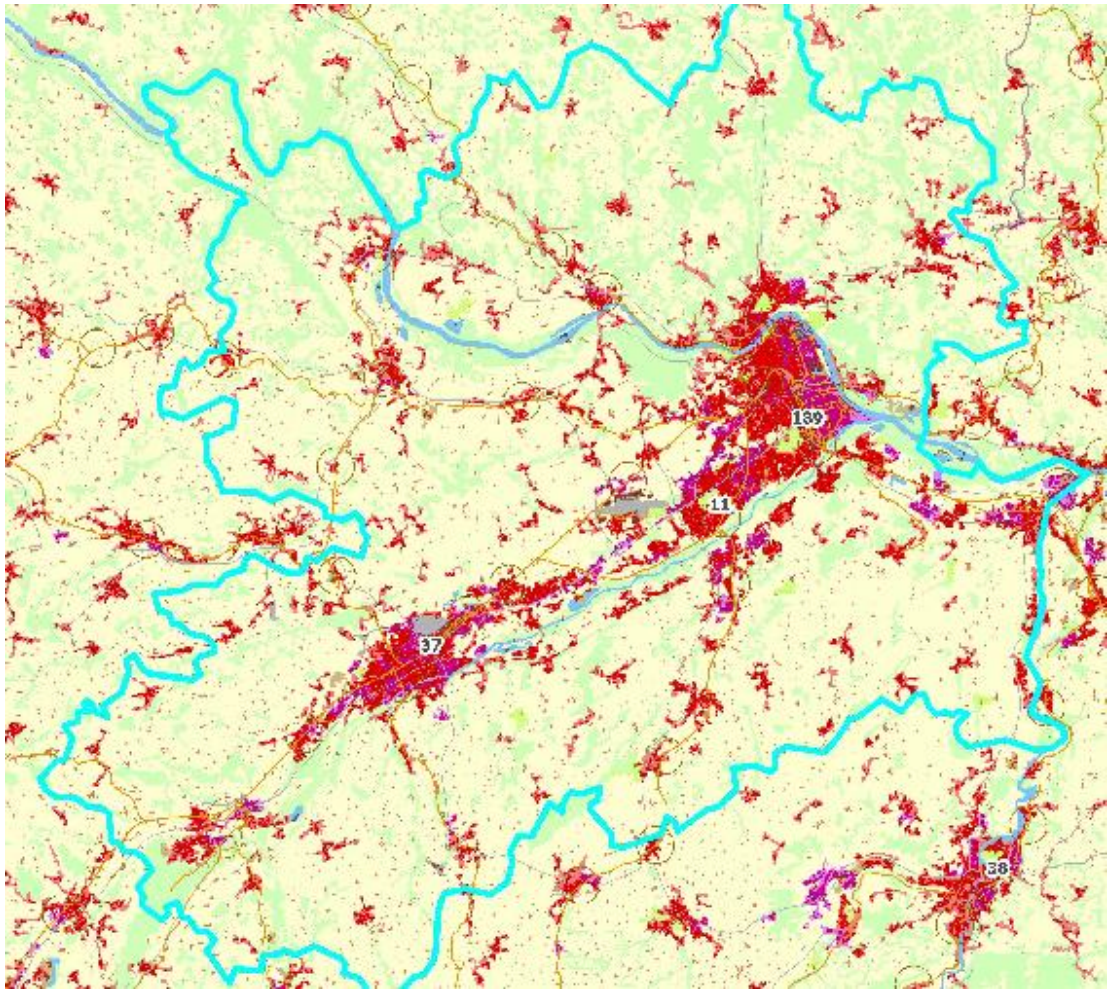




Morphological analysis







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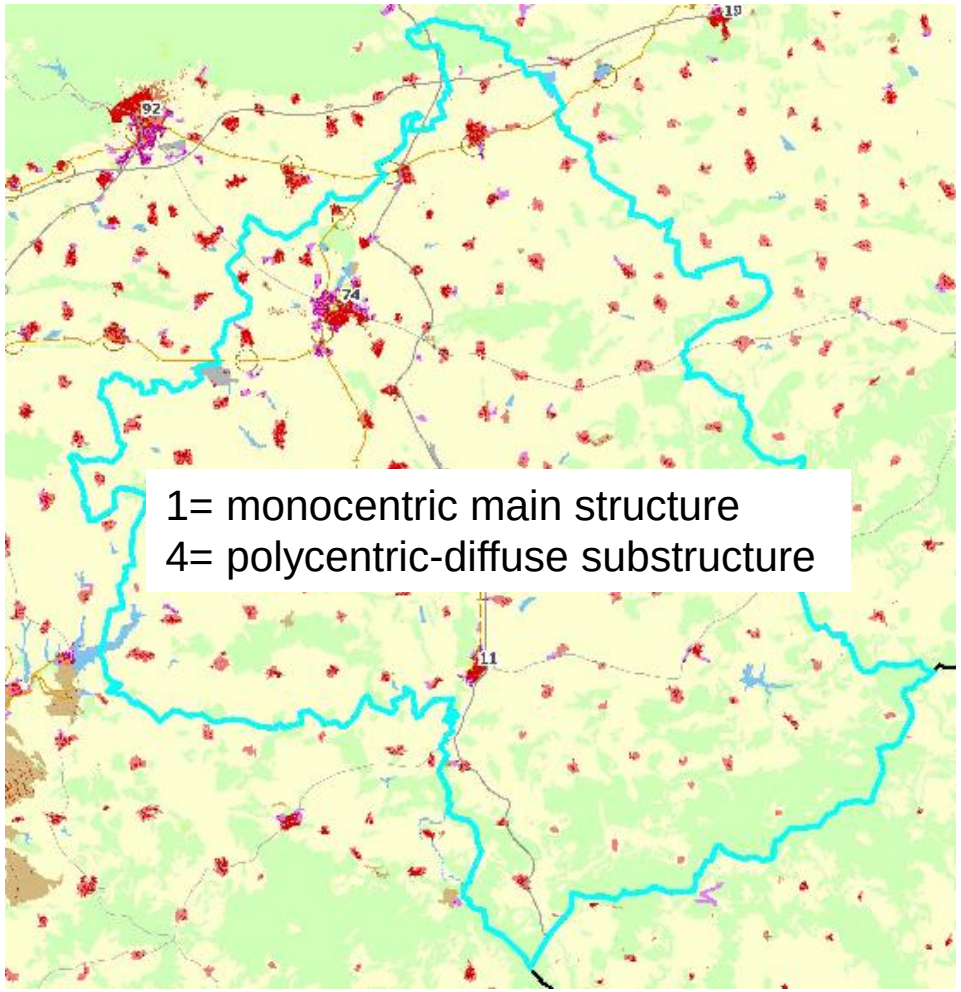
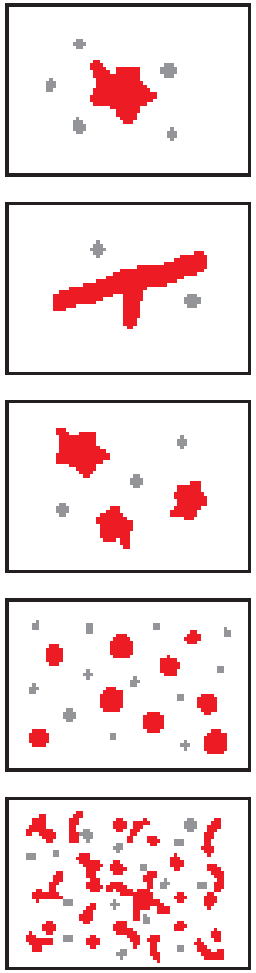
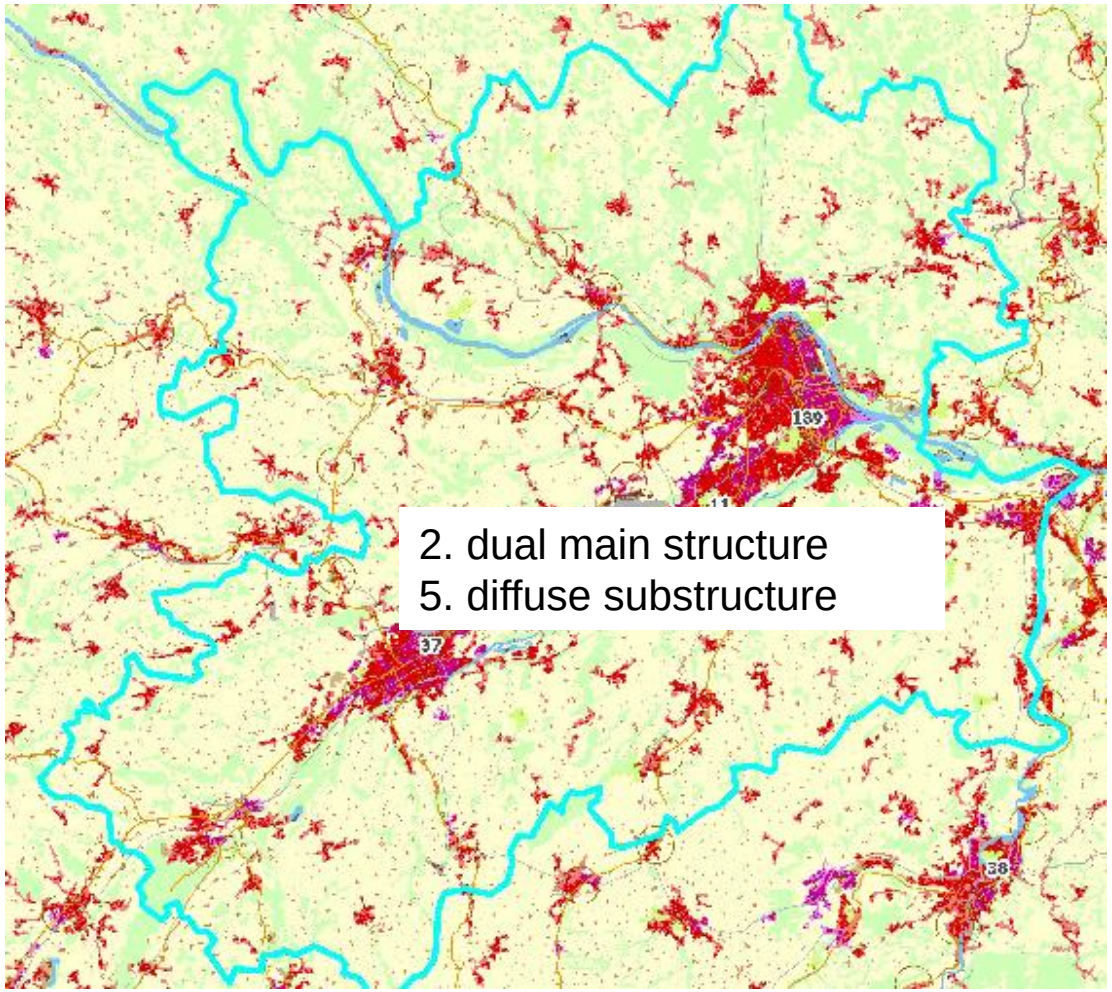
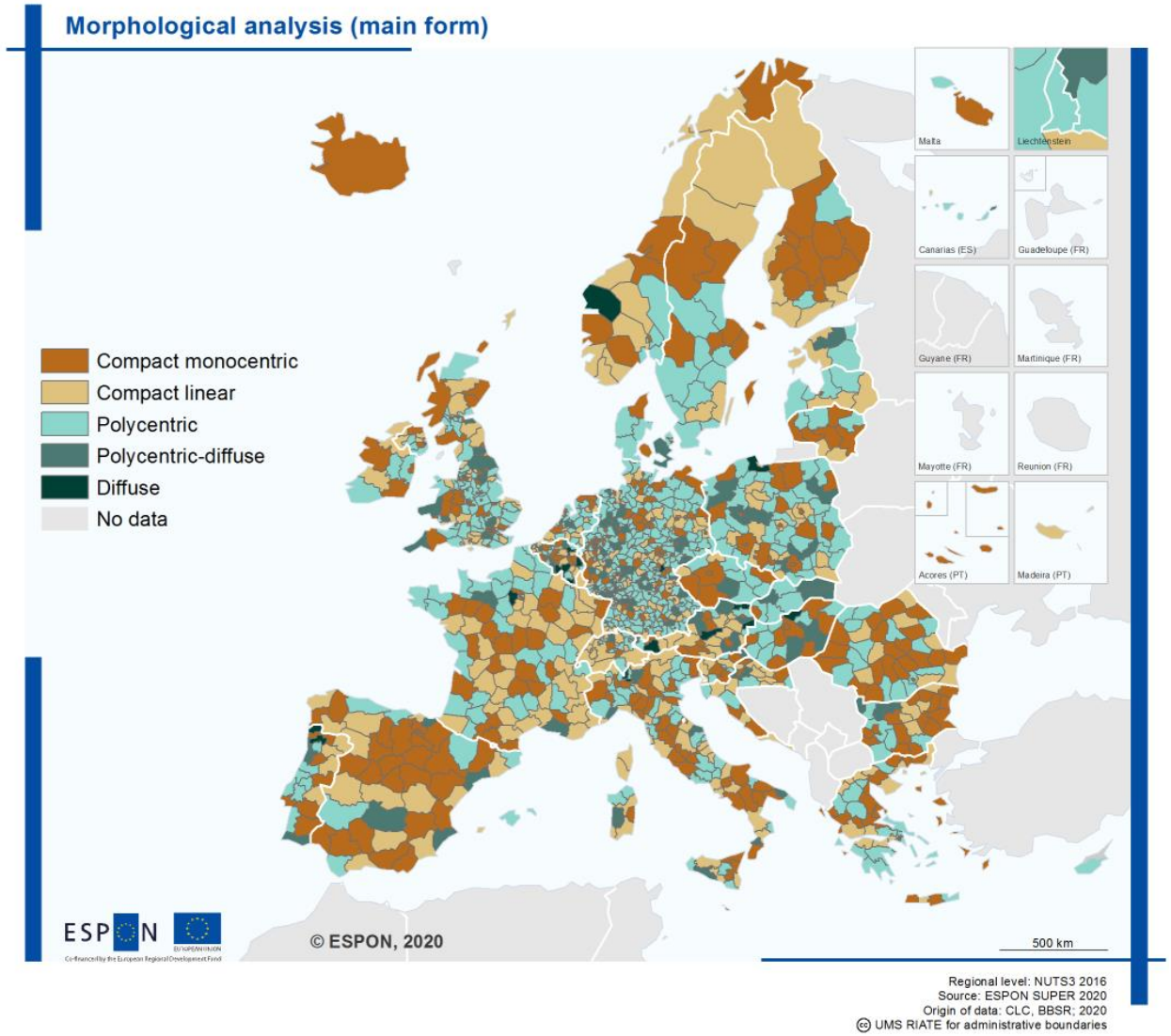
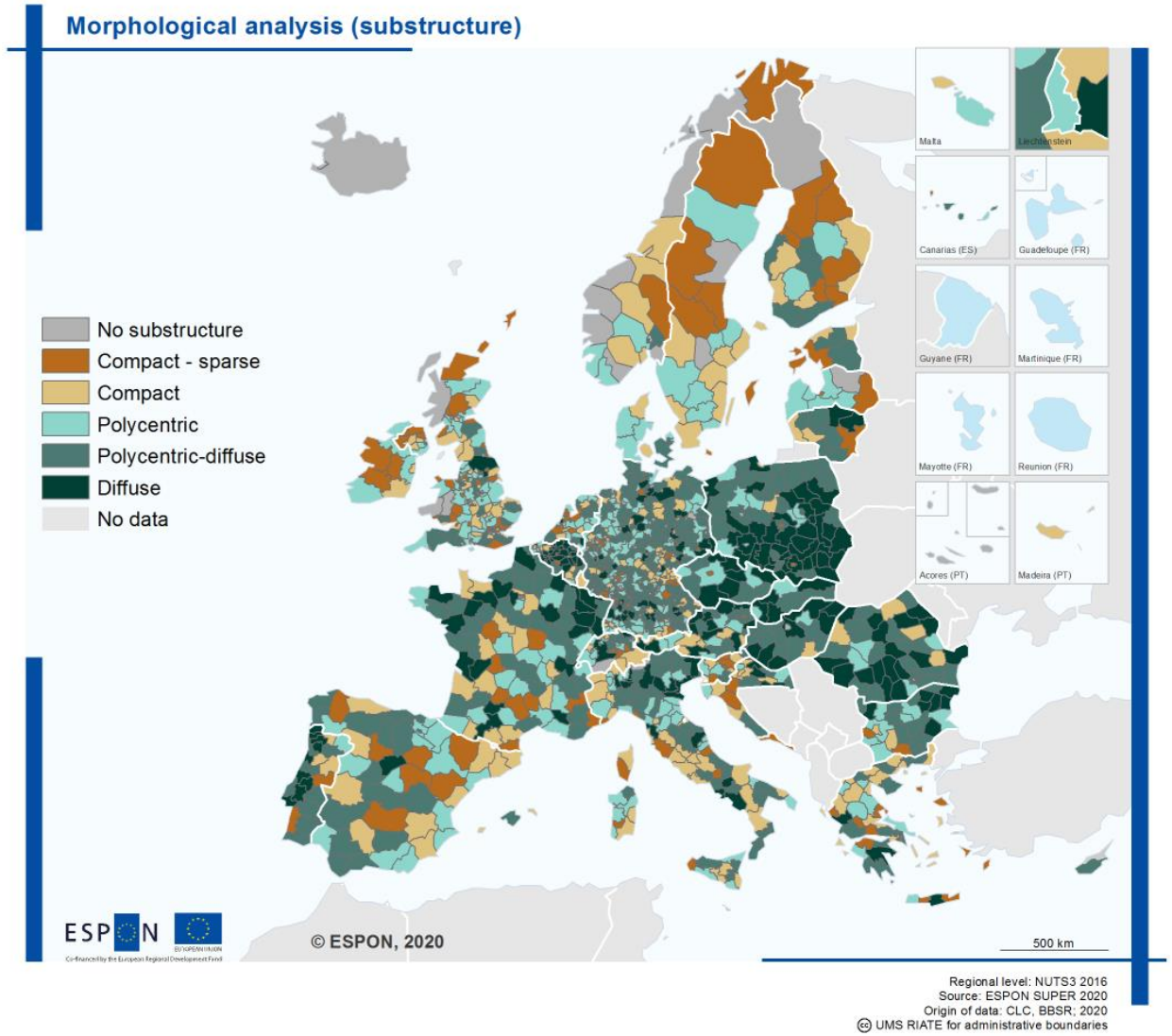


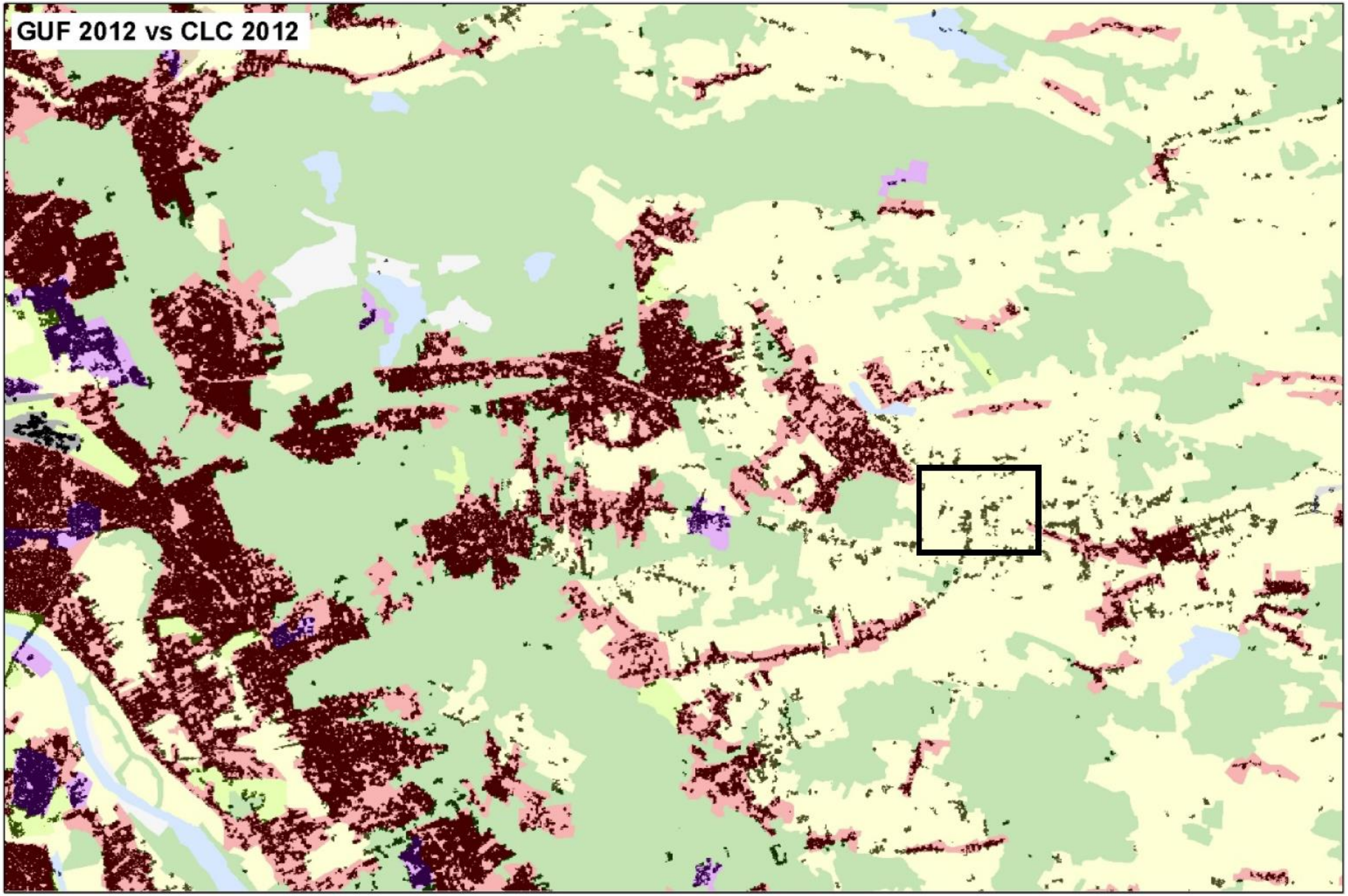


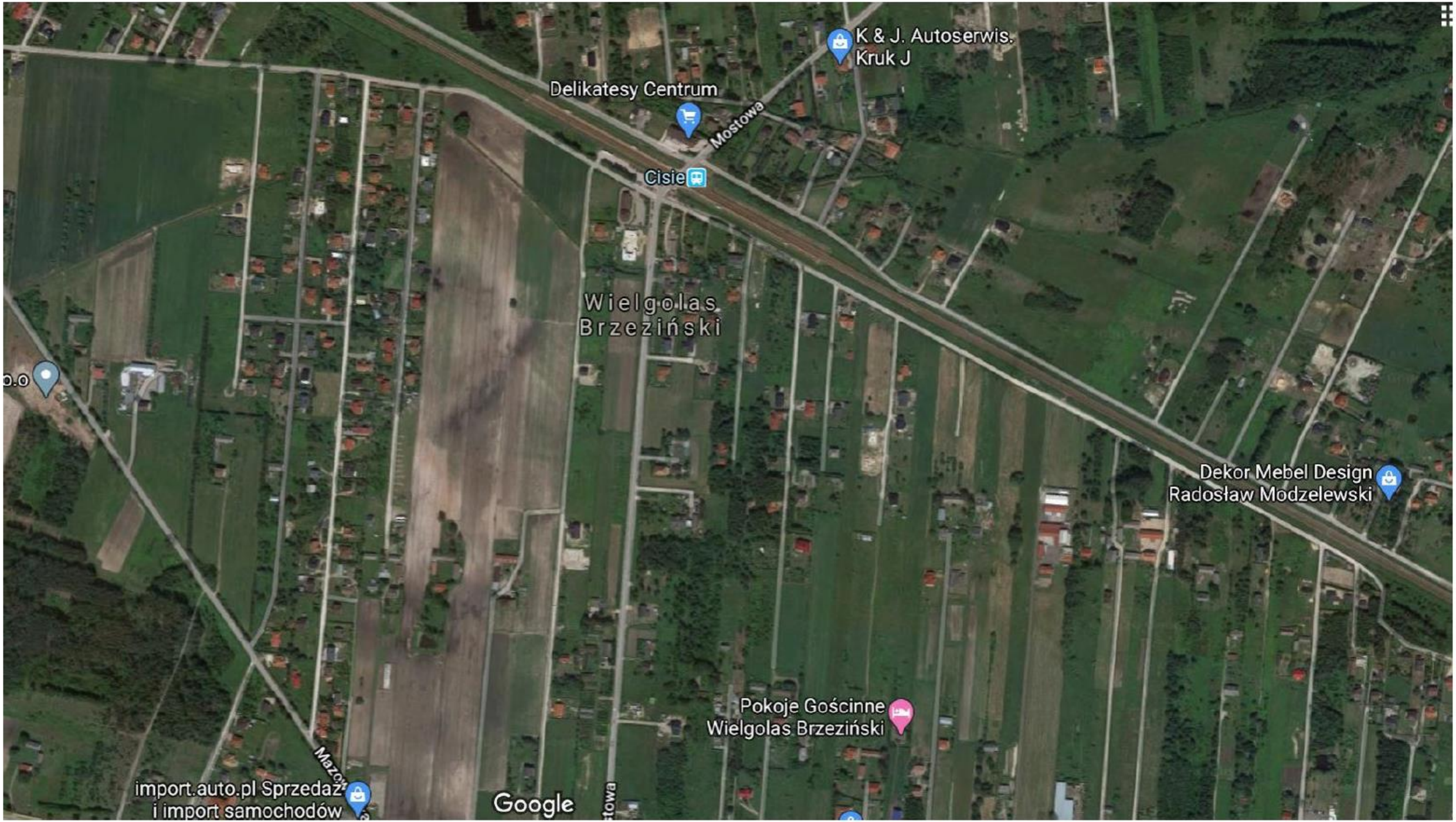


- Polycentric regions were the most frequently occurring structure in Europe
- diffuse development in the substructure as frequent around monocentric as polycentric regions






GUF 2012 vs CLC 2012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Kruk J
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Mostowa
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Wielgolas
Brzeziński
Dekor Mebel Design
Radosław Modzelewski
Pokoje Gościnne
Wielgolas Brzeziński
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Conclusions on developments

- **Urbanization is nowhere near zero**
- Virtually all regions are growing in absolute terms and per capita
- Urbanization is unidirectional: over 8x of land is converted to than from urban
- Seems to be slowing since 2000

- **Geographic specificities**
- Some countries are slowing (ES, NL) while others accelerating (PL, UK)
- Urban form is varied and tends to replicate itself

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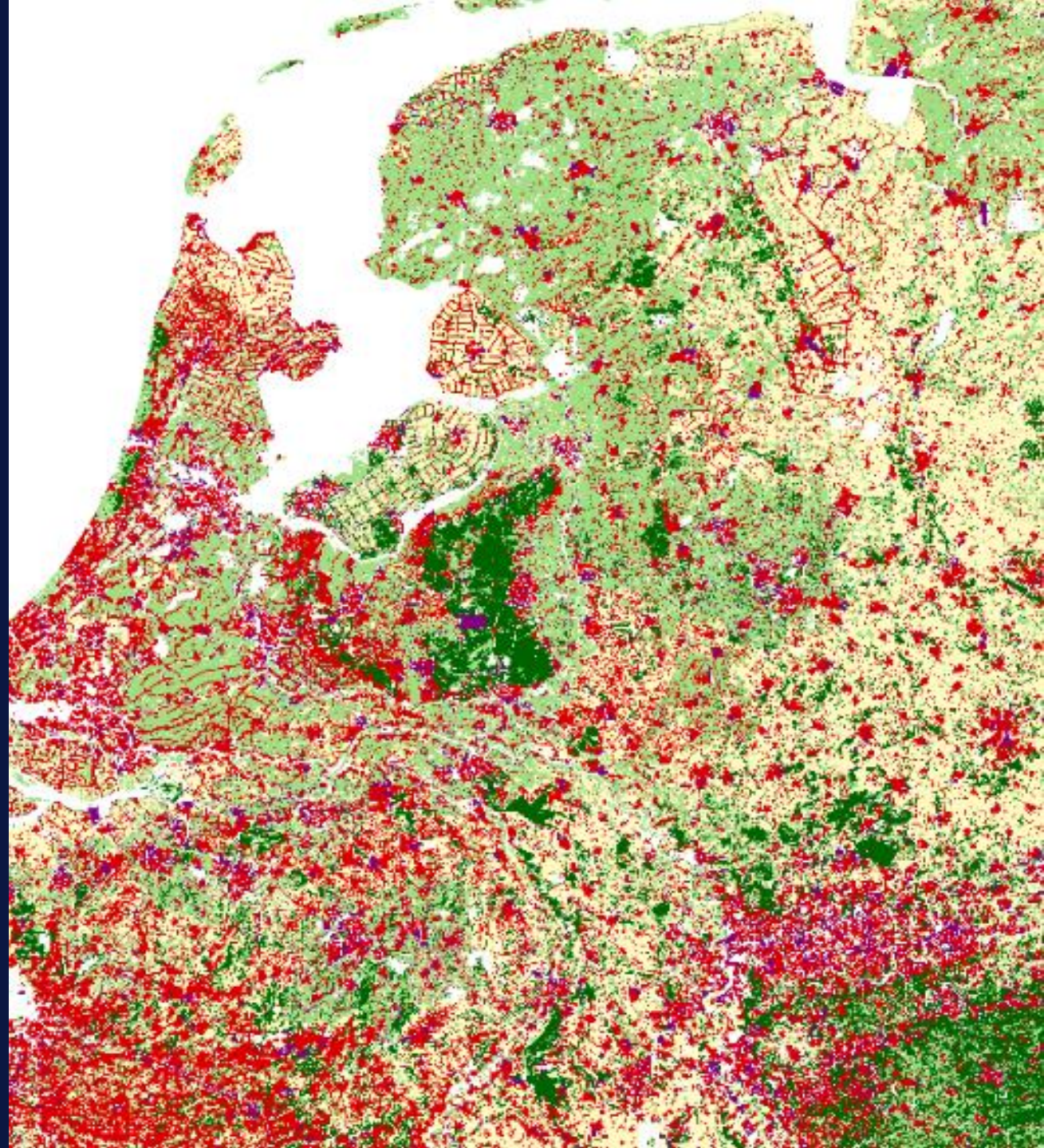
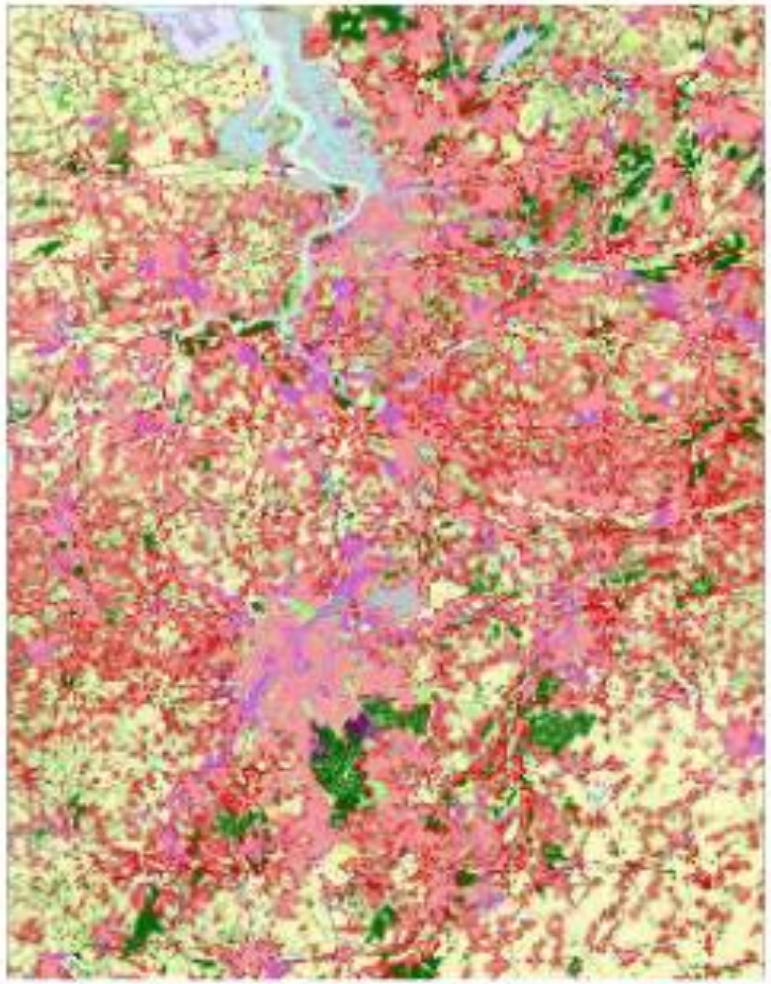
Scenarios for 2050



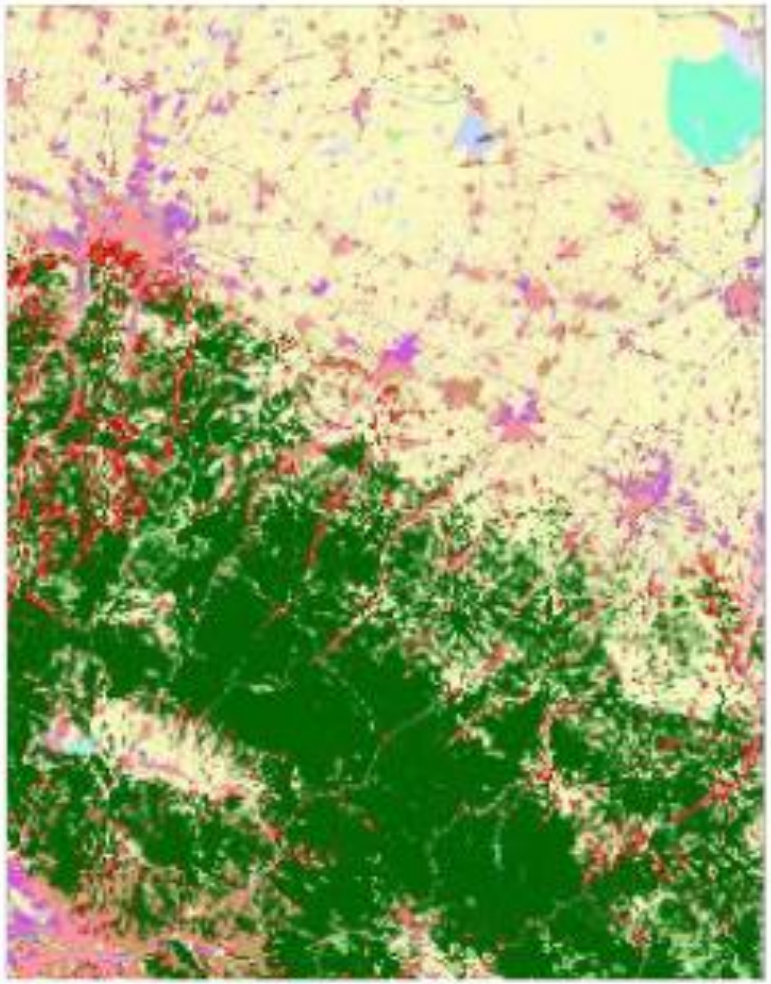
Three modes of urbanisation

- **Compact / containment**
  - High-density compact cities with land-take close to zero
  - Growth boundaries (e.g. greenbelts), infill development, brownfield redevelopment
- **Polycentric / clustered**
  - Medium-density, clustered, polycentric urban structure
  - Planned new towns, TOD, some new urbanist designs
- **Diffuse / scattered**
  - Low-density, scattered/discontinuous, car-oriented
  - Organic growth, home ownership and mobility support

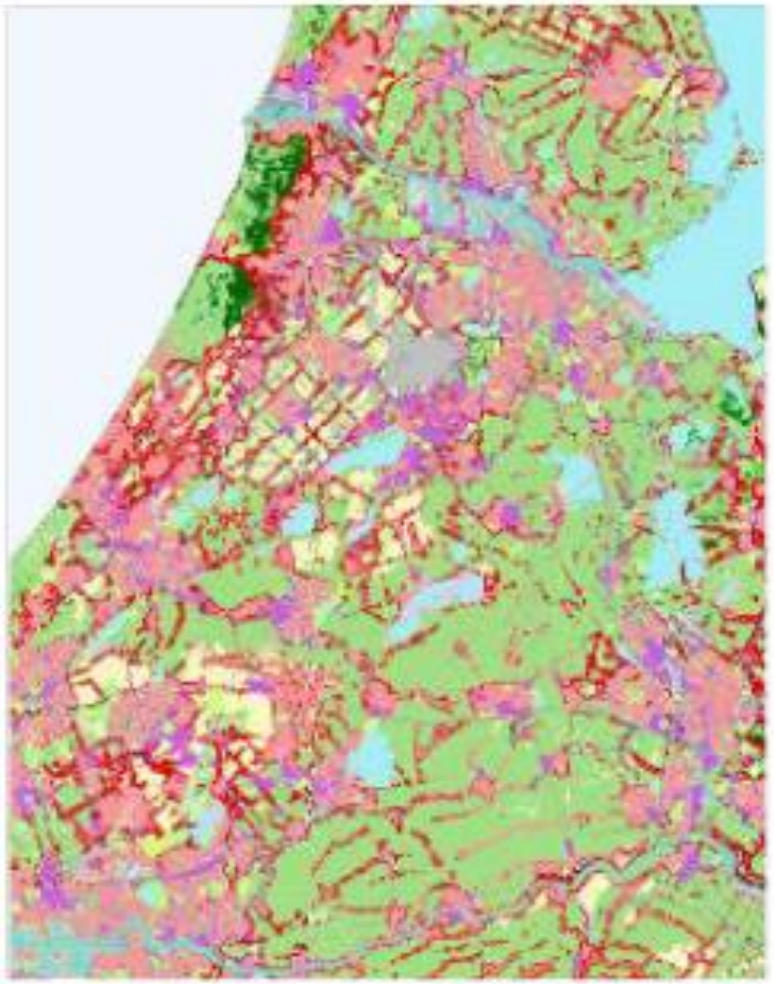
Diffuse scenario



Bruxelles-Antwerp region, Belgium

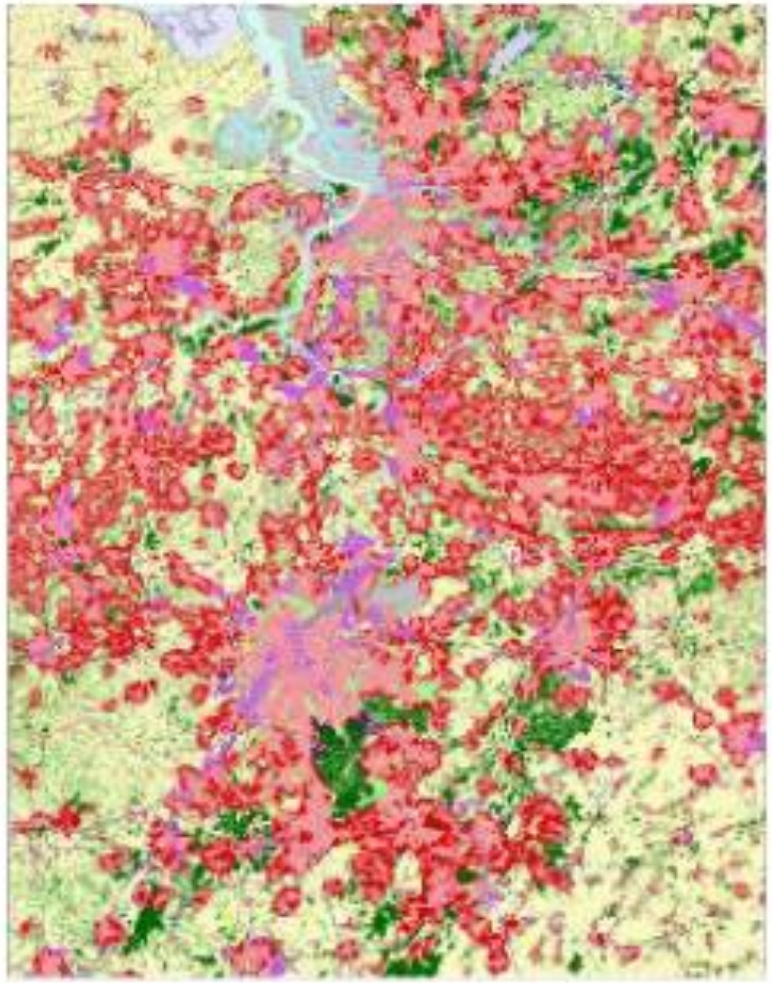


Bologna-Ravenna region, Italy

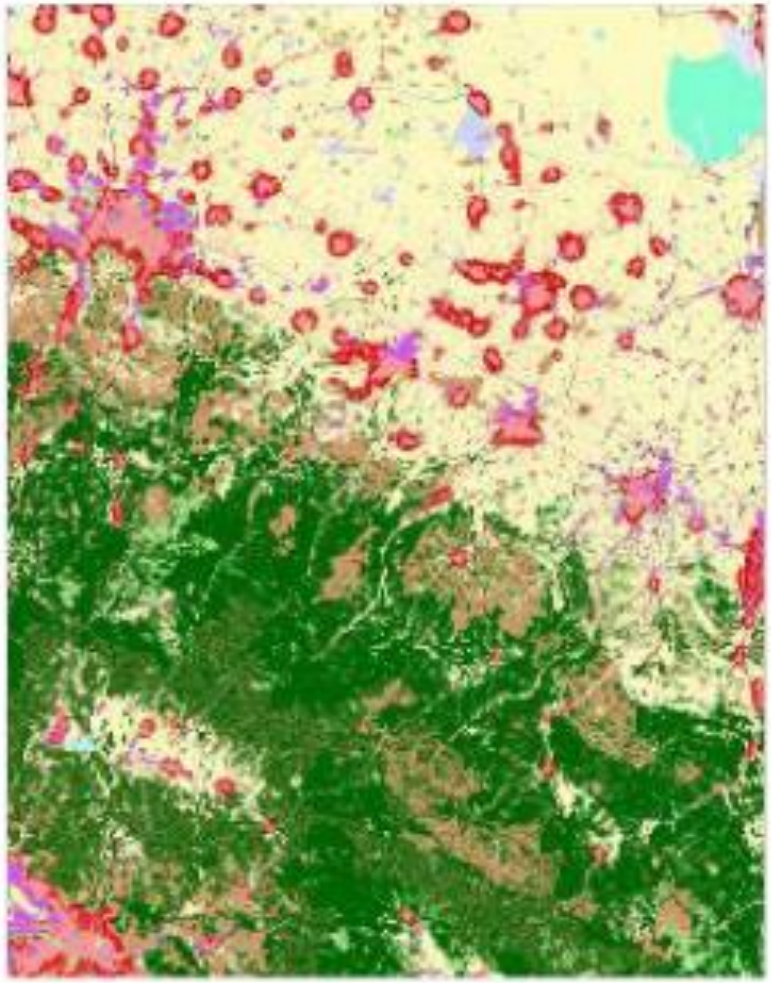


Randstad region, Netherlands

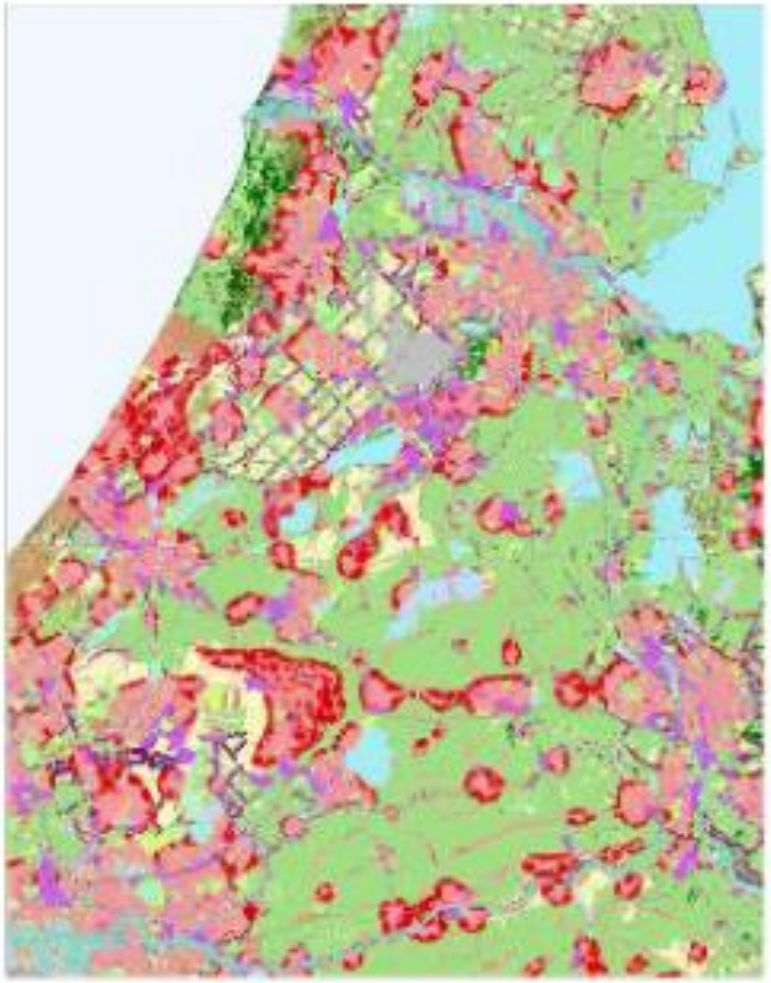
Polycentric scenario



Bruxelles-Antwerp region, Belgium

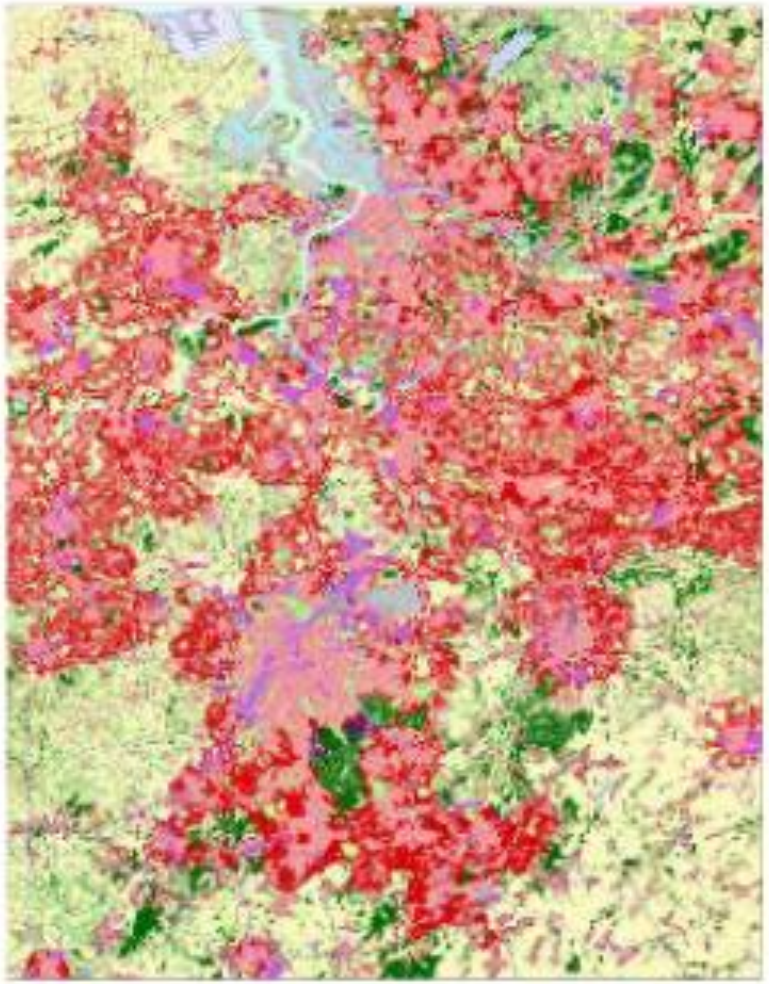


Bologna-Ravenna region, Italy

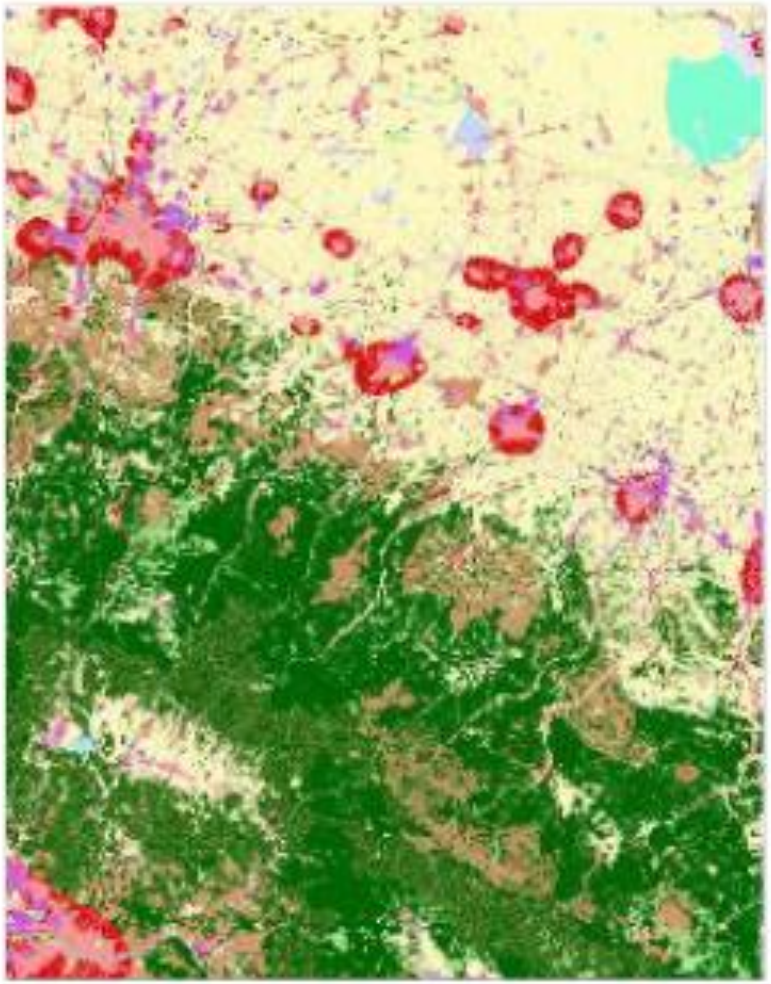


Randstad region, Netherlands

Compact scenario



Bruxelles-Antwerp region, Belgium



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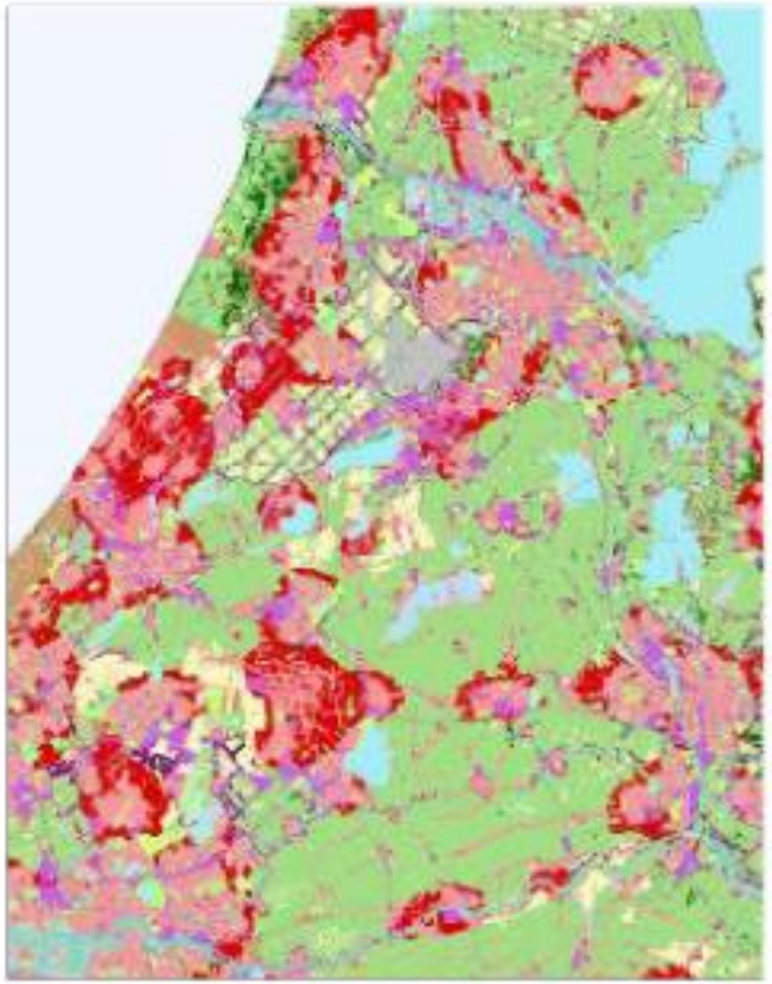
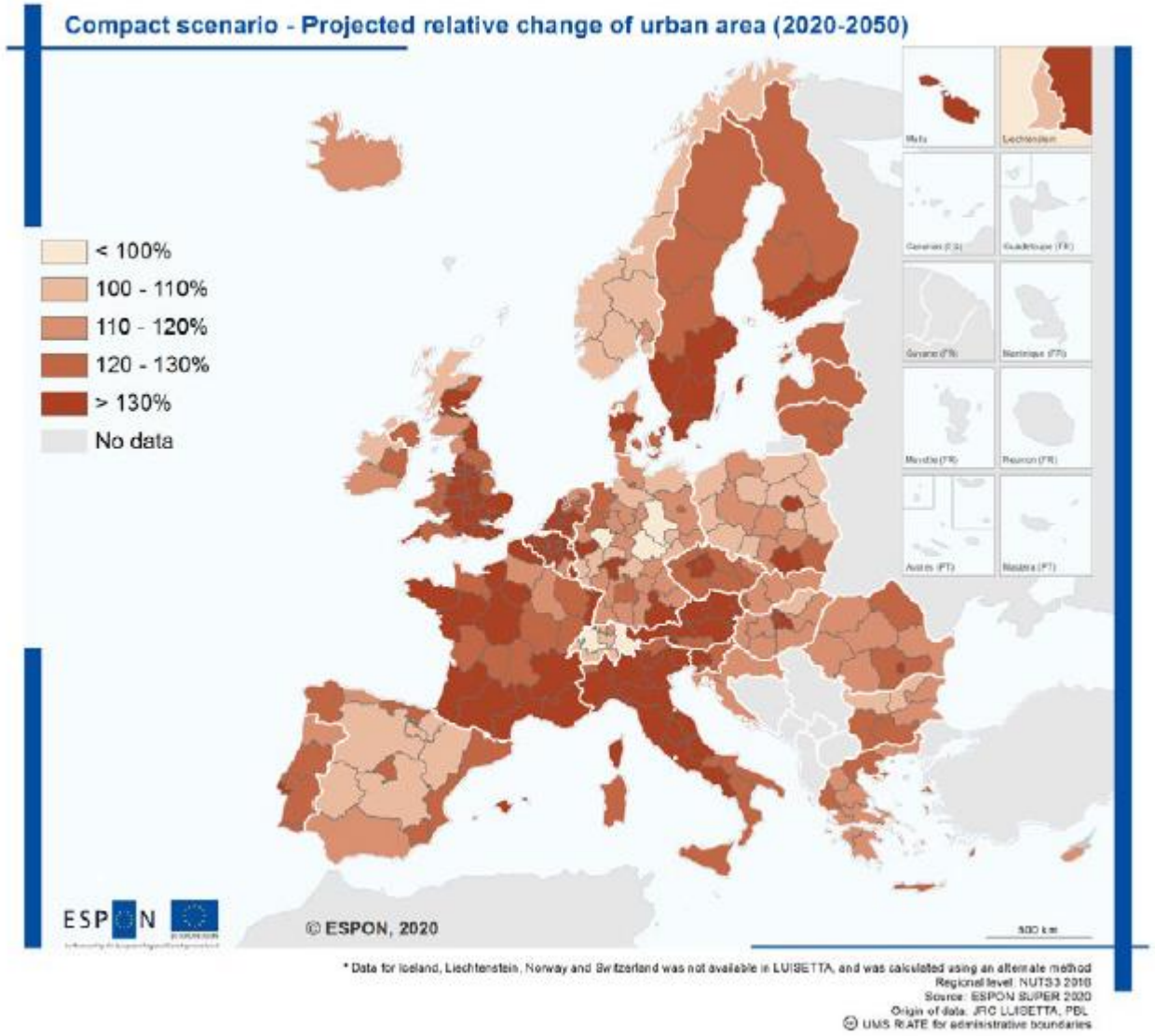
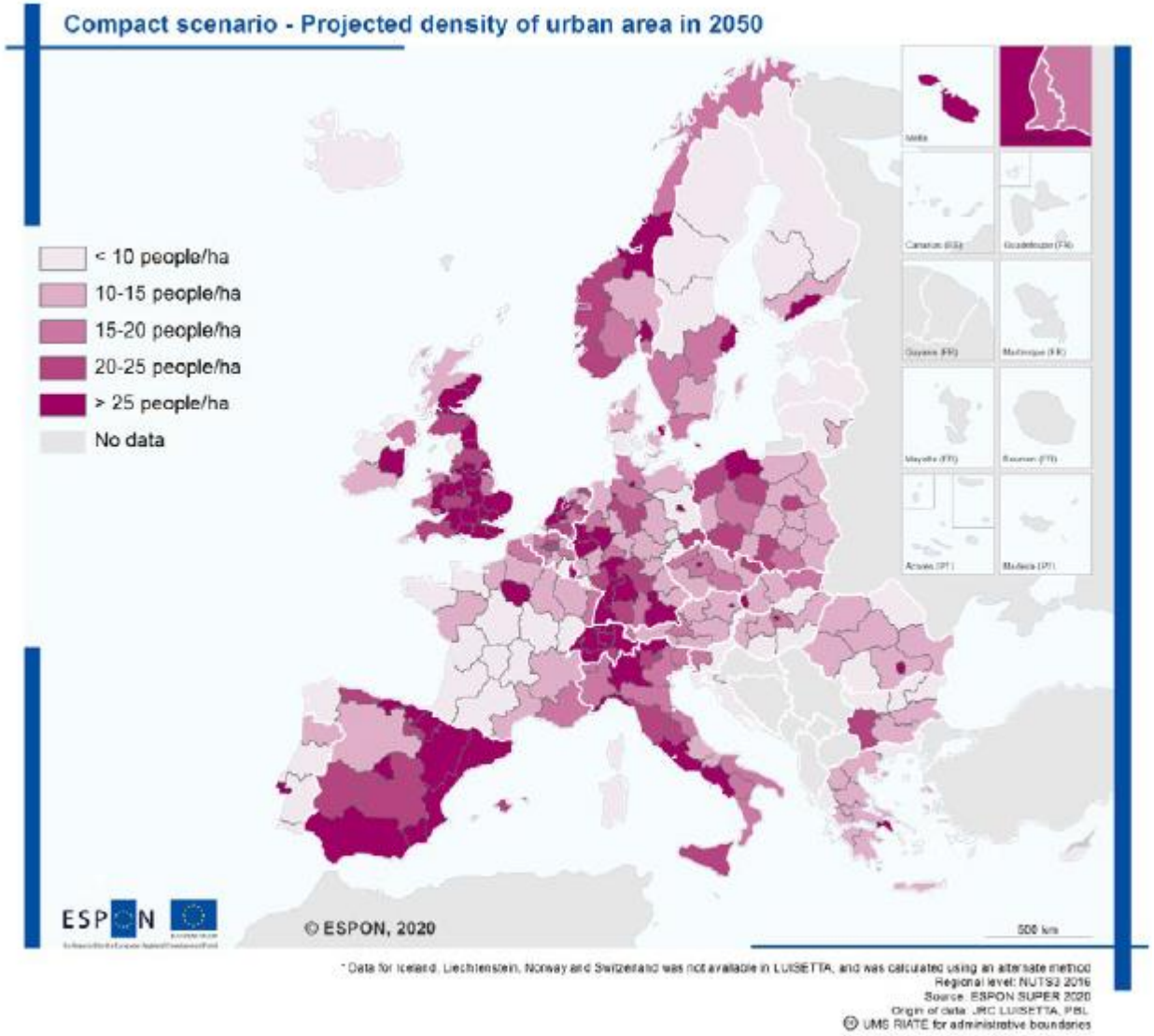


Randstad region, Netherlands

Urban growth



Population density



	Compact	Polycentric	Diffuse
Economic sustainability			
GDP, wealth	+/–*	++	+
Public finance	+ +	+	–
Jobs	+ +	++	+/ –
Accessibility	+/–	++	+/–
Business areas	++	++	+/–
Housing demand / new construction	–	+	+
Transportation costs	+/–	+	– –
Energy consumption	+	+	– –
Ecological sustainability			
Reducing mobility (by car)	+ +	+ +	– –
Reducing pollution, including CO2	+ +	+	– –
Green urban areas	–	+	–/+
Biodiversity	+/–	+/–	––
Land consumption	+	+	– –
Natural hazards – risk and vulnerability	–	+	+/–
Climate change adaptation/mitigation	+/–	+	+/–
Consumption of resources	+/–	+	–
Space for future renewable energy	+/–	+/–	+/–
Space for future water retention	+	+	+
Space for future circular economy	+	+	–
Social sustainability			
Health	+/–	+/–	+/–
Affordable housing	+/–	+/–	+ +
Equity/inclusion	+/–	+	– –
Public and recreational space	+/–	+	+/–
Variety (high–rise, suburban, etc)	+	+	+
Mixed–use areas	+	++	–
Satisfaction with home environment	+/–	+	+

* For the sake of readability, findings are presented in a synthetic way, omitting the references and averaging out the weights for each indicator (+/– usually means conflicting findings between studies).

Scenario conclusions

- **Urban form matters for sustainability**
  - Some regions inherited certain forms, hard to change
  - Still some developments perceptible in 2000-2018 period
  - Scenarios allow for a political discussion on desired developments

- **Assessing urbanization modes**
  - Cartographic: which (types of) areas are urbanized in each scenario?
  - Statistical: how does urban growth and population density develop?
  - Multicriteria: how do the modes score on various (important) indicators?

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// Thank you

David Evers, PBL (Netherlands)