European Cities

the main challenges

the main trends

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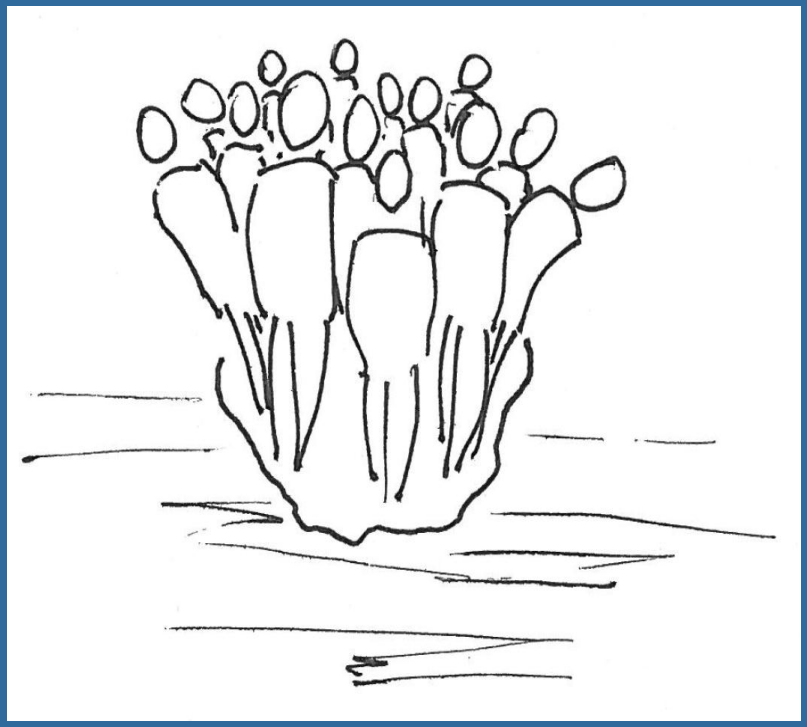
European Environment Agency

Urban areas

Cities in Europe …

4% area

75% people



Cities consume

69%

of Europe's primary energy

Source: IEA, 2008

Density and compactness for better efficiency

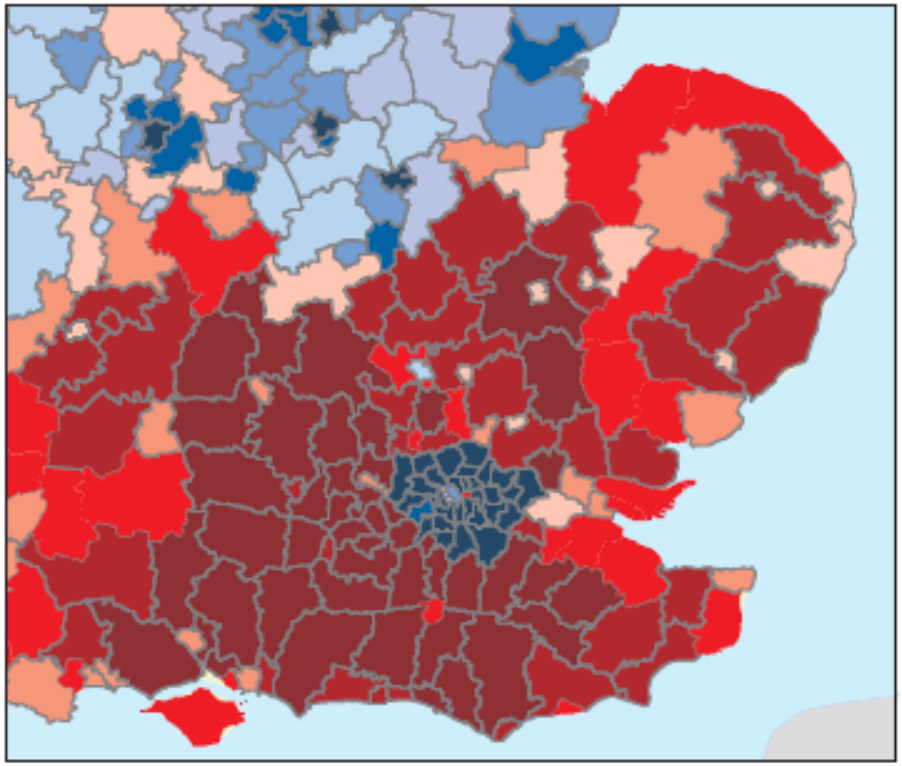
city resident

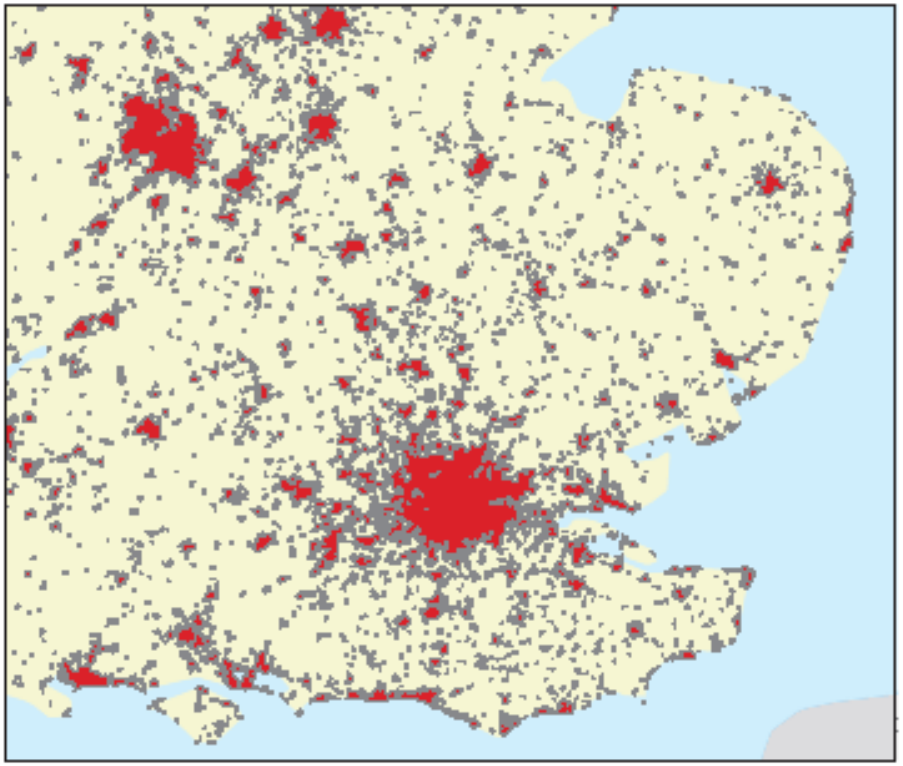
rural resident

tonnes of oil equivalent / year in Europe

Source: IEA, 2008

Less greenhouse gas emissions in the most dense part of London





Transport greenhouse gas footprint per capita, 2006

Tonnes CO_2 equivalent

1.75 5.47

Urban/rural land use pattern, 2000

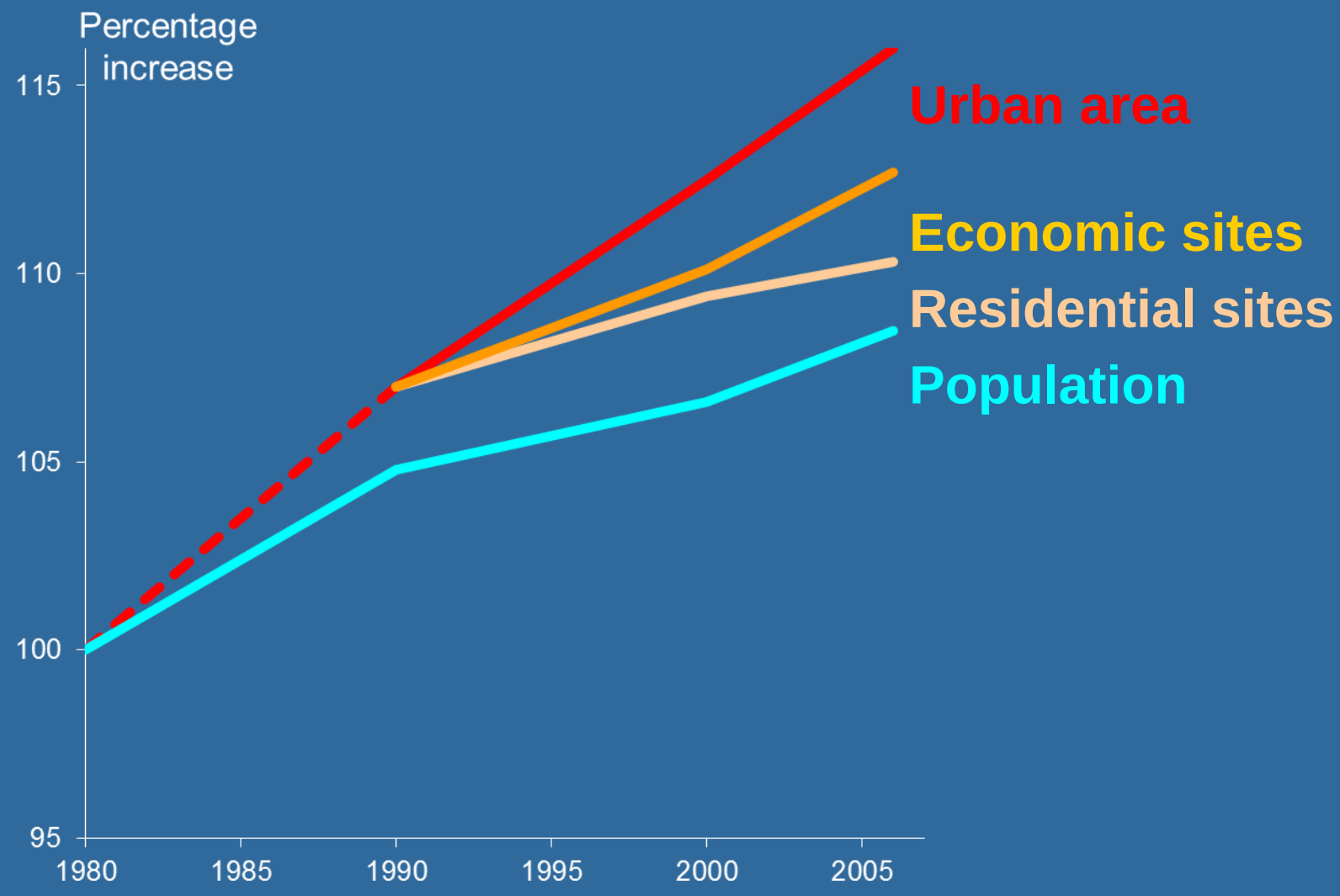
Urban Morphological Zone (UMZ)

Rural background

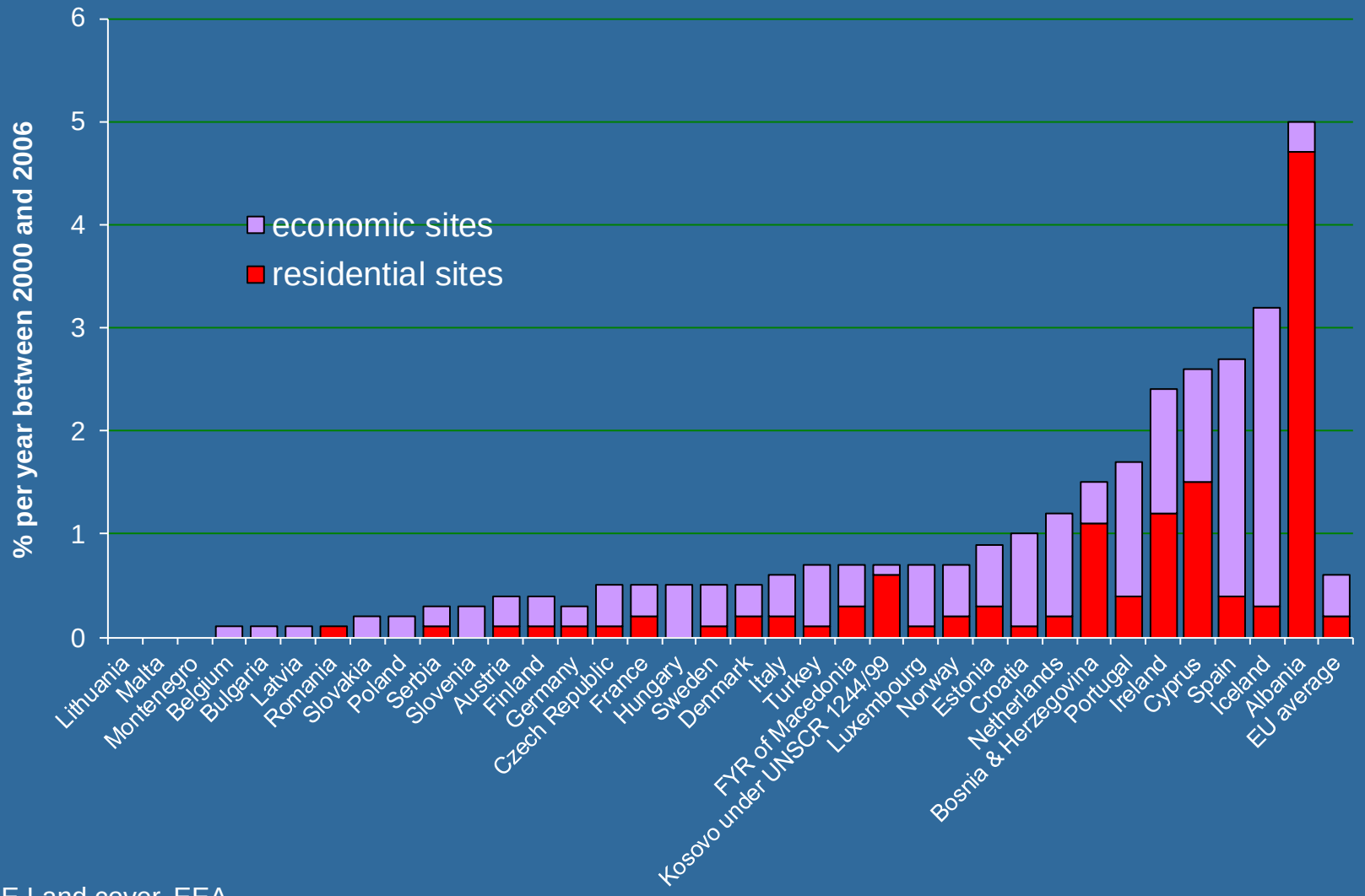
Sources: SEI, 2009; EEA, 2000.

Trends

Urban area grows in Europe...

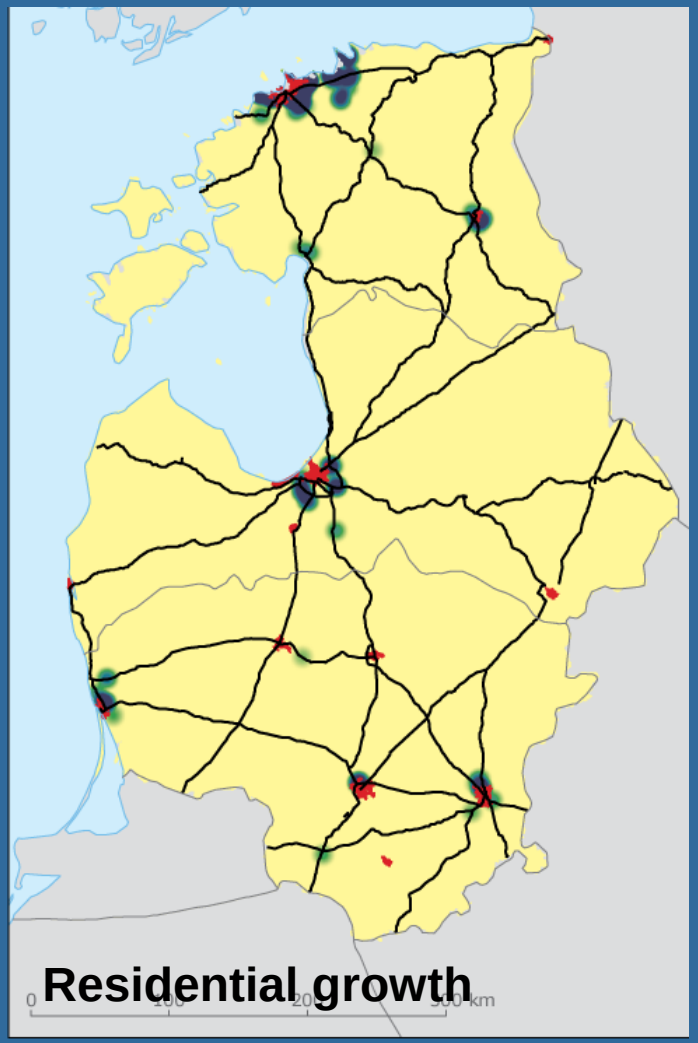


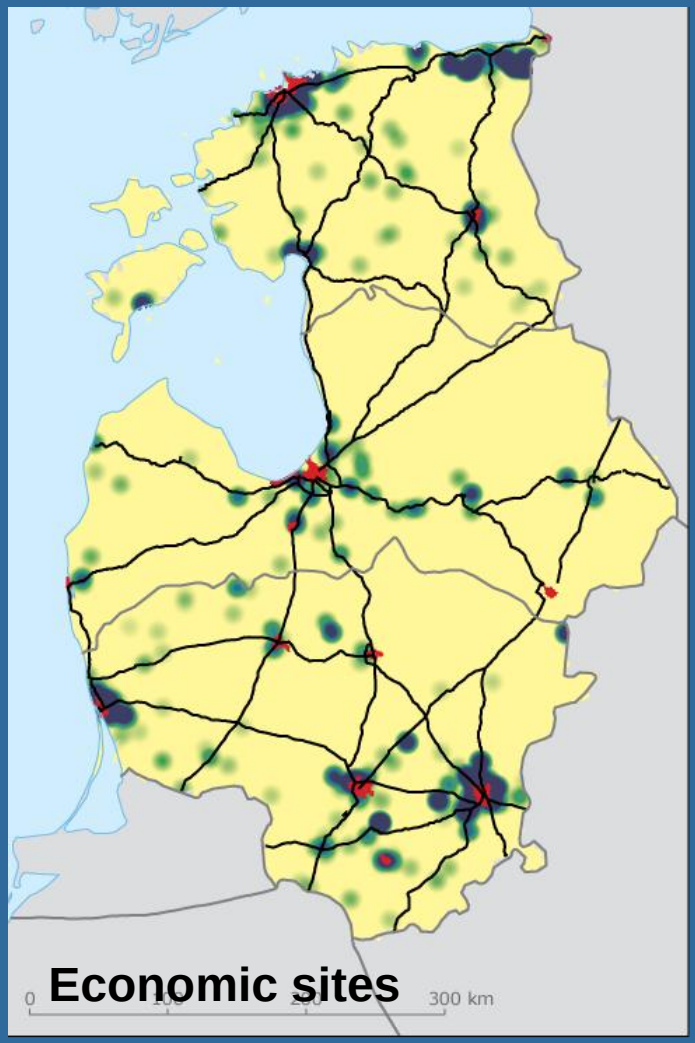
What growth?



CORINE Land cover, EEA

Baltic States, 2000-2006





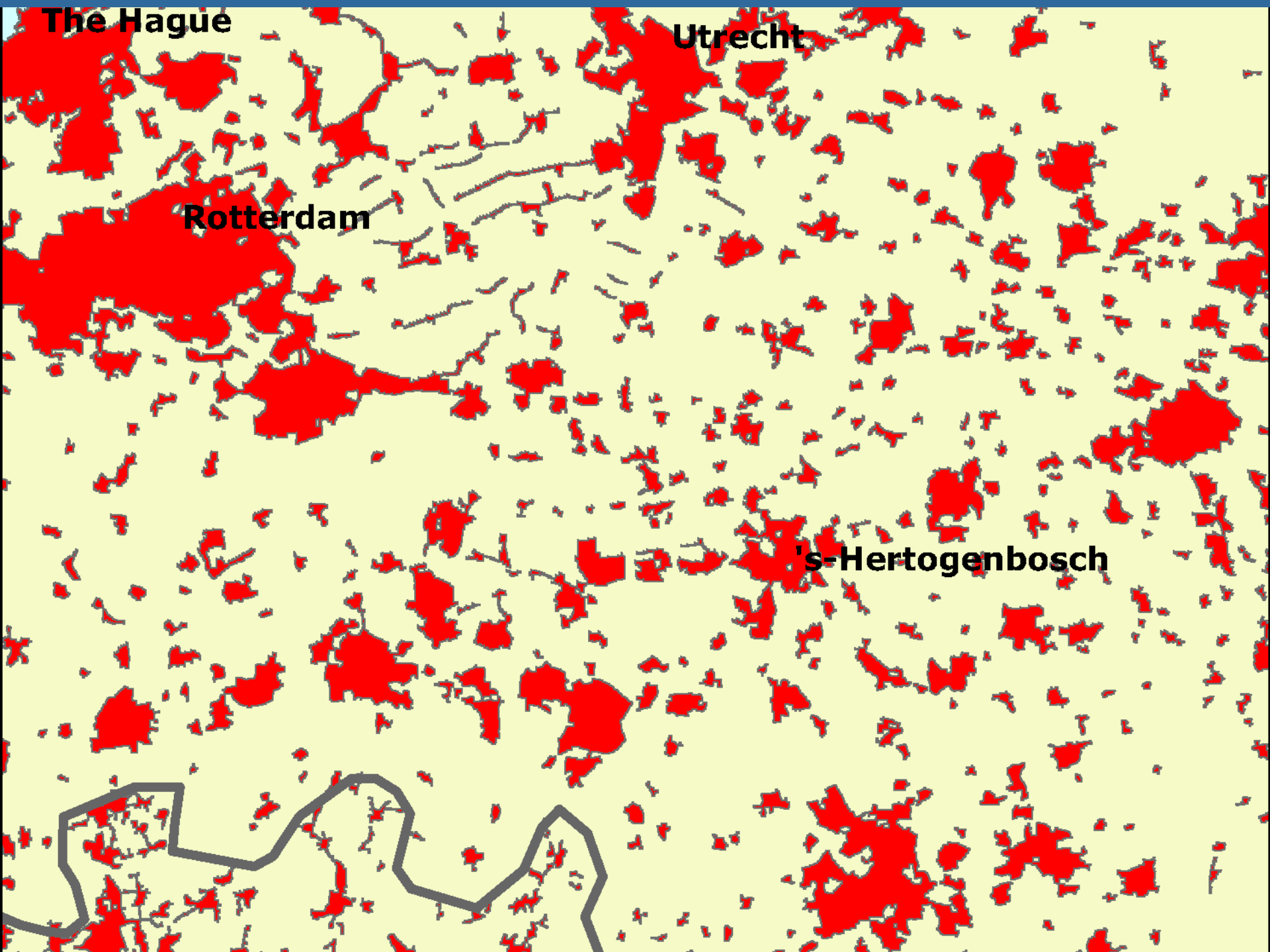
UMZ 2006

Main roads

Intensity of Land Cover Flow

Low

High

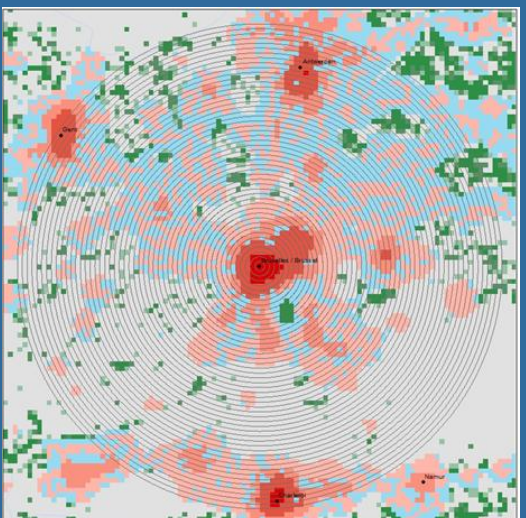

The Hague
Utrecht
Rotterdam
's-Hertogenbosch

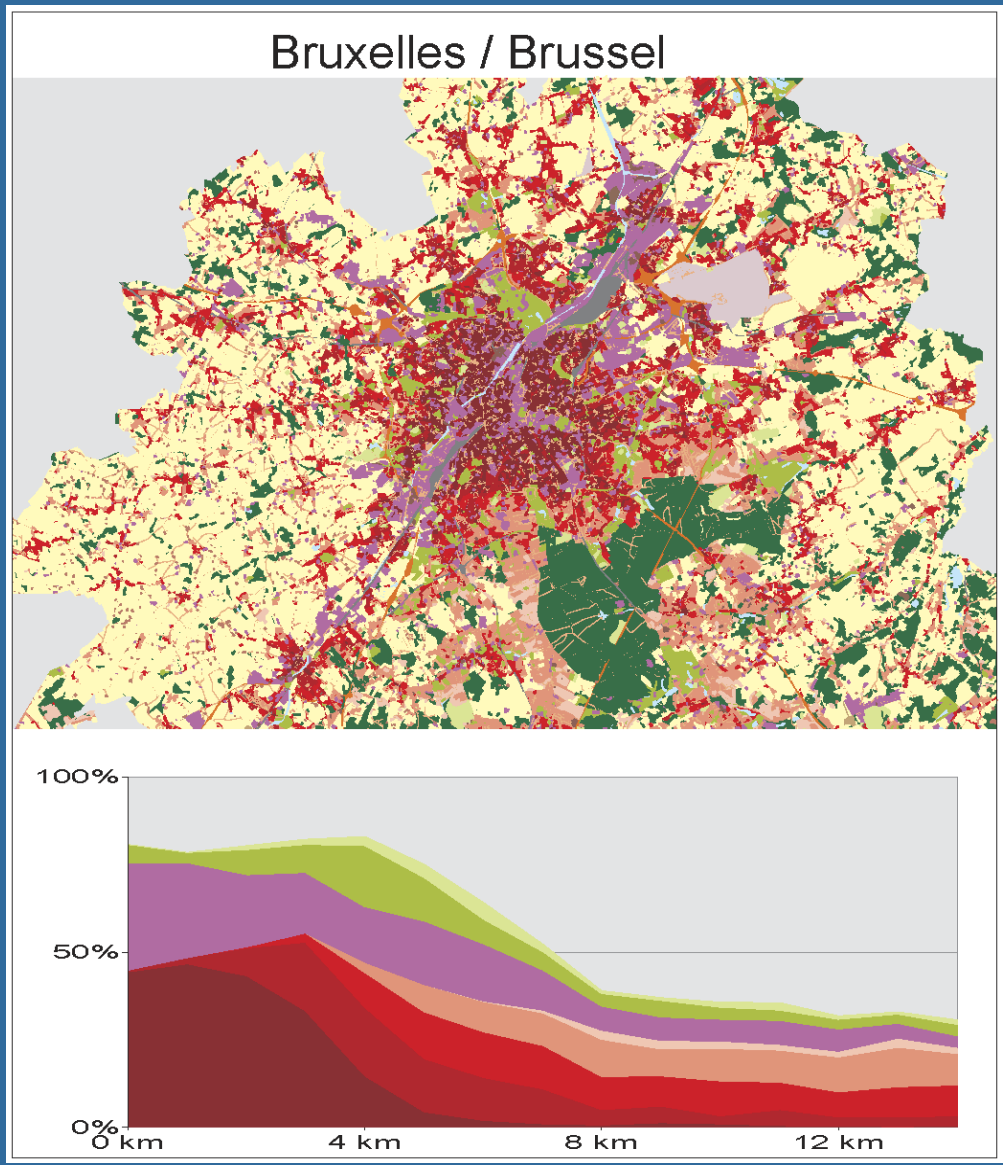
Differences urban – rural are blurring

Dilution of build-up areas in rural areas

Low density

Landscape fragmentation



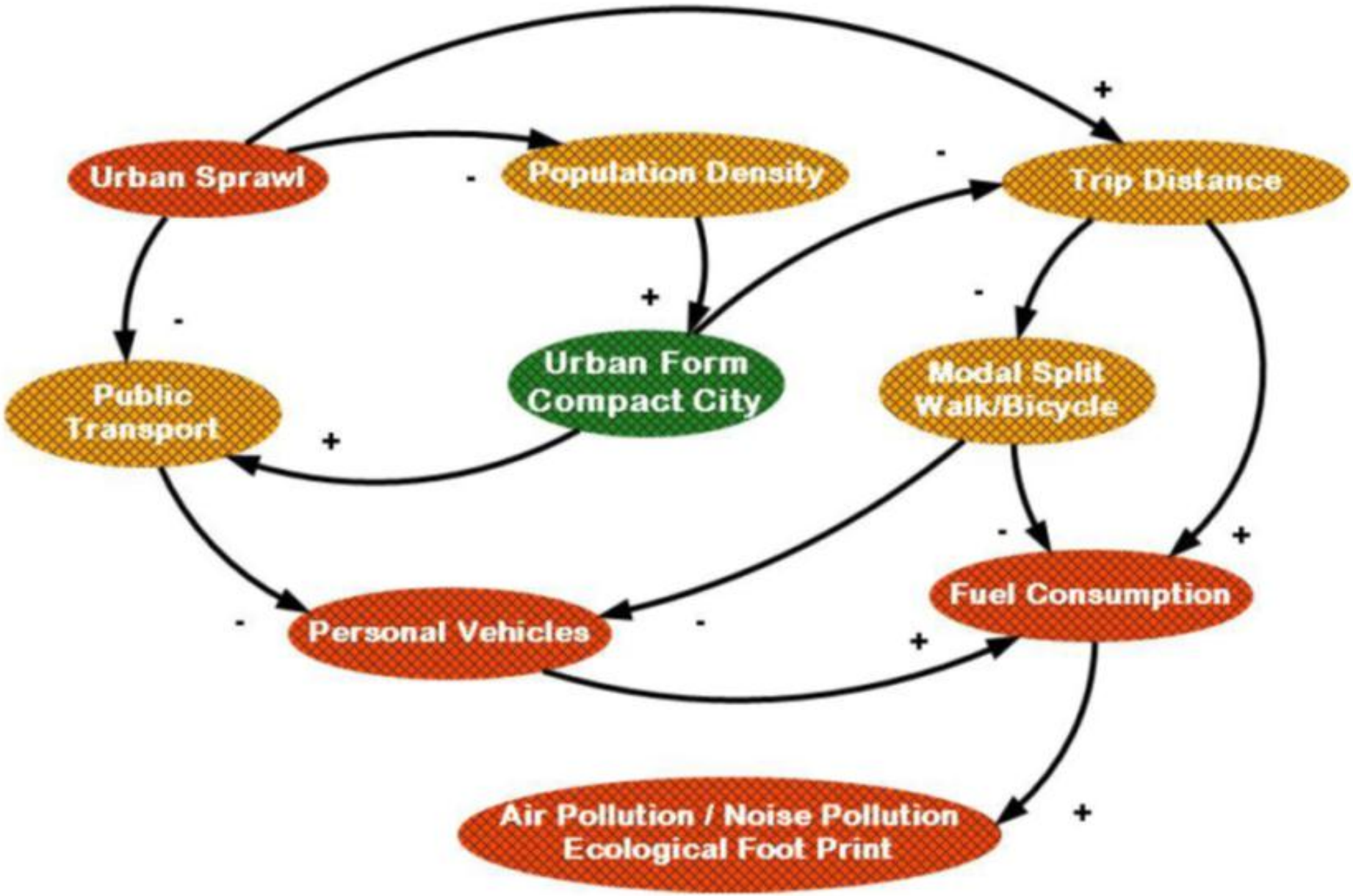


Compactness and density

Compactness and density

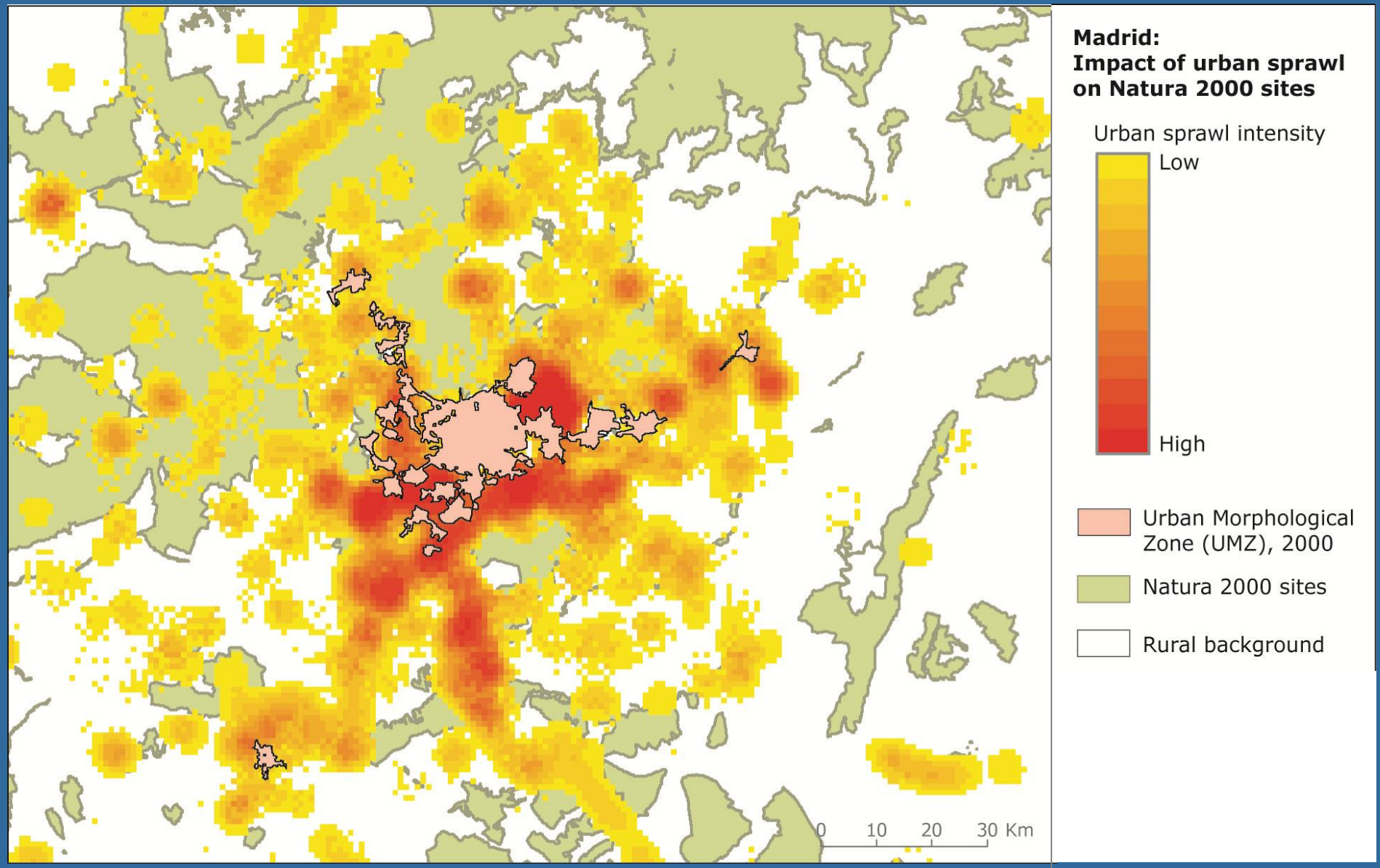
A use of space in a in a more sustainable way

Dense and proximate development patterns	Urban areas linked by public transport systems	Accessibility to local services and job
• *Shorter intra-urban distances* • *Urban land is intensively used* • *Distinct border between urban and rural*	• *Public transport facilitate mobility* • *More efficient public service delivery* • *More effective use of urban land*	• *Residents have access to local services on foot or by using public transport* • *Mixed land use*


Urban Sprawl
Population Density
Trip Distance
Public Transport
Urban Form Compact City
Modal Split Walk/Bicycle
Personal Vehicles
Fuel Consumption
Air Pollution / Noise Pollution
Ecological Foot Print
+
-
+
-
+
-
+
-
+
-
+
-
+
+

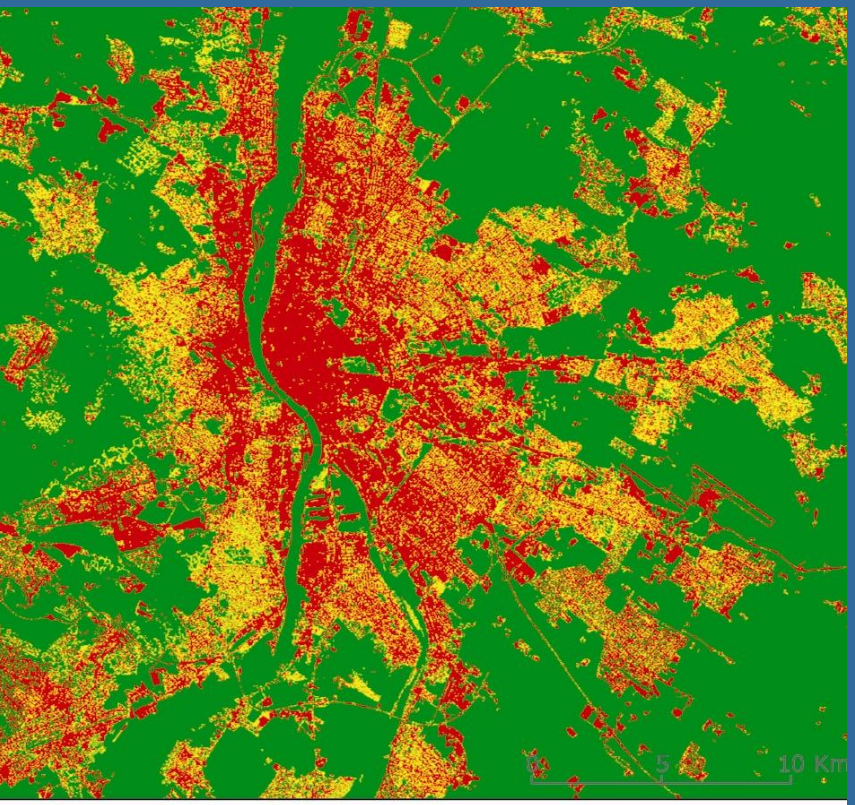
Proximity to nature

Land use conflicts



Comparing the degree of soil sealing and surface temperature in Budapest

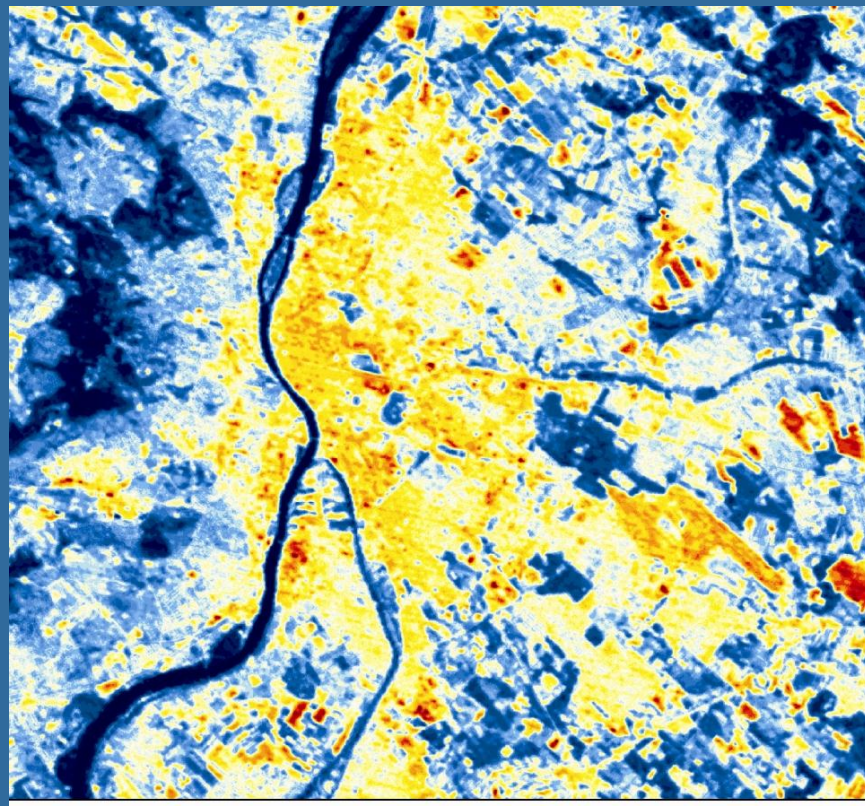
Heat Island effect



Degree of soil sealing (impermeability) of Budapest

Degree of soil sealing [%]

0 30 50 80 100



Surface temperature of Budapest, 1 August 2005, 9:30 CET

Temperature (°C)

≤ 15 16 19 22 25 28 31 34 35 36 37 40 43 ≥ 45

Working with nature

Multifunctionality of green infrastructure

Grey infrastructure

Only one function

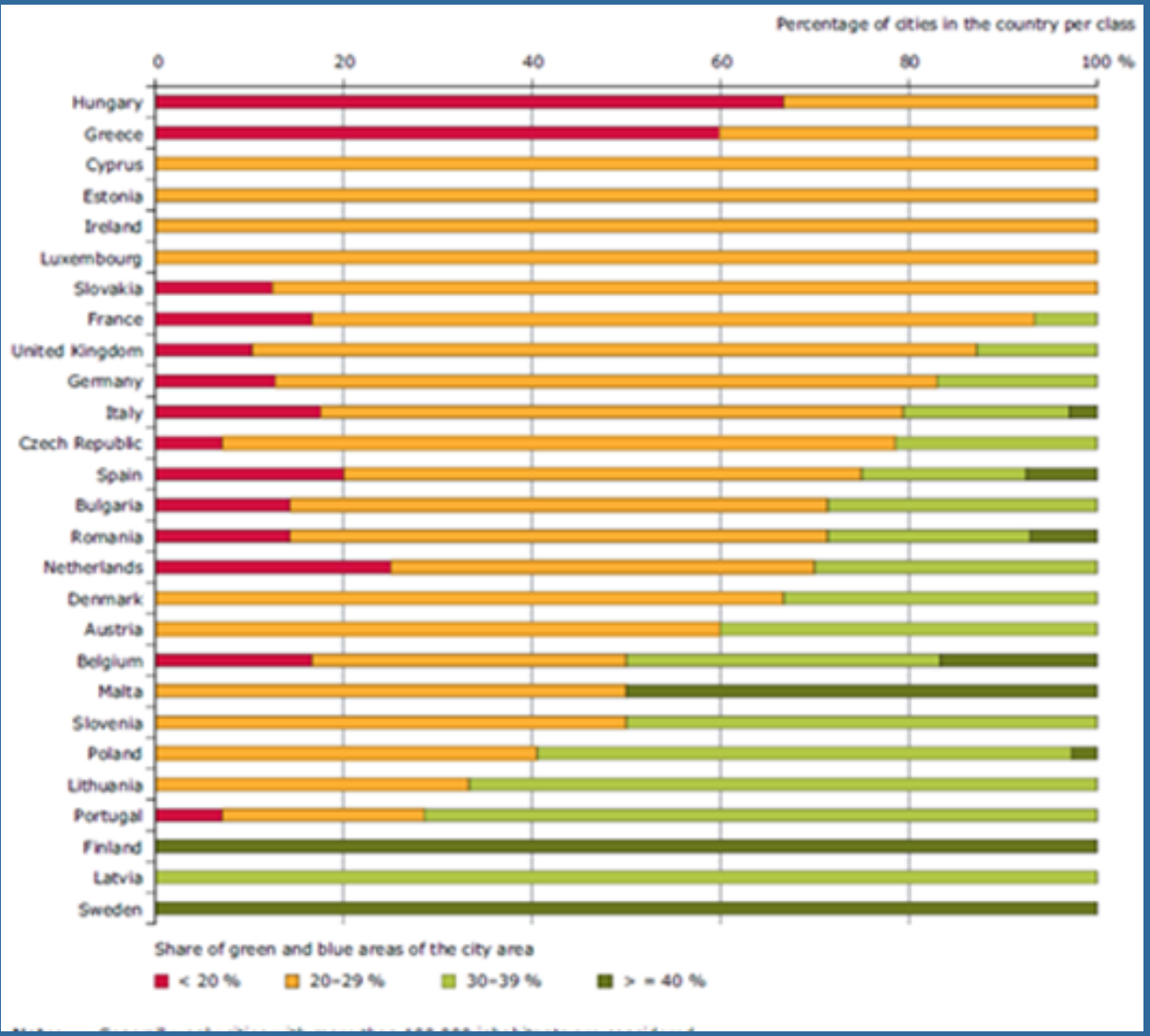
- Utilities and communications
- Roads and paved surfaces
- Water supply, treatment & disposal facilities

Green infrastructure

Multifunctionality

- Recreation and biodiversity,
- Food, timber production
- Water regulation
- Clean air, etc.

Percentage of green and blue areas
Share of cities per class per country

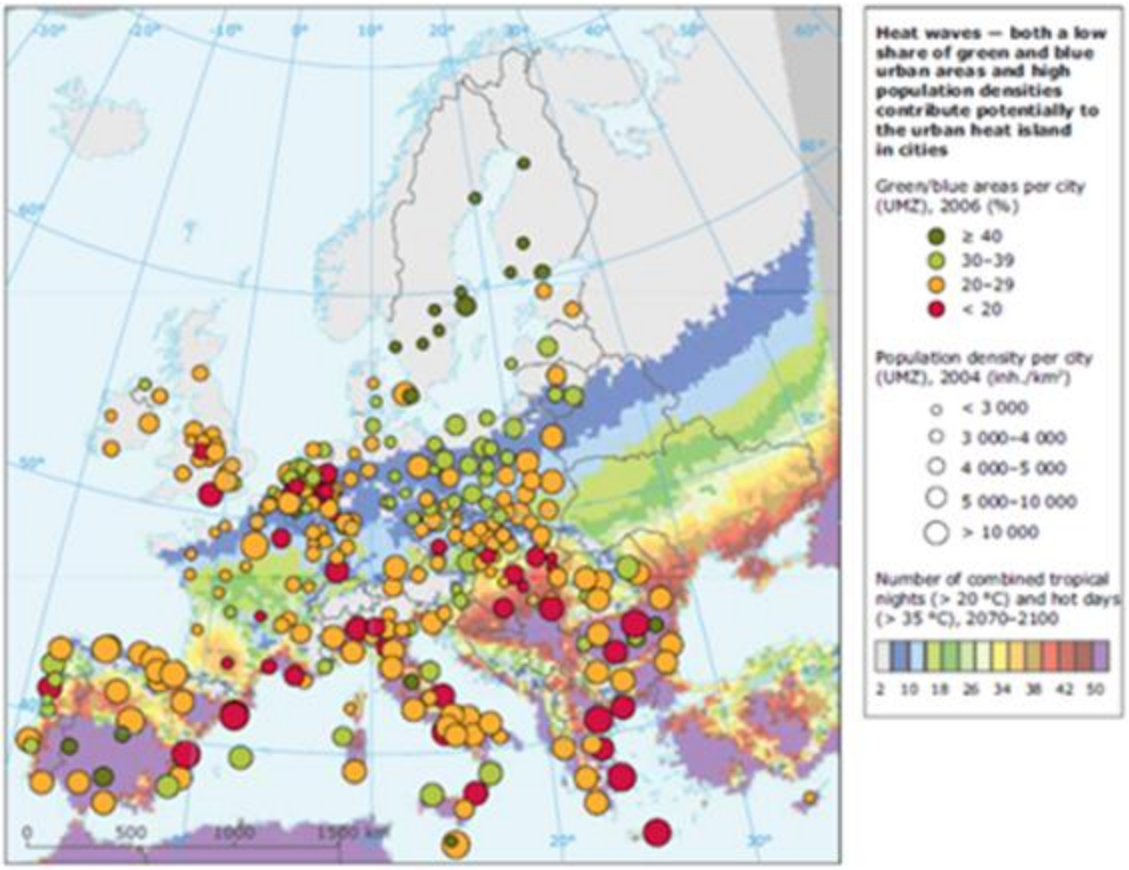


Heteregeonity

Different patterns of cities

Cities of the north / cities of the south

Heat waves



Note: The background map presents the projection for the period 2071-2100. Values for the earlier periods are presented in Map 2.4.

City data for Bulgaria and Ireland are from 2001; the concept of city is defined uniquely by the urban land-use areas within its administrative boundary.

Source: Eurostat, Urban Audit database, 2004; EEA Urban Atlas, 2006.

Low share of green and blue areas

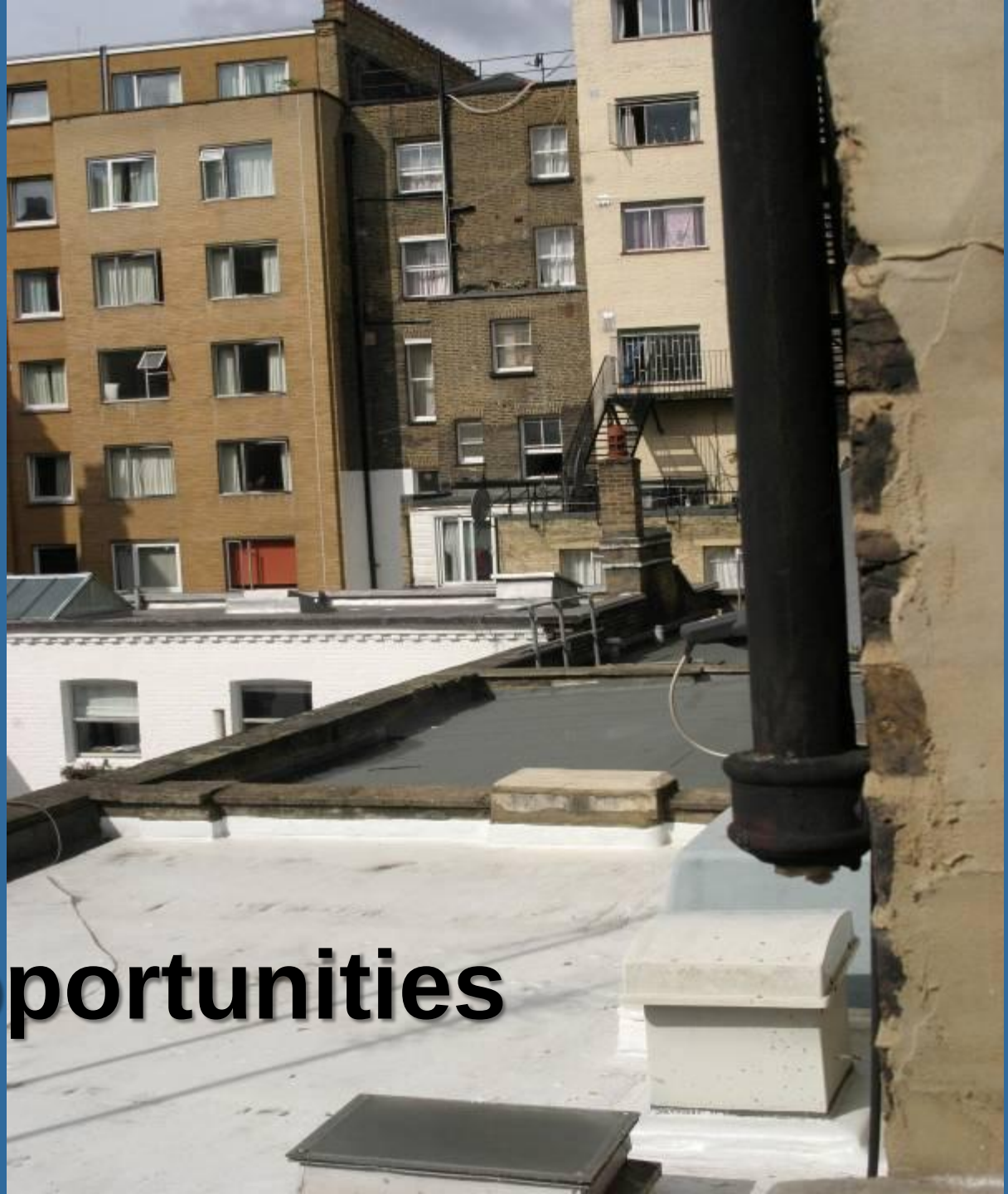
+

High population densities

=> Can contribute to the urban heat island effect in cities

No room ?

Go vertical



opportunities

Main ongoing EEA's studies on urban system

Cities' typology

- **Main objectives**
  - Identification of groups of cities that share similar properties
  - Characterisation of European cities for environmental reporting and statistics
- **Based on**
  - A quantitative and qualitative characterisation of cities
  - A hierarchical systems providing a broad view on cities
- **Time-table**
  - Cities' typology will be achieved in November 2014

Urban sprawl typology

- **Main objectives**
  - Assessment of compactness of the built-up areas and dispersed urban pattern
  - 4 metrics
- **Based on**
  - Method of Federal Office of Spatial Planning in Switzerland at European level
- **Time-table**
  - Calculation end of 2014
  - Publication of a report in 2015

Green infrastructure inside and around cities

- **Main objectives**
  - Characterisation green infrastructure of 400 cities based on 4 metrics
  - Inside and outside (50 km)
- **Based on**
  - Corilis - Method developed by EEA and ETC
- **Time-table**
  - Calculation done in 2013
  - Analysis of green infrastructure in the light of cities' typology and urban sprawl typology
  - Publication of a report in 2015

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