



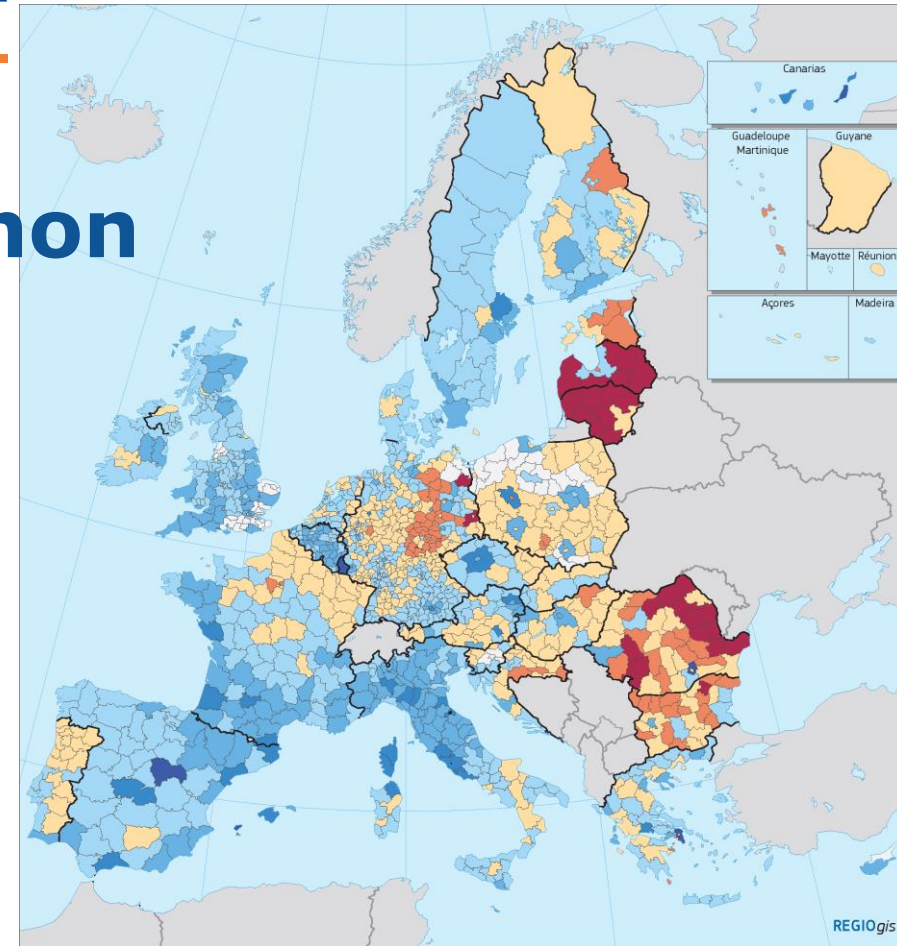
# How geo-referenced and regional data on migration can support better policy making

Lewis Dijkstra

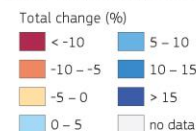
Head of the Economic Analysis sector

# Migration is not a national phenomenon

- *Big differences within countries*
- *A shift to (capital) cities and their suburbs from rural regions in EU-13*
- *A shift from EU-13 to EU-15, but also within EU-15*

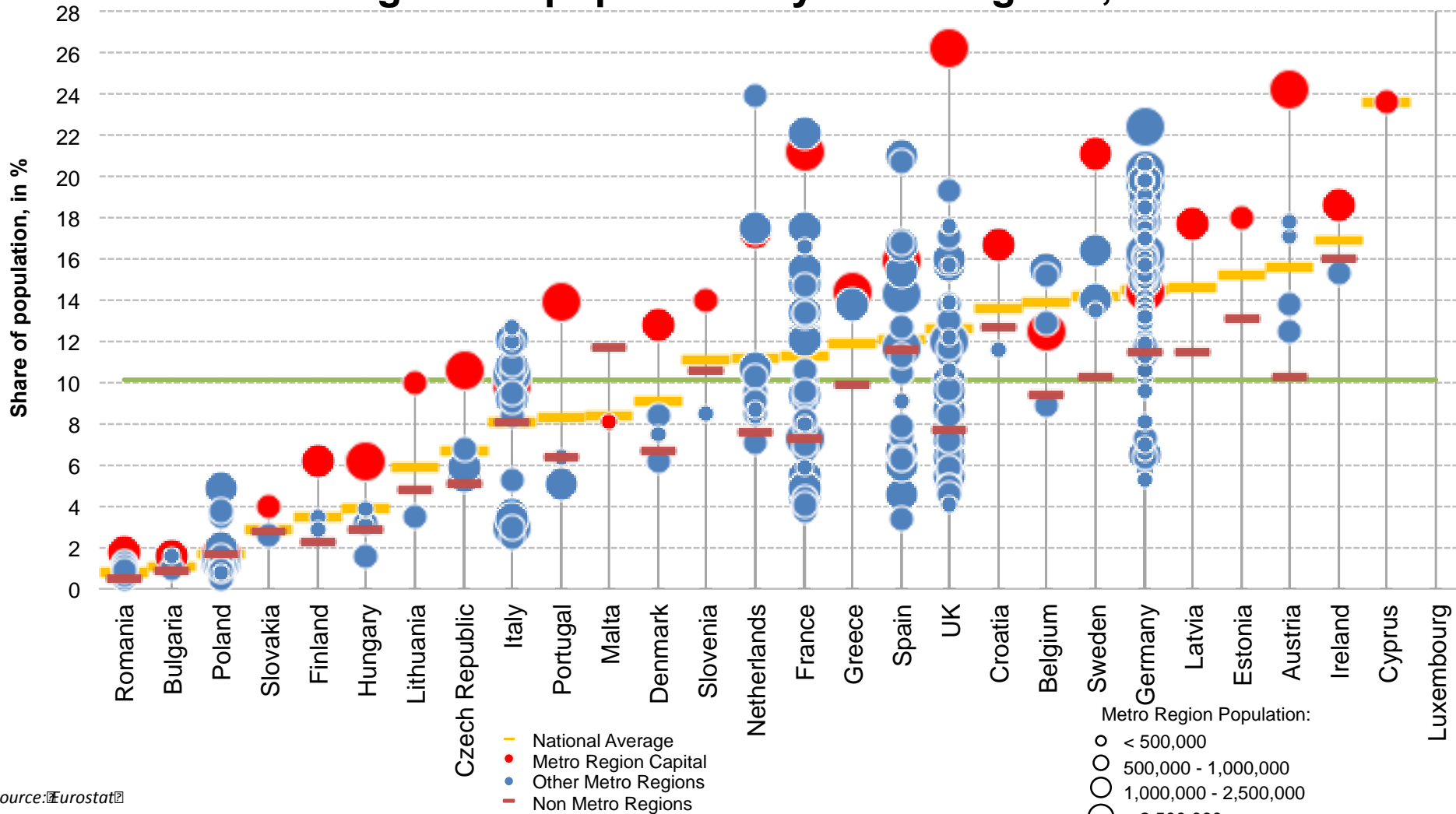


Map 2.2 Net migration in NUTS 3 regions, 2005–2015



EU-28 = 2.18  
 DK, DE, DED, DEE: data before 2007 was extrapolated.  
 PL52, UKD3, UKI3, UKI4, UKI5, UKI6, UKI7: NUTS 2  
 Source: Eurostat; DG REGIO

## Foreign-born population by metro regions, 2011



# A need for a finer grained analysis

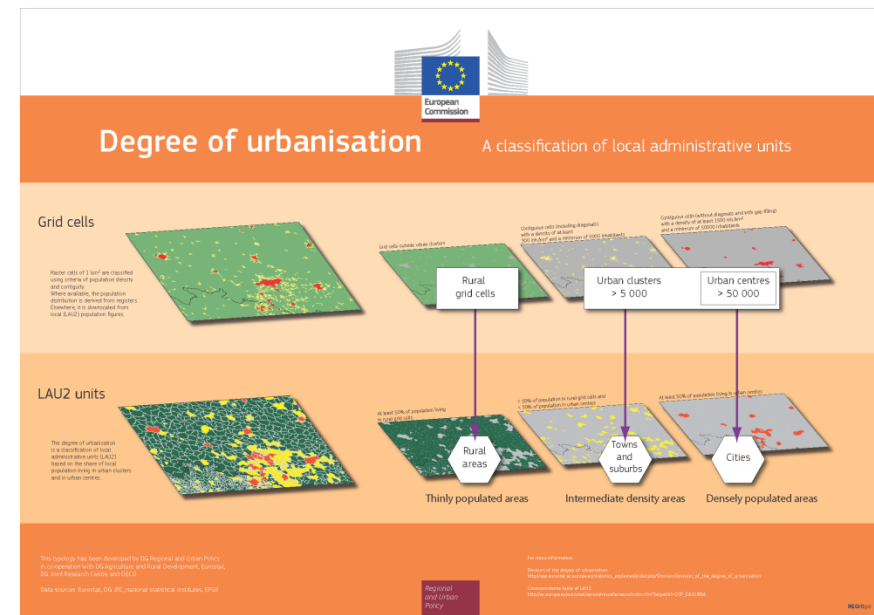
- *NUTS-3 regions still cover a wide diversity of territories*
- *Analysis by degree of urbanisation*
- *Analysis per city and per functional urban area*
- *Analysis at the neighbourhood level*

# Degree of urbanisation

- *Typology based on a 1 km<sup>2</sup> population grid*
- *Has three grid concepts*
  - 1. Urban centre**
  - 2. Urban cluster**
  - 3. Rural grid cell**
- *Translates these into three types of municipalities*
  - 1. Cities**
  - 2. Towns and suburbs**
  - 3. Rural areas**

# Uses of the degree of urbanisation

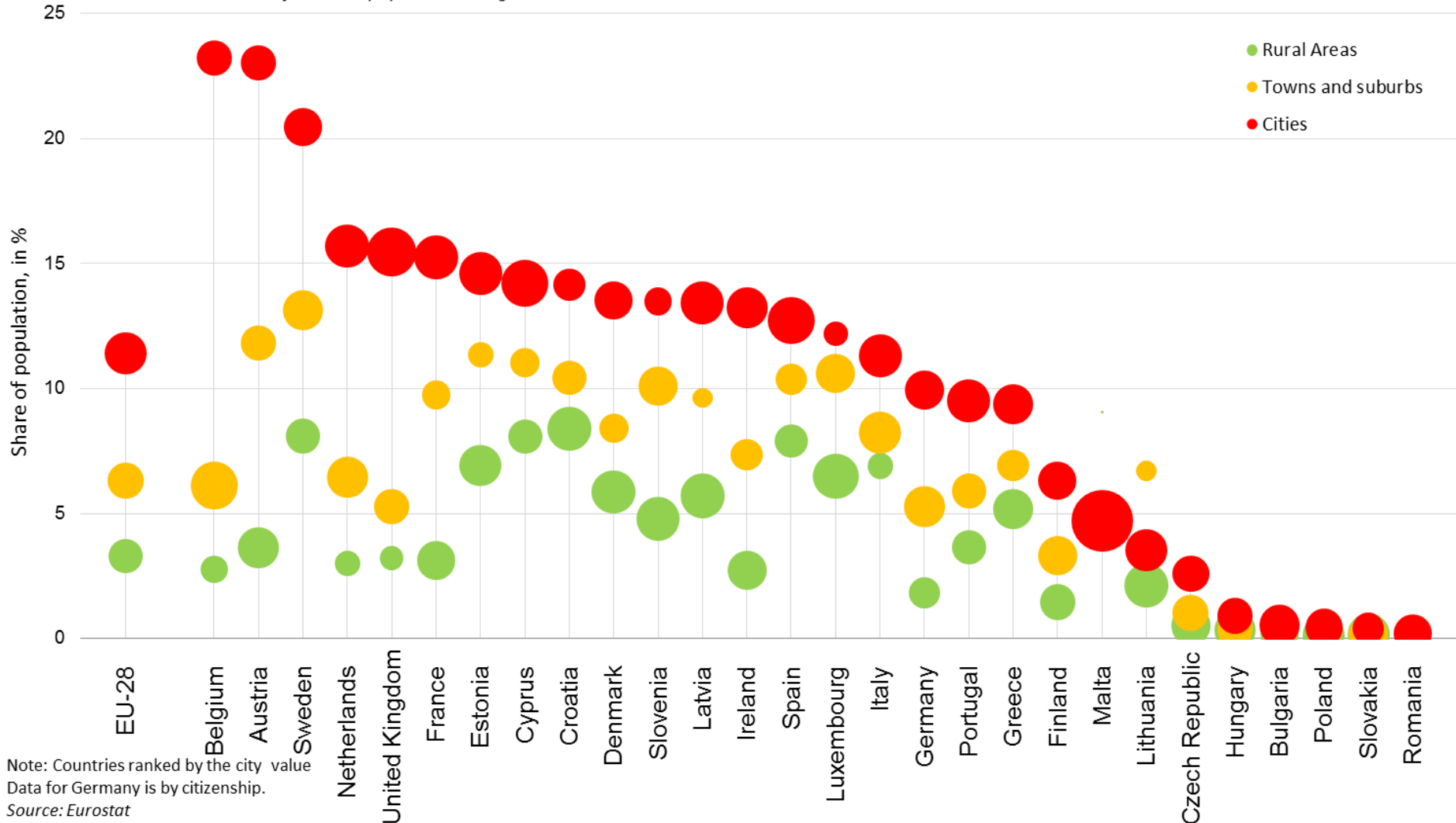
- *More than 100 indicators published by Eurostat*
  - **Demographic**
  - **Health**
  - **Poverty**
  - **Education**
  - **Employment**
- *Increasing use by EEA, JRC, etc.*





## Working age population (20-64) born outside the EU by degree of urbanisation, 2014

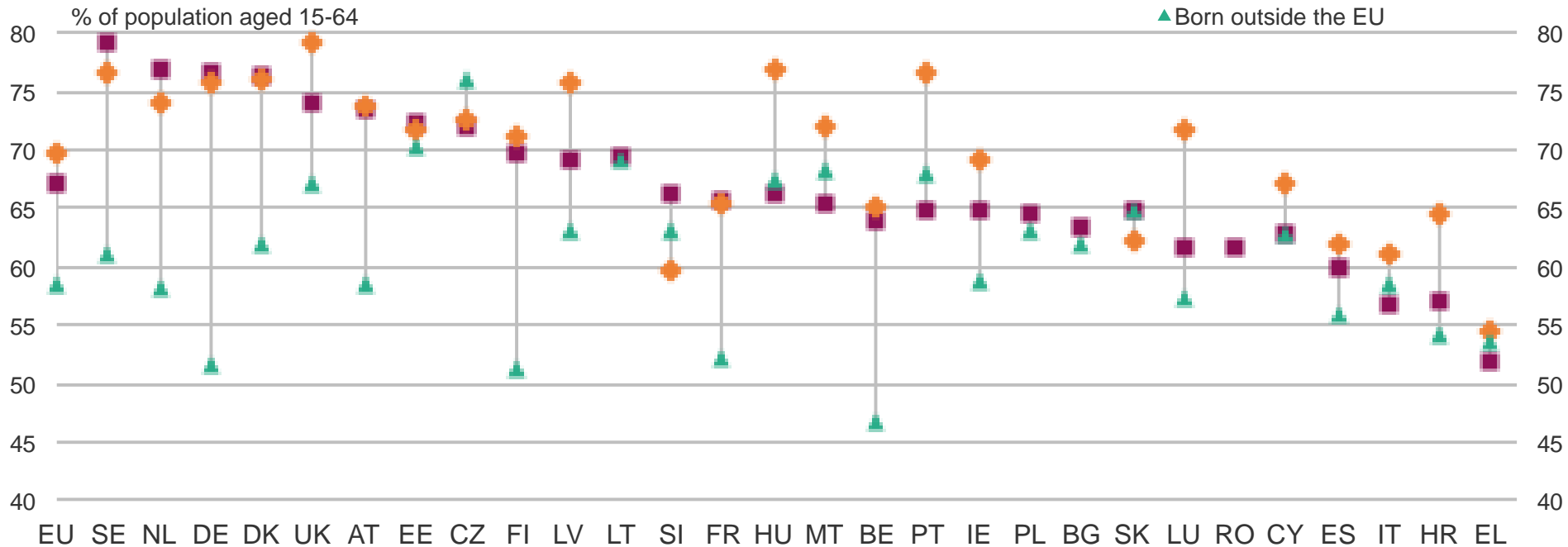
Bubble size is the share of national population living in the area



Note: Countries ranked by the city value  
Data for Germany is by citizenship.  
Source: Eurostat

## Figure 2.4 Employment rate by country of birth (15-64), 2016

- Born in the country they live in
- ◆ Born in a different EU-28 country
- ▲ Born outside the EU

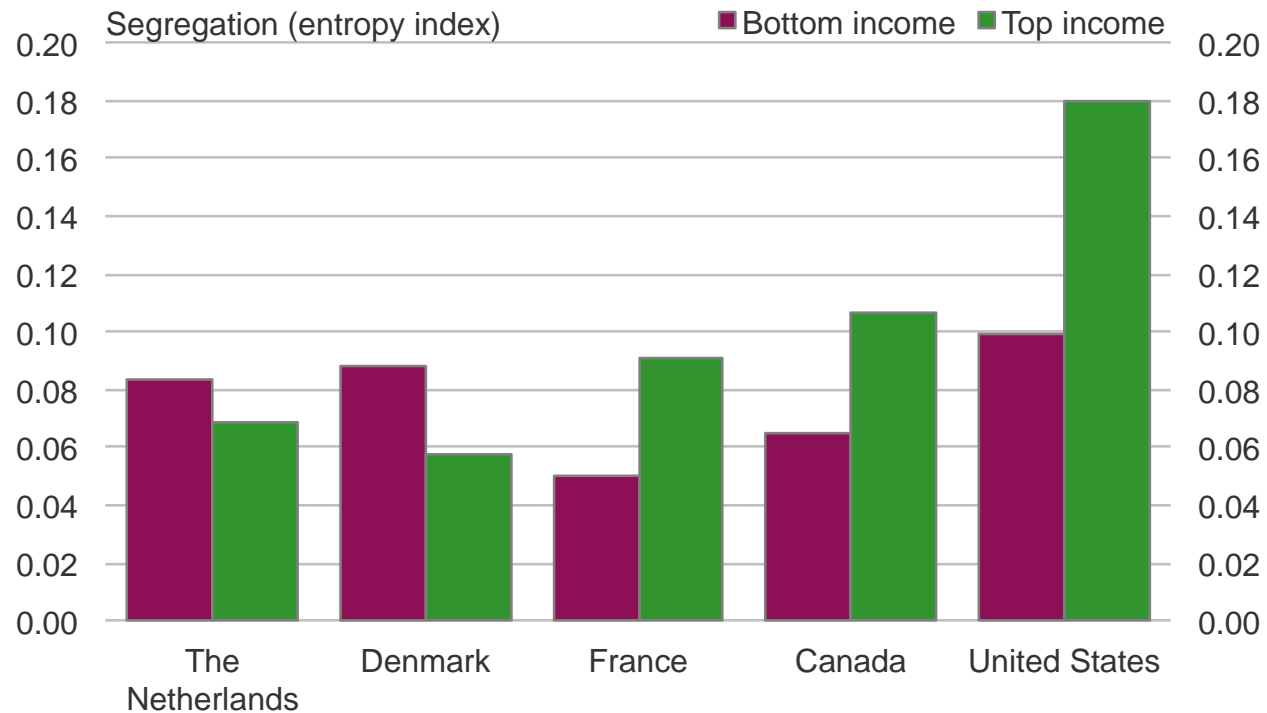


DE: employment rate by country of citizenship. Figures with a low reliability were not included.

Source: Eurostat



**Figure 2.17 Income concentration in cities by income group, 2014 or latest available year**



Higher values indicate higher concentrations

# Why the grid is the best

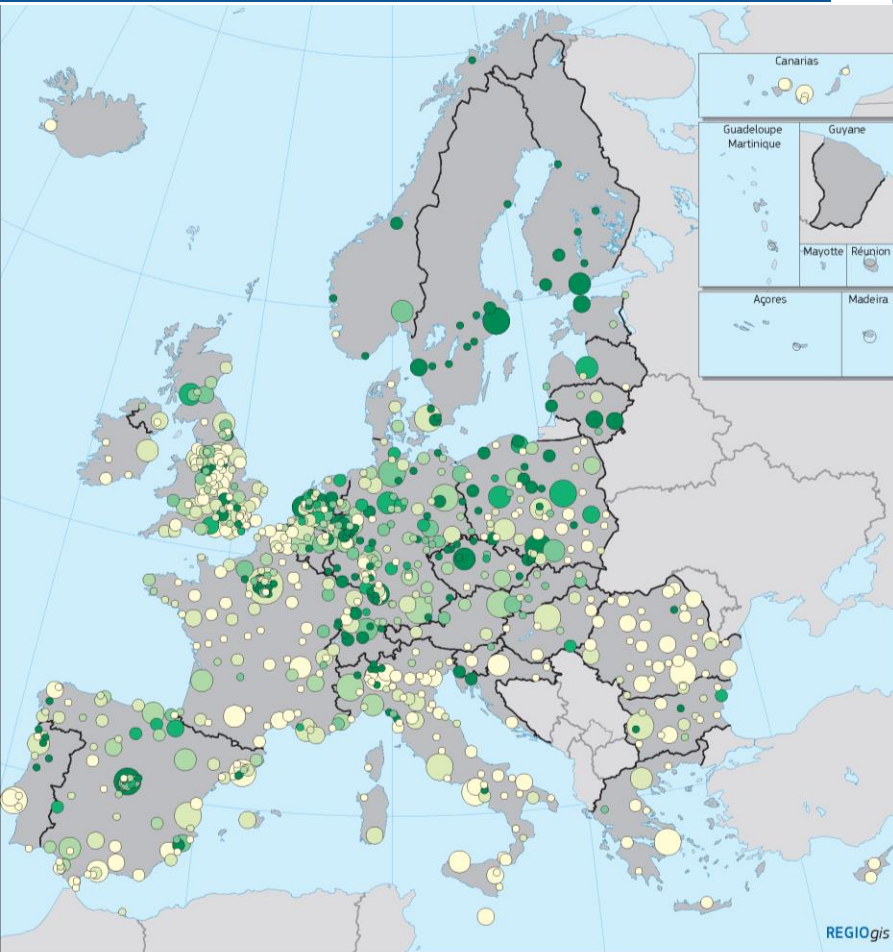
- *Fixed boundaries*
  - **the EU has over 130 000 local administrative units and boundary changes occur every year. As a result, changes over time are difficult to analyse**
- *Each grid cell has same size and shape*
  - **Units with varying shapes and sizes make analysis of accessibility, proximity, segregation and density far less reliable**

# Population grid

- *2006: a mixture of population disaggregation and point-based (bottom-up) grids, total population*
- *2011: almost purely bottom-up grids, total population*
- *2021: bottom-up grids, total population and breakdowns by:*
  - **Sex, Age, Employment**
  - **Country of birth, Citizenship (grouped)**
  - **Years at current address**
- *Annual updates?*
- *Higher resolution in urban areas?*

# UN Sustainable Development Goals

- *Request a focus on women, children, persons with disabilities and older persons*
- *Include multiple indicators that will require geospatial information: access to public transport, access to green space...*
- *Data should be collected per city*



European Commission

REGIOgis

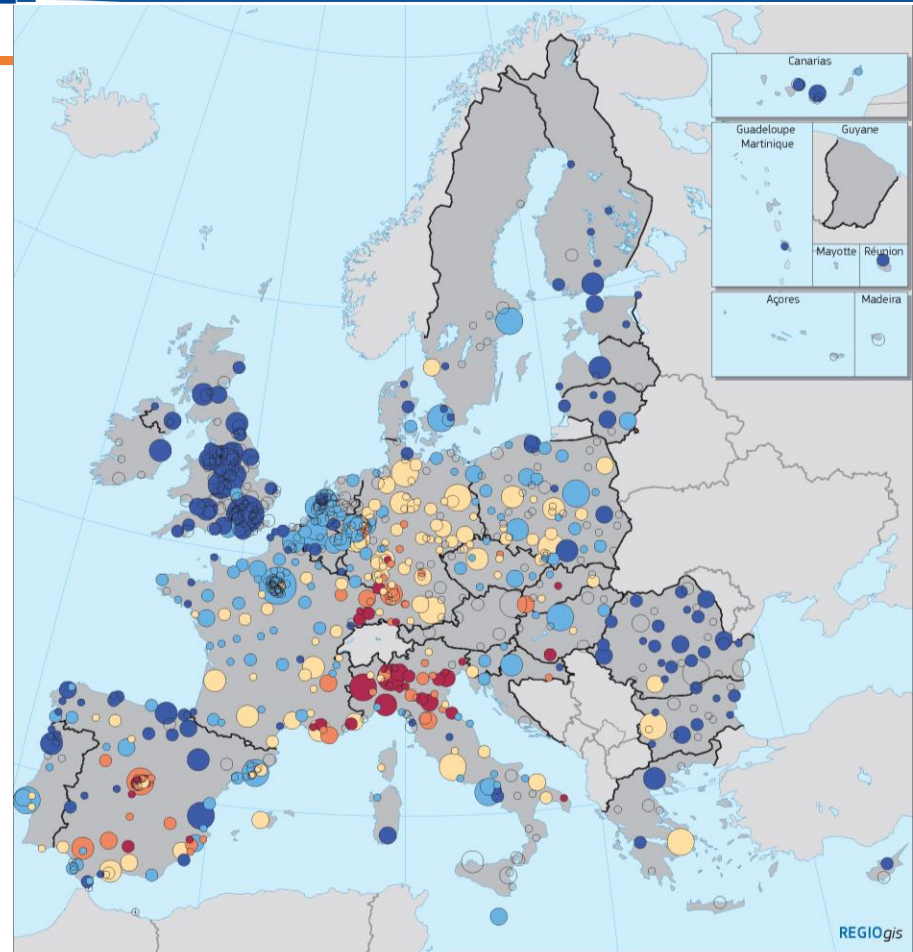
Map 3.10 Access to green urban areas in cities, 2012

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li><span style="color: yellow;">●</span> &lt; 10</li> <li><span style="color: lightgreen;">●</span> 10 – 15</li> <li><span style="color: green;">●</span> 15 – 20</li> <li><span style="color: forestgreen;">●</span> 20 – 25</li> <li><span style="color: darkgreen;">●</span> 25 – 30</li> <li><span style="color: darkgreen;">●</span> &gt;= 30</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> no data</li> </ul> | <ul style="list-style-type: none"> <li><span style="border: 1px solid black; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> &lt; 100 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> 100 000 – 250 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: inline-block;"></span> 250 000 – 500 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 25px; height: 25px; display: inline-block;"></span> 500 000 – 1 000 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: inline-block;"></span> 1 000 000 – 5 000 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: inline-block;"></span> &gt;= 5 000 000</li> </ul> |
|---|---|

Population-weighted median area of green urban areas and forests that can be reached within 10 minutes walking time.  
Source: Poelman 2016



Regional and urban Policy



Map 3.9 Concentration of ground-level ozone (O<sub>3</sub>) in cities, 2014

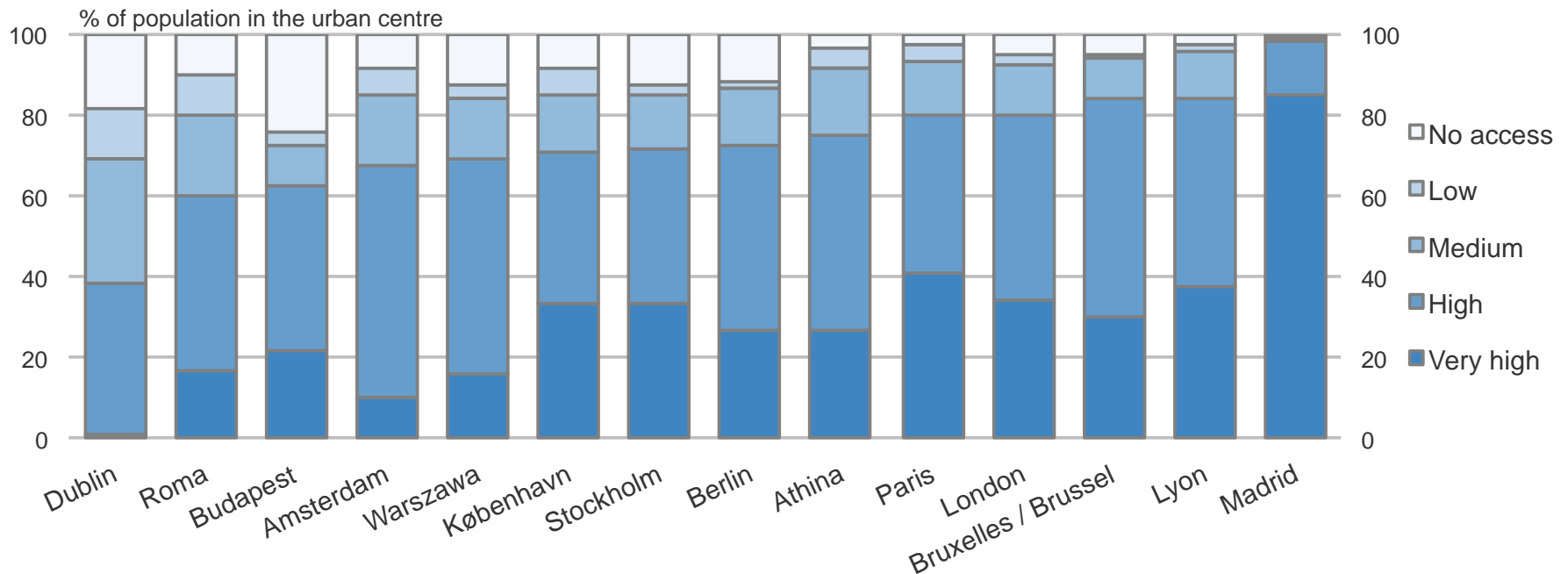
- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> &lt; 2</li> <li><span style="color: blue;">●</span> 2 – 8</li> <li><span style="color: yellow;">●</span> 8 – 15</li> <li><span style="color: orange;">●</span> 15 – 25</li> <li><span style="color: red;">●</span> &gt;= 25</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> No data</li> </ul> | <ul style="list-style-type: none"> <li><span style="border: 1px solid black; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> &lt; 100 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 15px; height: 15px; display: inline-block;"></span> 100 000 – 250 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: inline-block;"></span> 250 000 – 500 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 25px; height: 25px; display: inline-block;"></span> 500 000 – 1 000 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: inline-block;"></span> 1 000 000 – 5 000 000</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: inline-block;"></span> &gt;= 5 000 000</li> </ul> |
|---|---|

Average recorded by measuring stations within city boundaries.  
EU target value of 120 µg/m<sup>3</sup> should not be exceeded more than 25 days per year (averaged over 3 years).  
Source: EEA, DG REGIO



# Access to public transport

**Figure 3.9 Access to public transport in large European cities, 2014-2016**



Source: Poelman and Dijkstra 2015

# Matching with other geo-referenced data

- *Public services:*
  - **Public Transport**
  - **Health,**
  - **Education**
  - **Employment services...**
- *Pollution data*
- *Urban green space*
- *Housing costs or quality*
- *Crime data*

# Conclusion

- *To capture migration a sub-national lens is needed. Policy action is often taken at the regional or local level*
- *NUTS-3 region data is important*
- *Local data is needed, but boundary changes are frequent.*
- *The grid offers many advantages and the opportunity to match with other geo-referenced data*