

EUROPEAN CITY STATISTICS - PROSPECTS FOR THE FUTURE

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SmartStatistics4SmartCities

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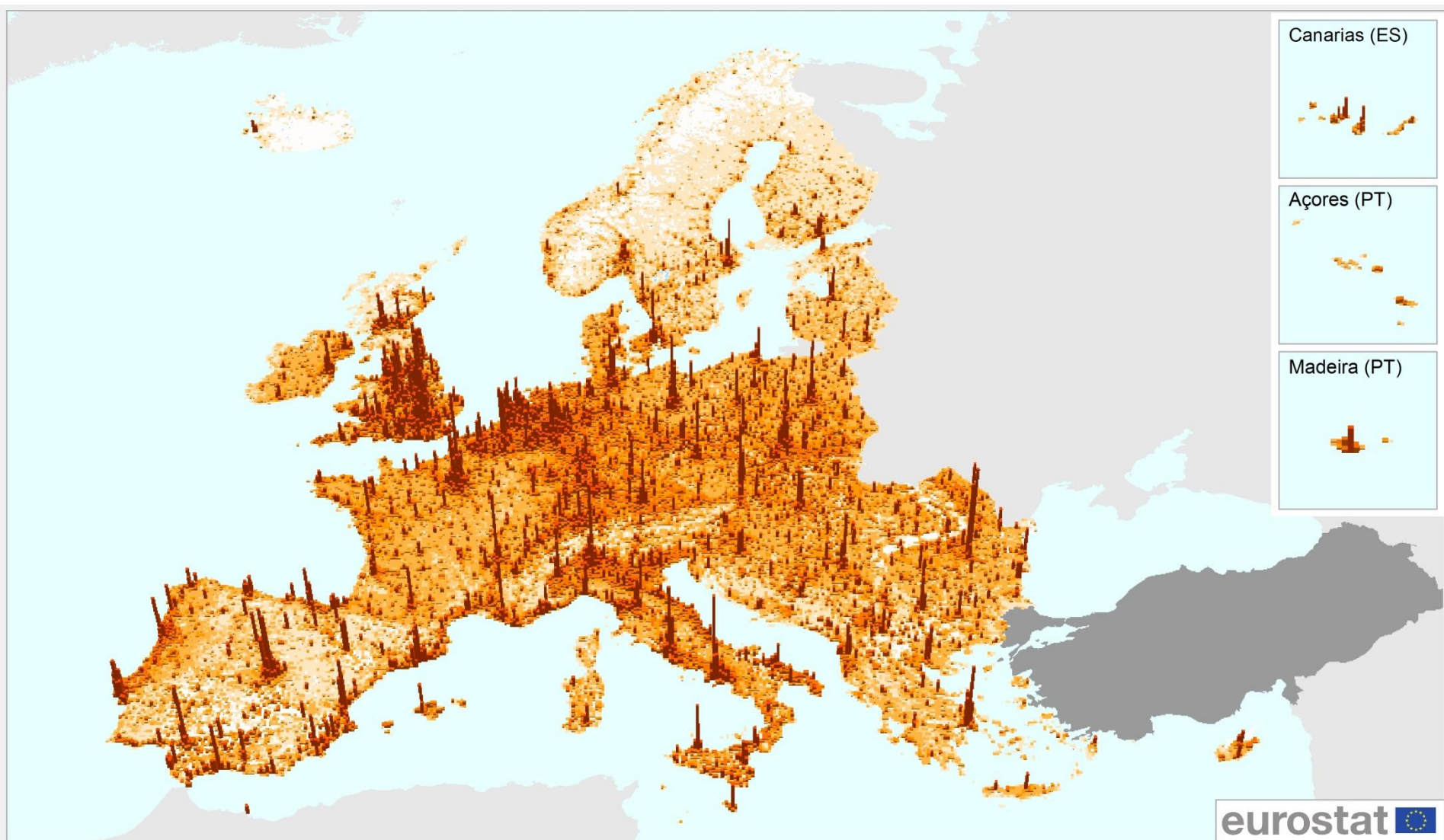
European
Commission

... the most dense 1 km² grid cell Hospitalet de Llobregat

Barcelona

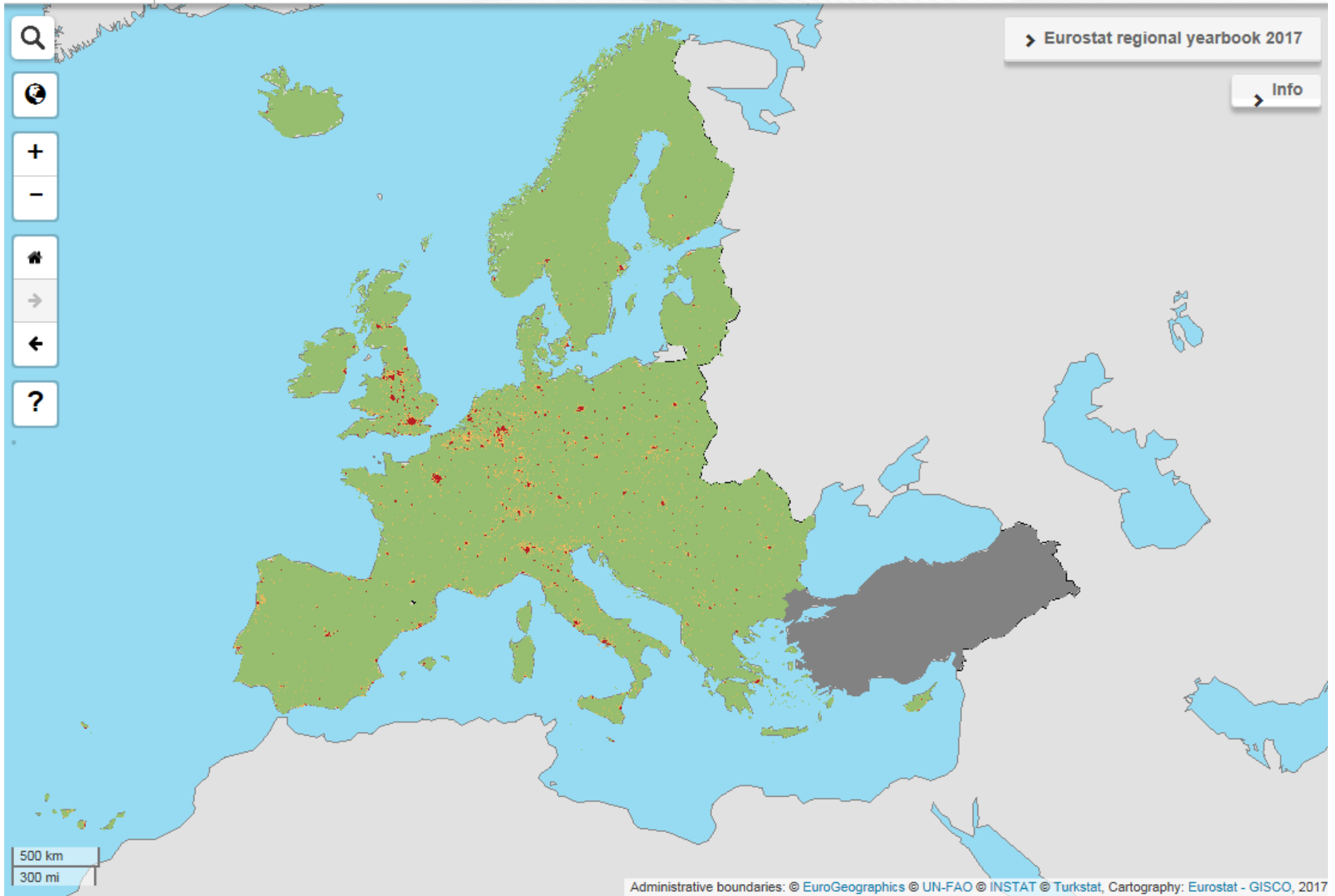


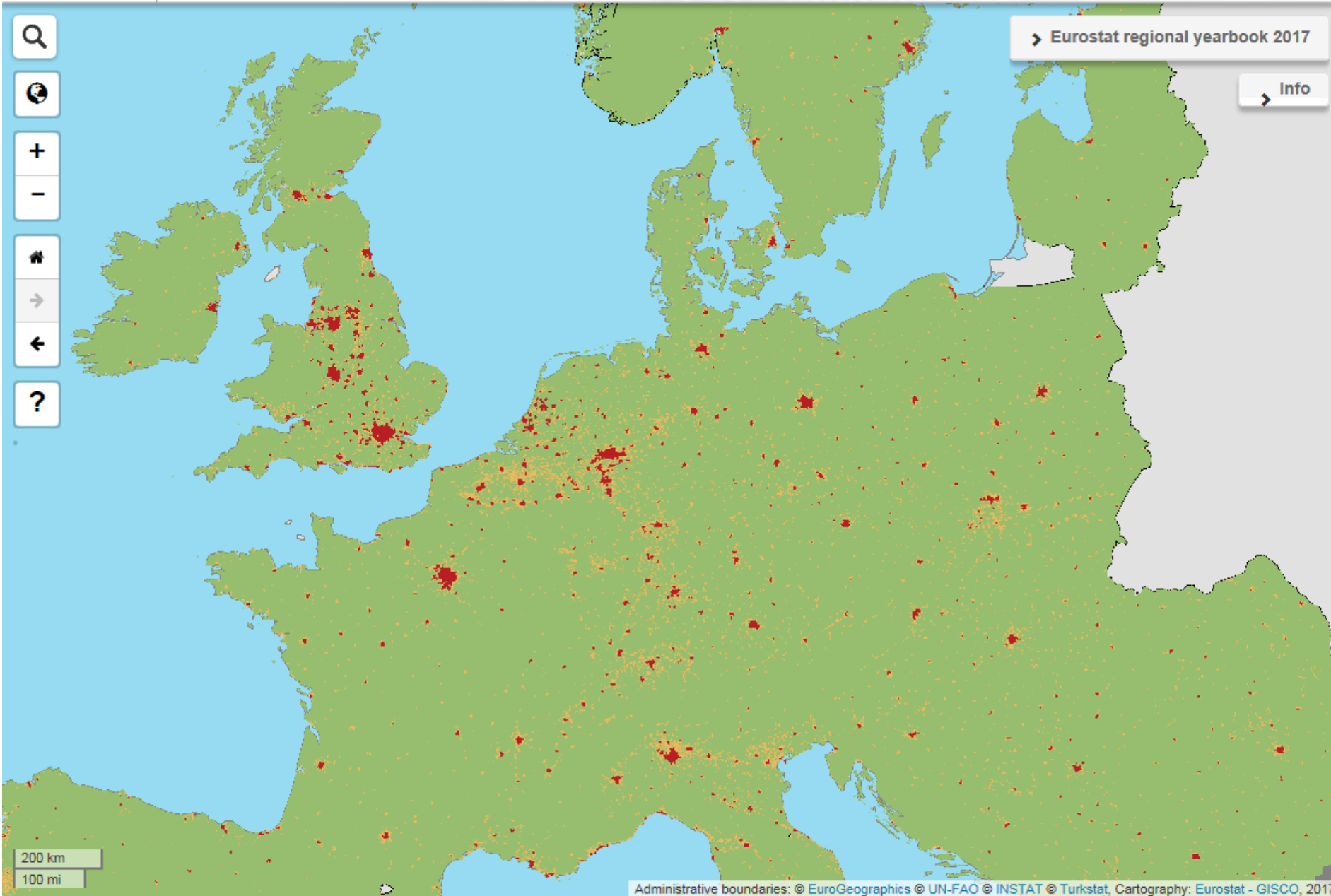
Population density based on the GEOSTAT population grid, 2011



(number of inhabitants / 10 x 10 km)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 10/2017





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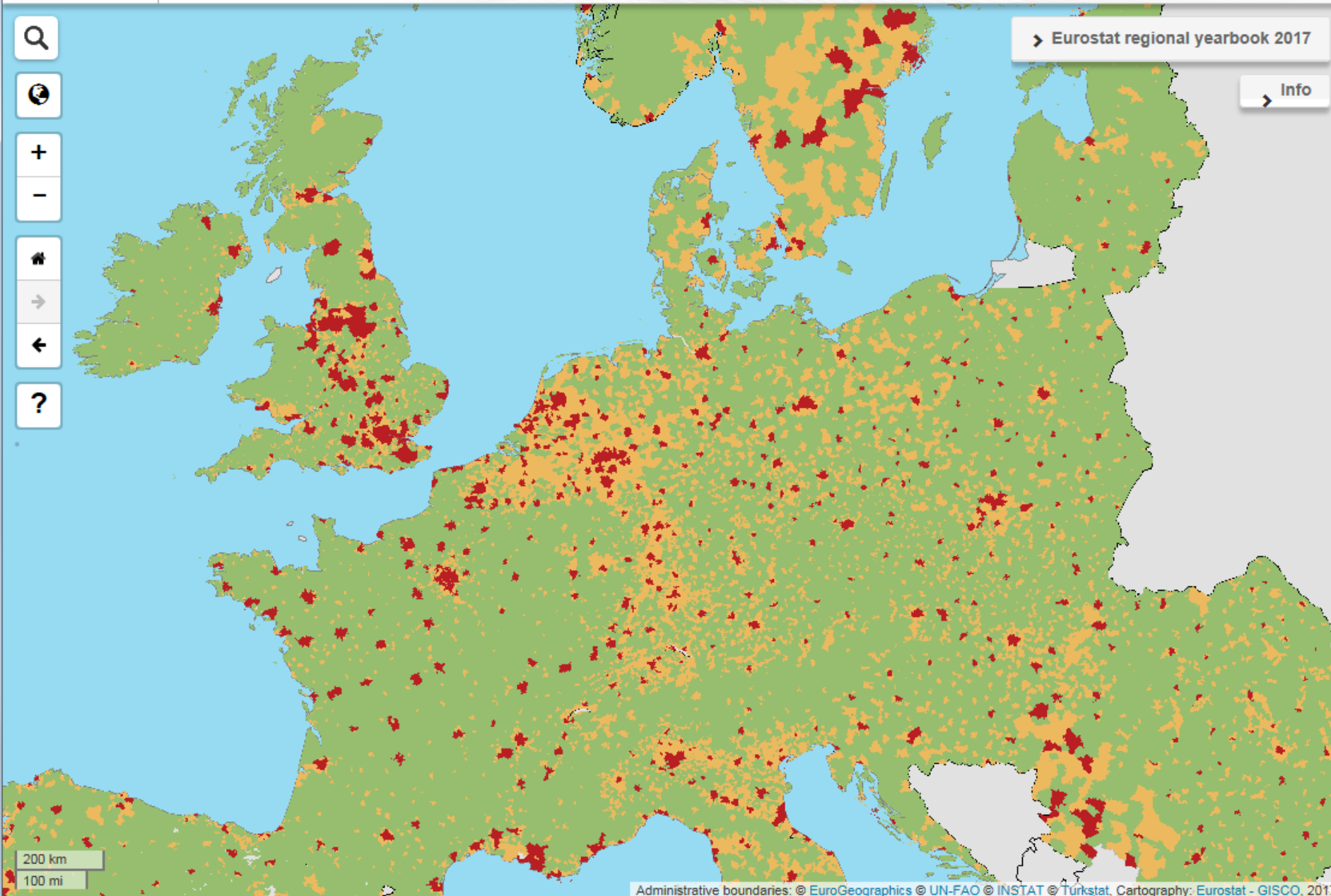
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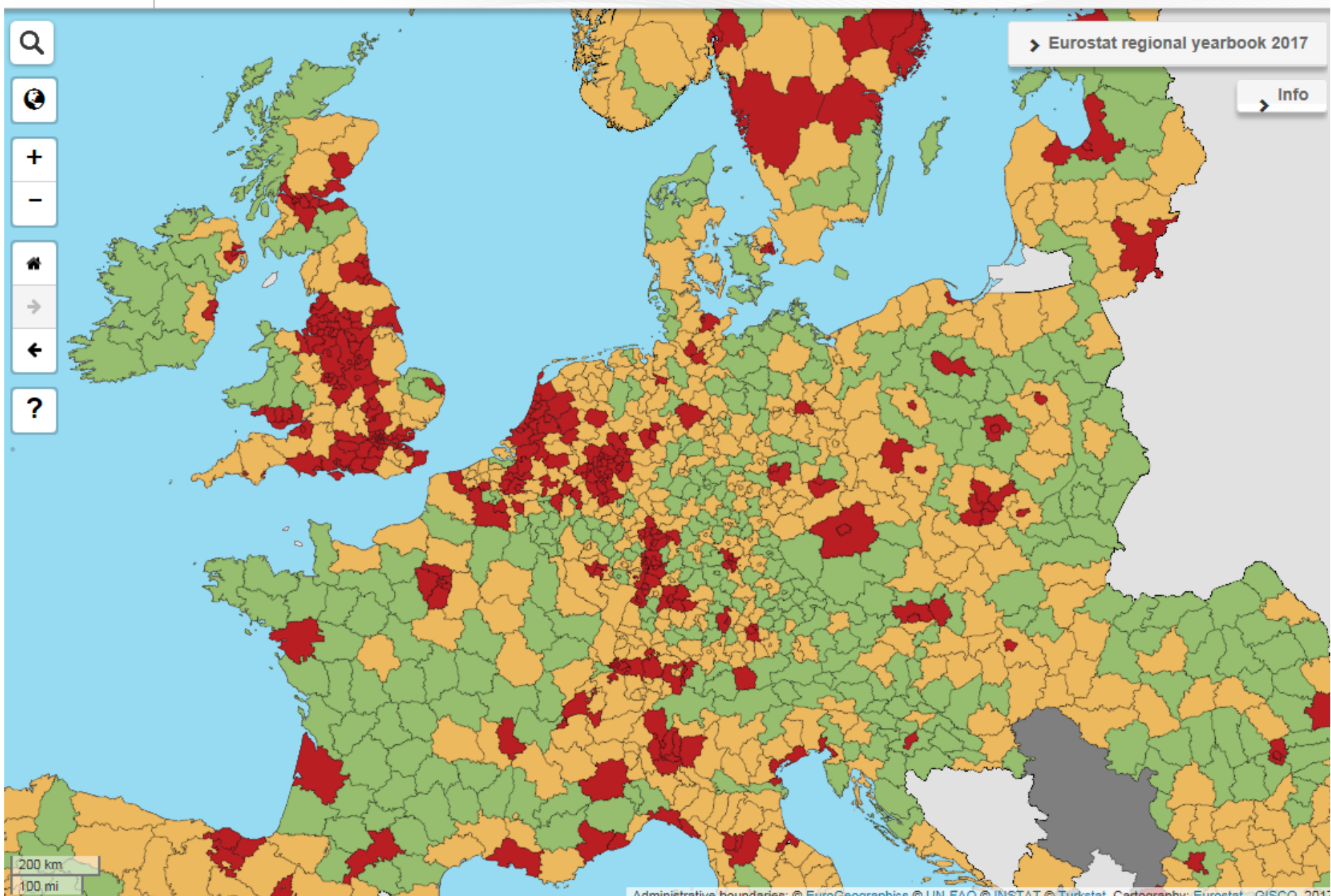
➤ Eurostat regional yearbook 2017

➤ Info



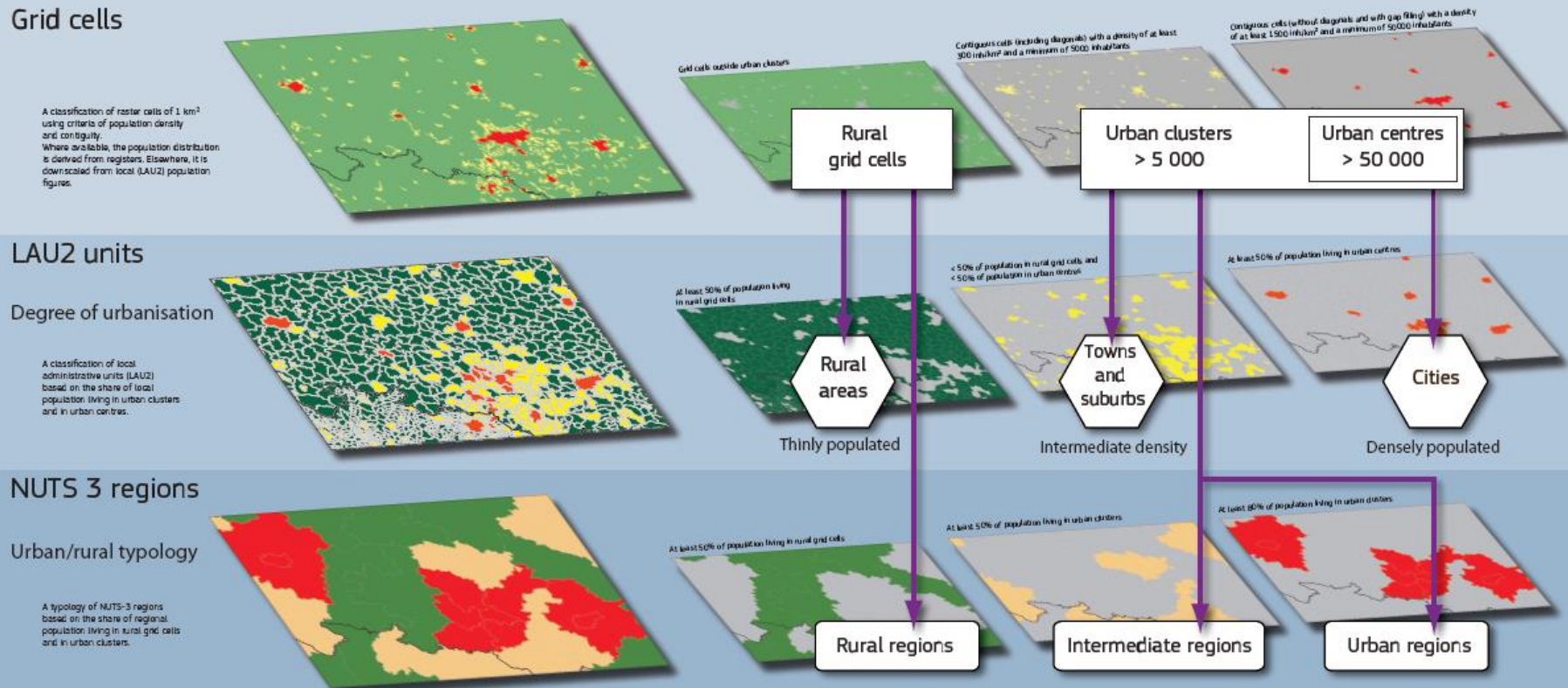
200 km
100 mi

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT © Türkstat, Cartography: Eurostat - GISCO, 2017



A system of urban/rural typologies

Three levels of urban/rural classification based on population distribution



These typologies have been developed by DG Regional and Urban Policy in co-operation with DG Agriculture and Rural Development, Eurostat, DG Joint Research Centre and OECD.

Data sources: Eurostat, DG JRC, national statistical institutes, EFES

Regional and Urban Policy

For more information:

- A revised urban-rural typology (NUTS3 level): http://app.eurostat.ec.europa.eu/portals/portal/product_details/publication_product_code=KS-HA-10-001-15
- A revised degree of urbanisation classification (LAU2 level): <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&code=ks-ha-10-001-15>

Characteristics of the definition

- Population based definition
- Starts from the population grid
 - *Avoids distortions caused by large variations in the area of administrative territorial units*
- Uses three categories at three spatial levels
- Has a legal recognition: *Regulation of the European Parliament and of the Council amending Regulation (EC) No 1059/2003 as regards the territorial typologies*
- Enables the collection, compilation and dissemination of harmonised statistics
- Allows better targeted policy-making at EU level

Prospects for the future

- **Use the harmonised and legally recognised statistical territorial definitions (grid, city, town and suburbs, etc.) to produce more spatially disaggregated statistics**



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Your key to European statistics

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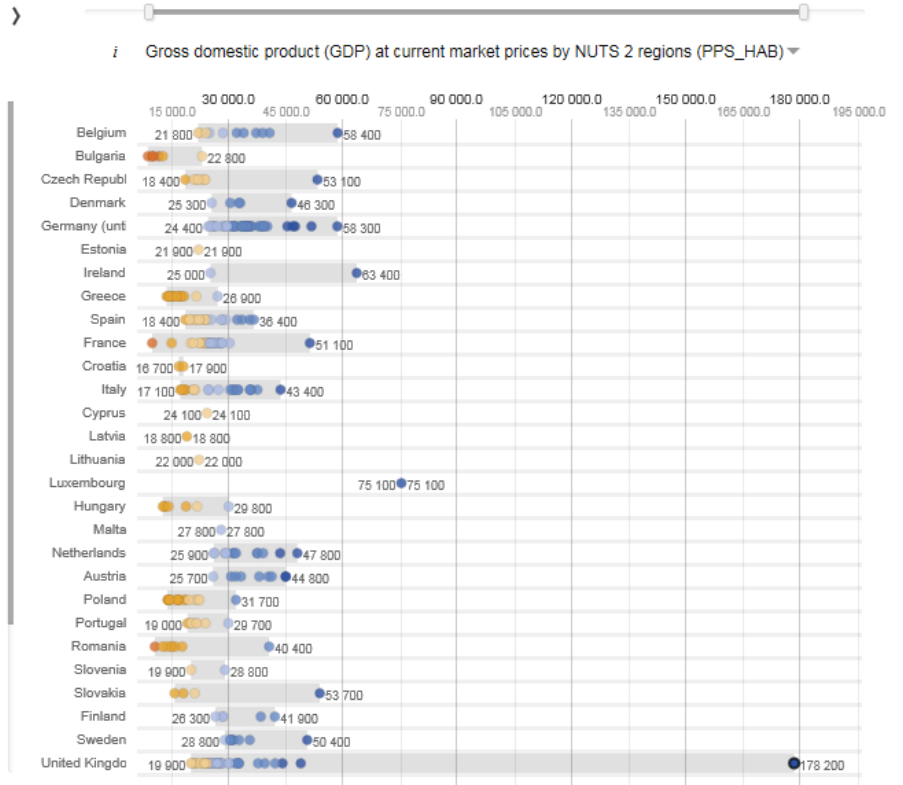
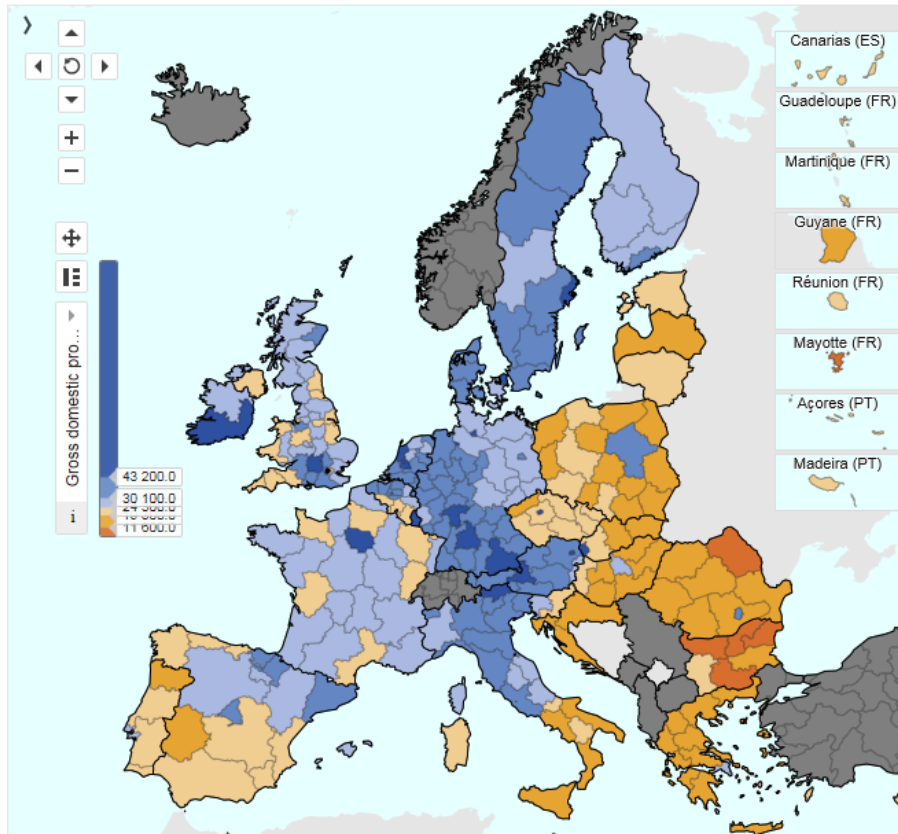
European Commission > Eurostat > Regions and cities > Regions and Cities Illustrated (RCI)

Regions | Cities | Metropolitan | Urban-rural | Degree of urbanisation | Border | Coastal | Island | Mountain | Outermost

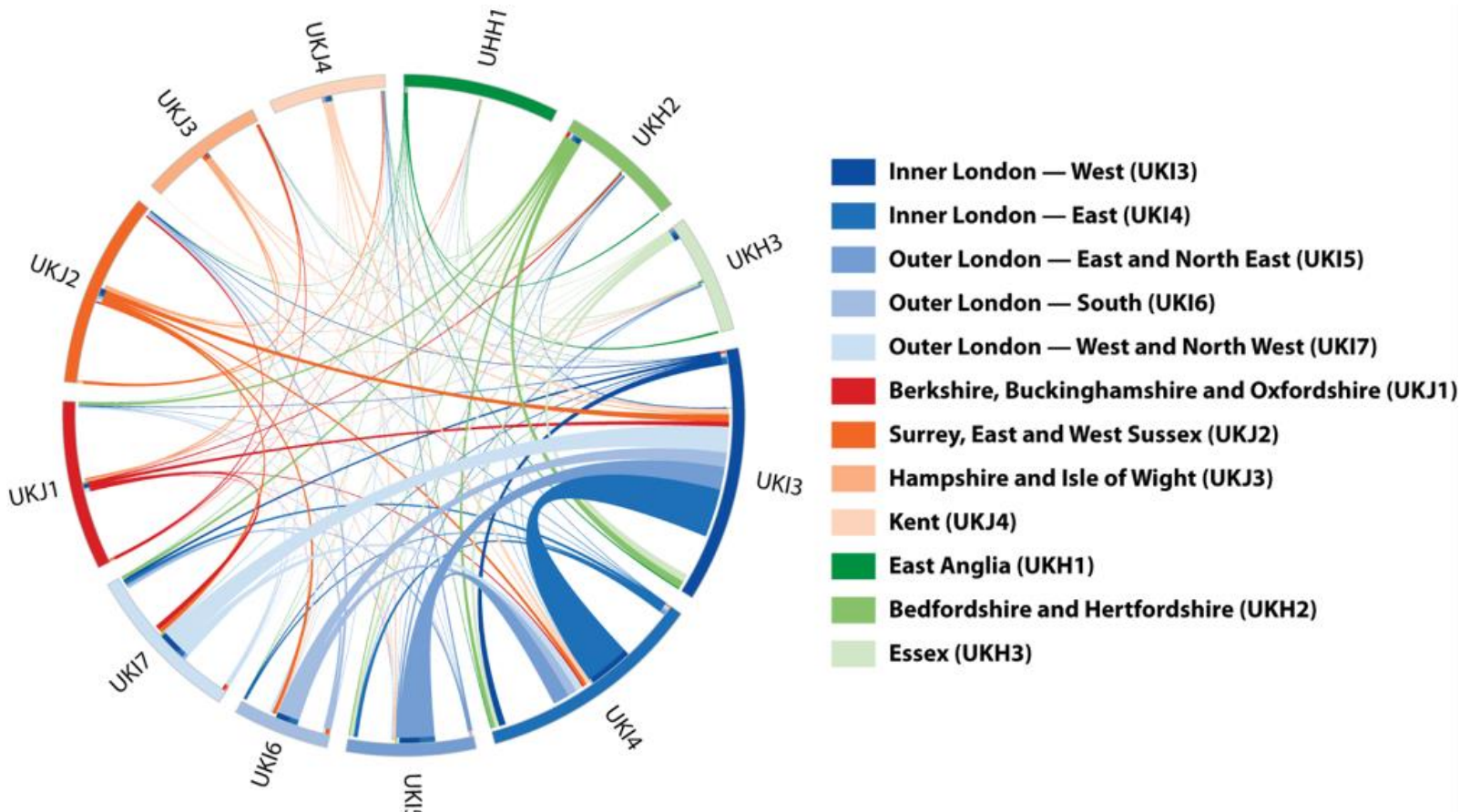
Statistical domains
Economy

Geographical level
 NUTS 1 NUTS 2 NUTS 3

Distribution plot | Scatter plot | Bar chart | Data table



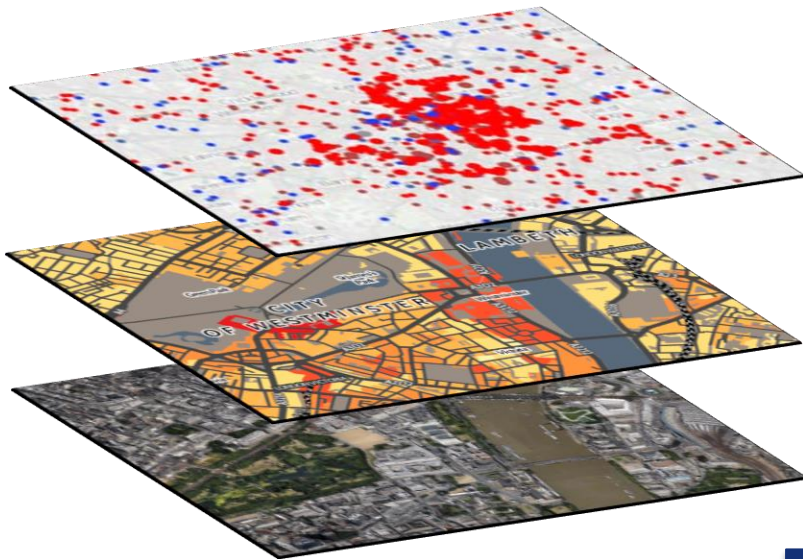
Commuter flows of London



Prospects for the future

- **Complement existing territorial classifications with more flexible, more functional statistical geography**

Data sources for city statistics

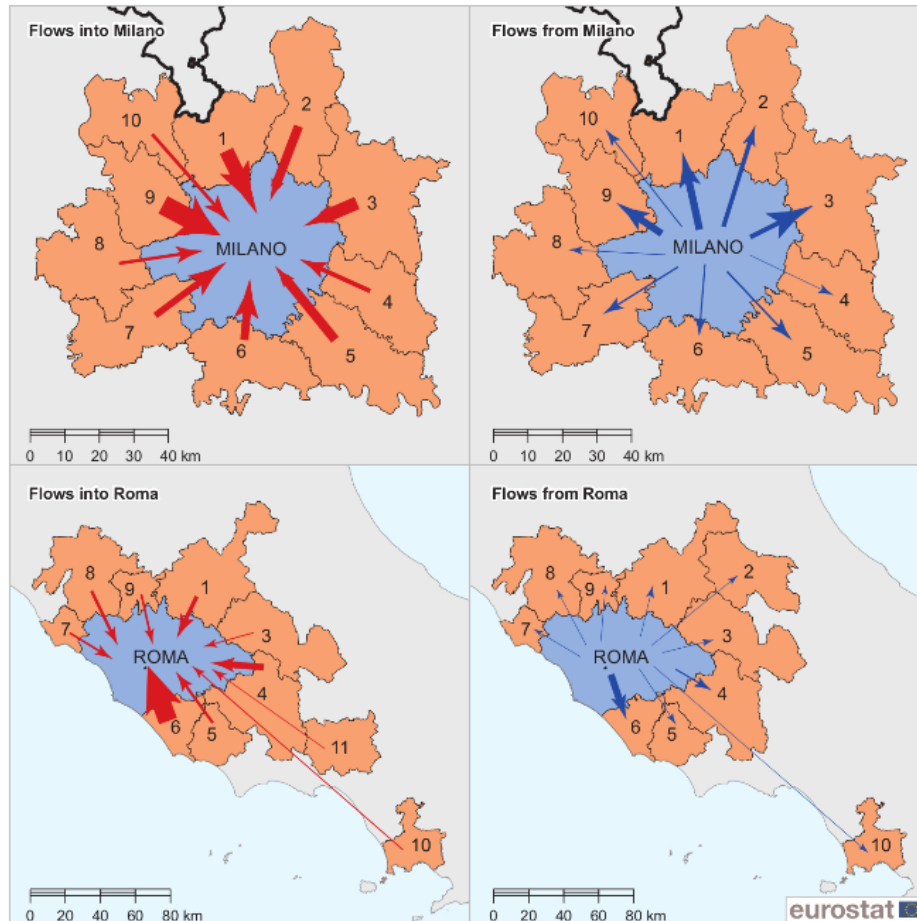


Survey data

Admin data

"Real world"

Commuter flows of Milano and Rome

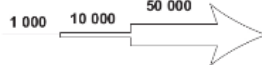


Cartography: Eurostat — GISCO, 03/2016

Administrative boundaries: © EuroGeographics © UN-FAO

Milano / Roma
 Surrounding labour market areas

Number of persons

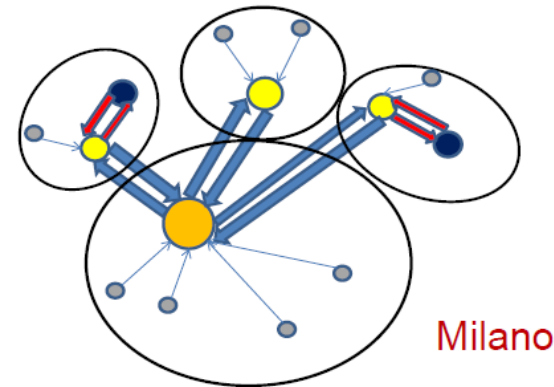


Cities surrounding Milano

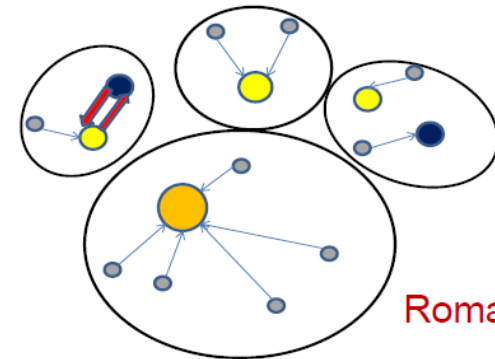
- 1: Como
- 2: Lecco
- 3: Bergamo
- 4: Crema
- 5: Lodi
- 6: Pavia
- 7: Vigevano
- 8: Novara
- 9: Busto Arsizio
- 10: Varese

Cities surrounding Roma

- 1: Rieti
- 2: L'Aquila
- 3: Avezzano
- 4: Frosinone
- 5: Latina
- 6: Pomezia
- 7: Civitavecchia
- 8: Viterbo
- 9: Civita castellana
- 10: Napoli
- 11: Cassino



Milano



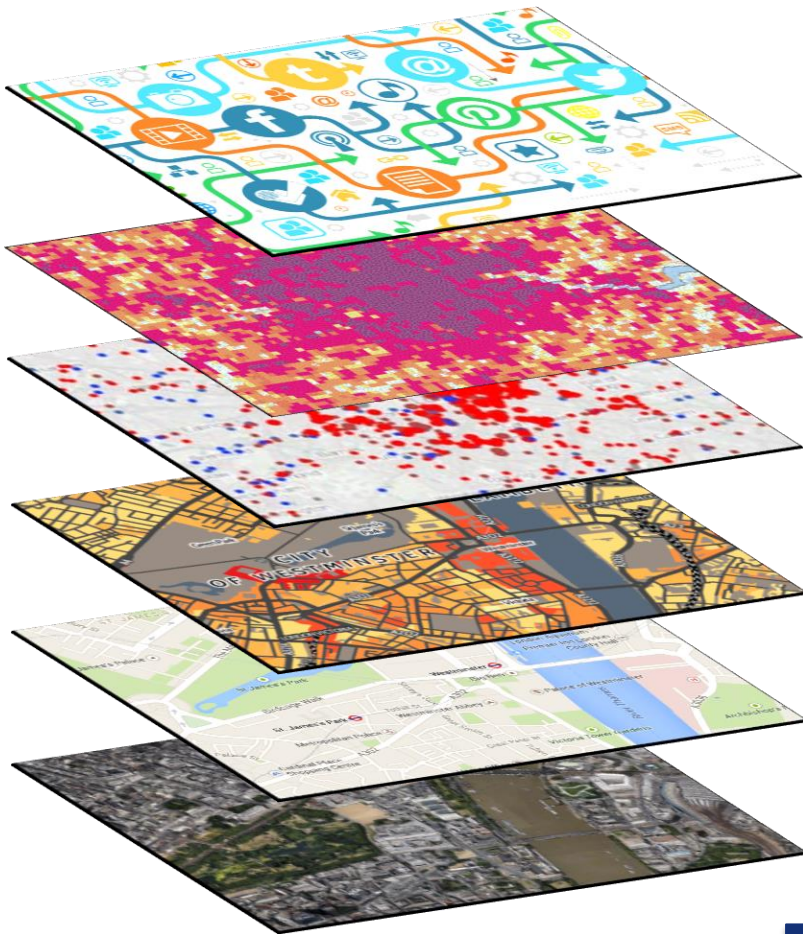
Roma

Source: Presentation of L. Franconi at the **Workshop on Labour Market Areas**, ISTAT

(*) The maps show the 10 largest commuter flows (in numbers) in terms of flows for labour market areas.

Source: ISTAT (<http://gisportal.istat.it/bt.flussi/>)

Data sources for city statistics



Big data

Grid data

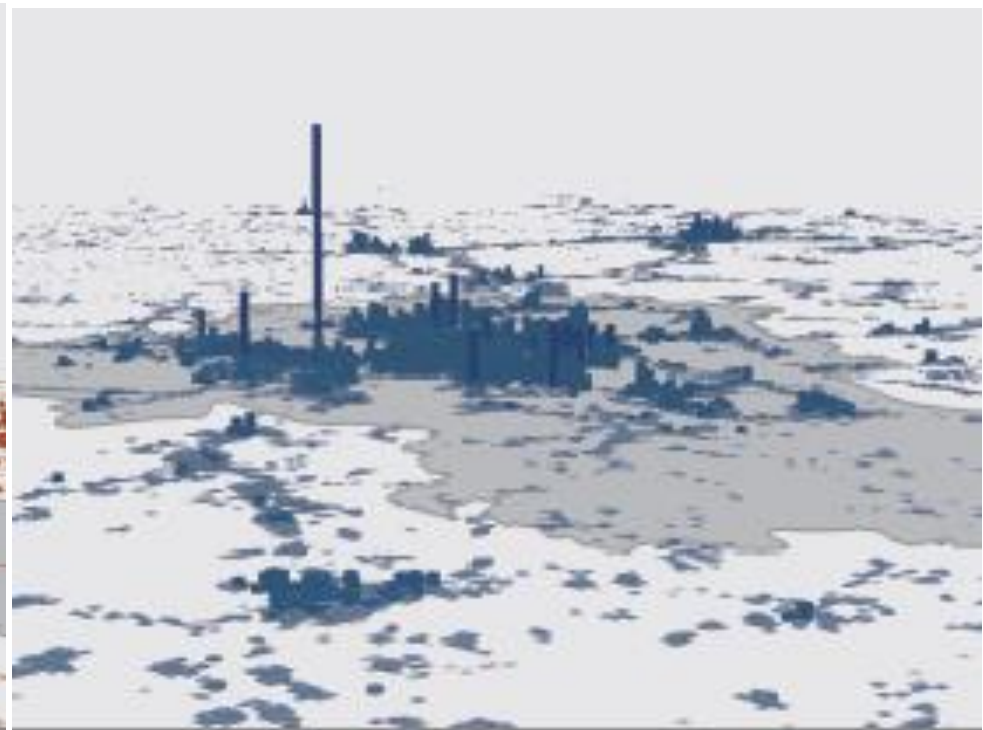
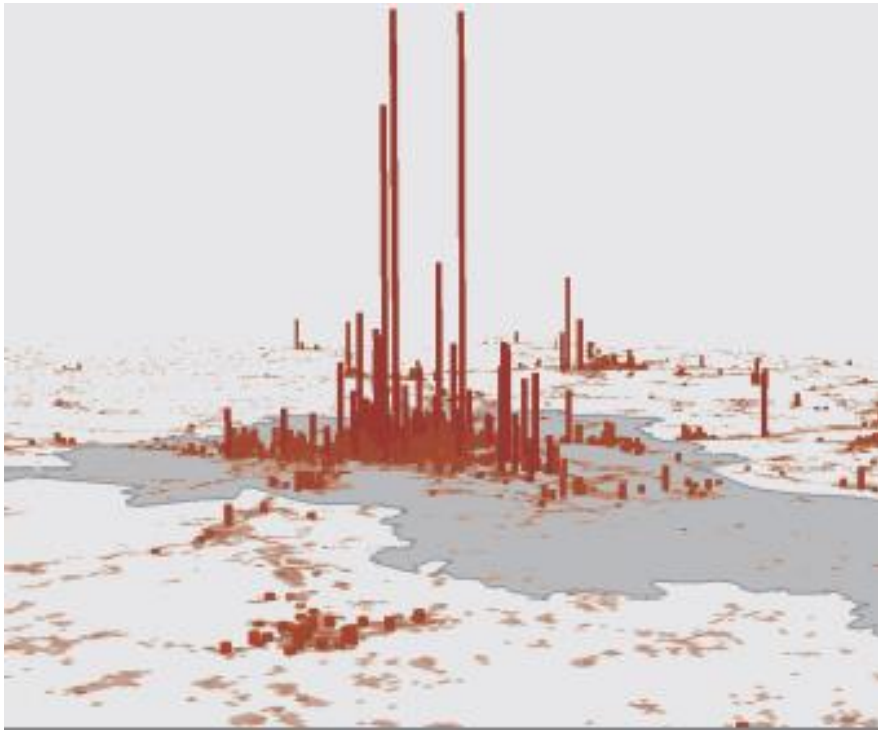
Survey data

Admin data

Geographical level

"Real world"

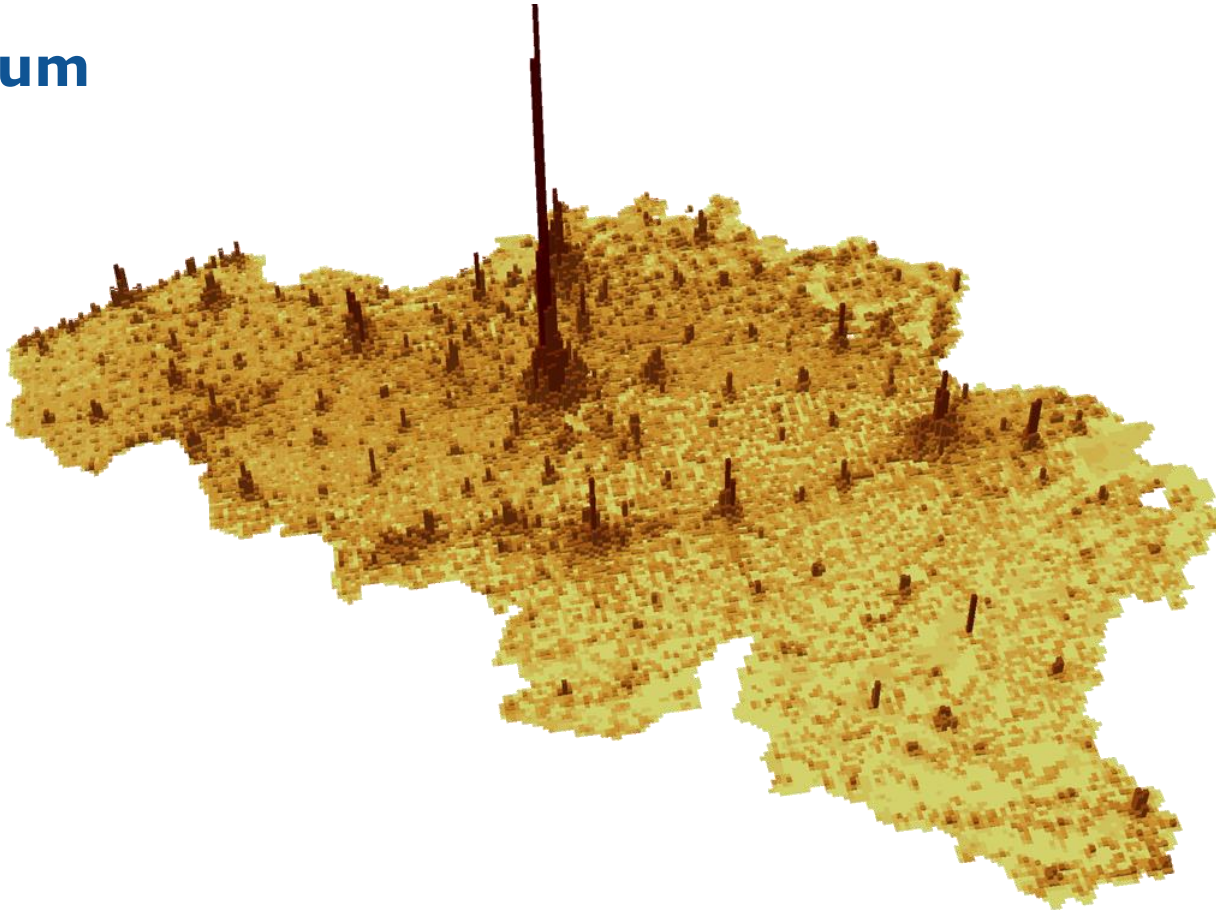
Day and night-time population Ljubljana



Administrative data calibrated by patterns observed in mobile phone network data
Source: Statistical Office of the Republic of Slovenia

Where are people during a typical weekday?

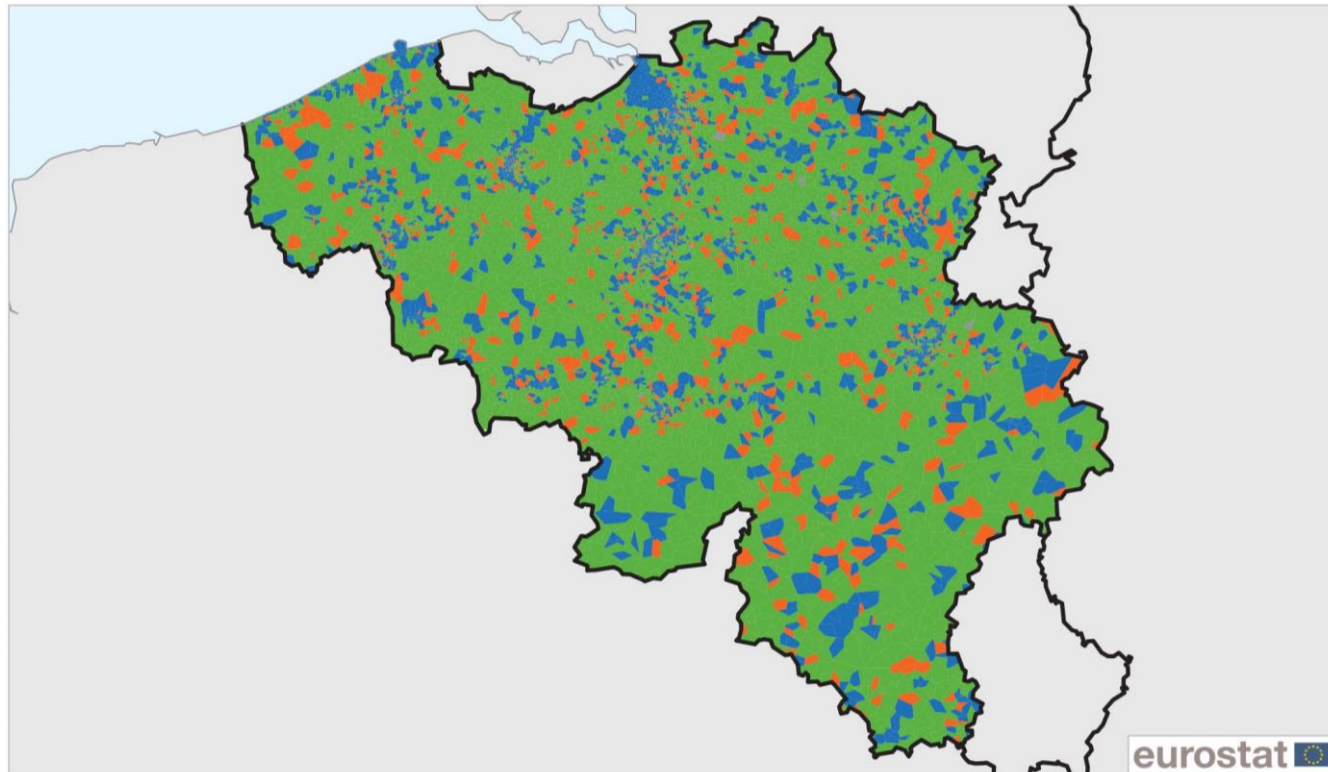
Belgium



Source: Joint project of Statistics Belgium, Proximus and Eurostat

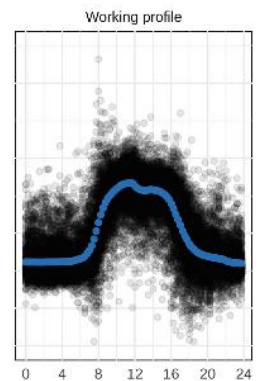
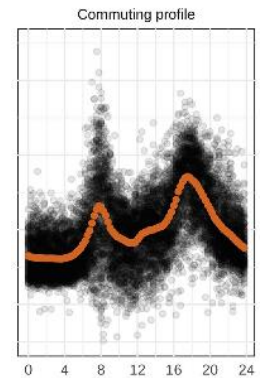
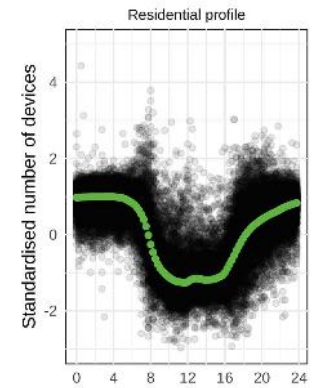
Classification of the territory: residential, commuting and working areas profiles

Belgium



- Residential profile
- Commuting profile
- Working profile
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO
Cartography: Eurostat — GISCO, 06/2017



Note: experimental statistics based on a joint Eurostat, Statistics Belgium and Proximus project

Source: Eurostat

Prospects for the future

- **Implement new and improved statistical products based on administrative sources and big data for smart statistics**

Measuring access to public transport

Who has easy walking access to a public transport stop?

- Maximum 5 minutes walk to bus or tram stop
- Maximum 10 minutes walk to train or metro

Walking distance calculated using a street network

- Density of the street network matters
- Obstacles for pedestrians are taken into account

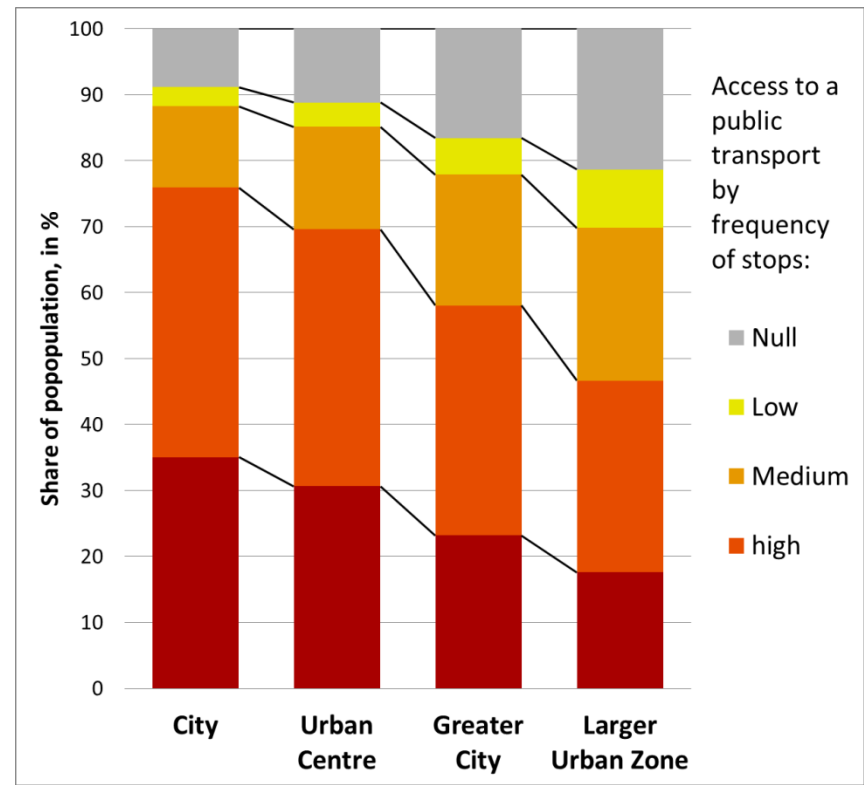
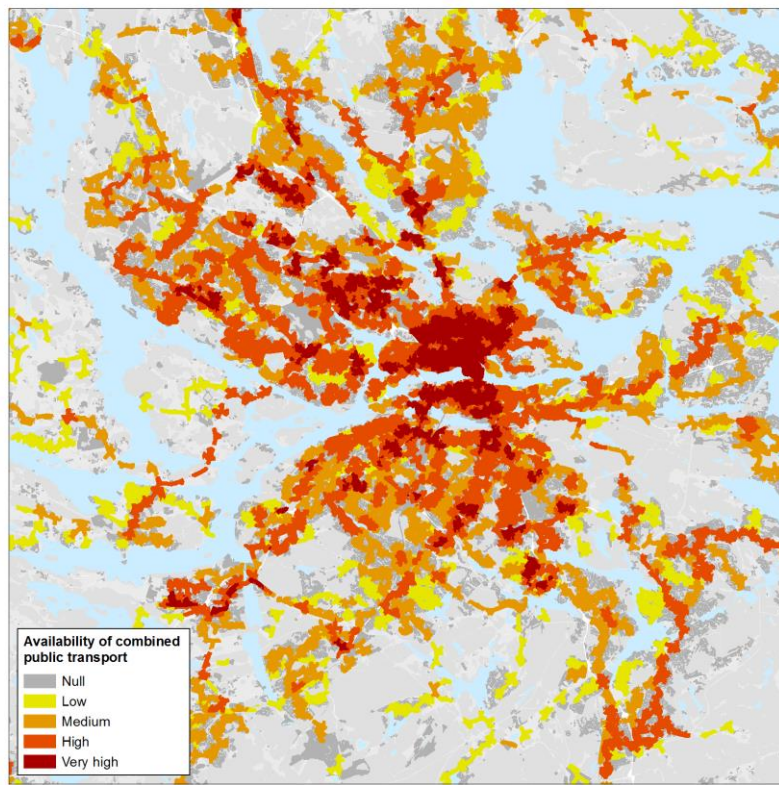
For each catchment area around a stop: total number of departures and number of inhabitants

Frequency classes

5 groups based on access and departure frequency

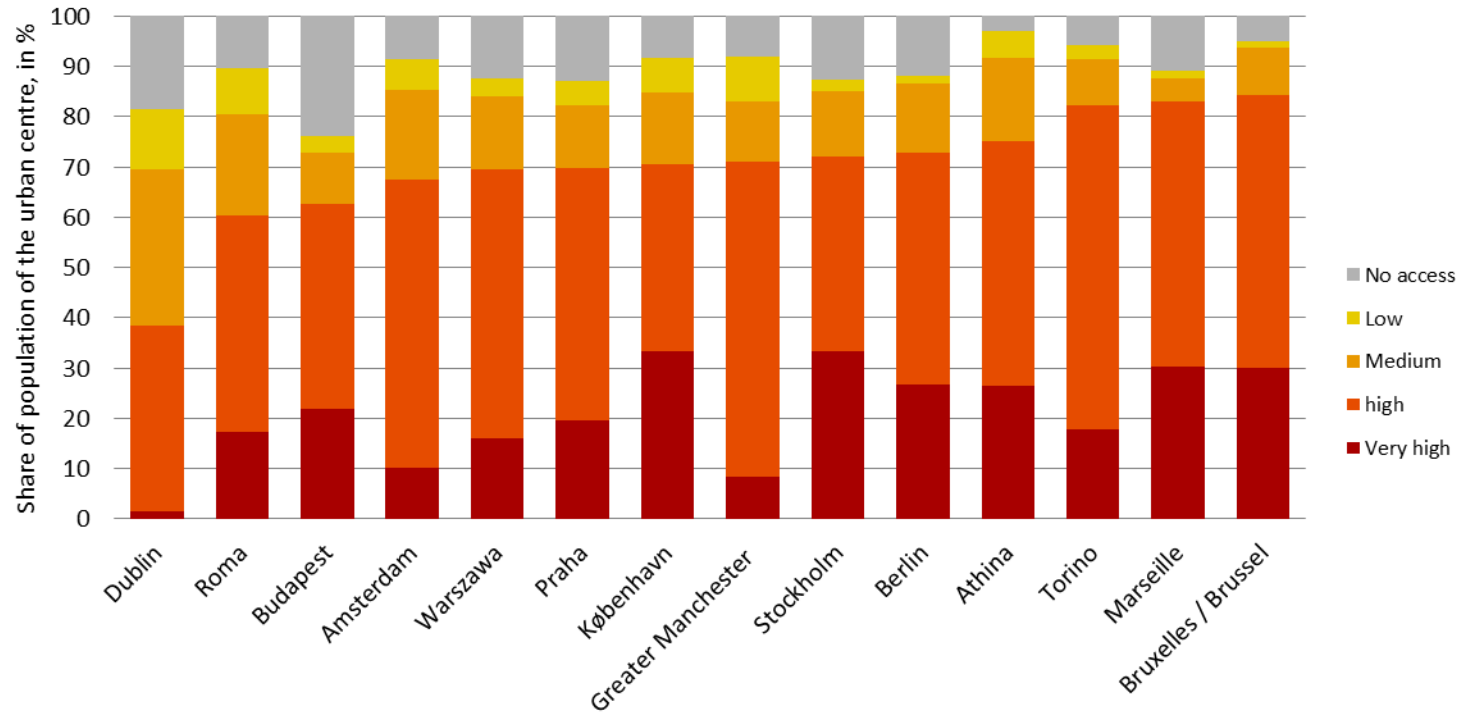
		Metro and train			
		High frequency (> 10 departures/hour)	Medium frequency (between 4 and 10 departures/hour)	Low frequency (less than 4 departures/hour)	No services
Bus and tram	High frequency (> 10)	VERY HIGH	HIGH	HIGH	HIGH
	Medium frequency (4 to 10)	HIGH	MEDIUM	MEDIUM	MEDIUM
	Low frequency (< 4)	HIGH	MEDIUM	LOW	LOW
	No services	HIGH	MEDIUM	LOW	NO ACCESS

Stockholm: areas and population by access to public transport and its frequency



Source: H. Poelman, L. Dijkstra: Measuring access to public transport in European cities, Regional Working Paper 2015

Access to public transport in large European cities



Conclusions

- **Implement new and improved statistical products based on administrative sources and big data for smart statistics**
- **Complement existing territorial classifications with more flexible, more functional statistical geography**
- **Use the harmonised and legally recognised statistical territorial definitions (grid, city, town and suburbs, etc.) to produce more spatially disaggregated statistics**



Thank you for the attention!

<http://ec.europa.eu/eurostat/web/regions-and-cities/overview>

Questions:

ESTAT-REGIO@ec.europa.eu

Acknowledgments

Eurostat Big Data Task Force

Eurostat GISCO Team

Eurostat Regional Team

*Lewis Dijkstra and Hugo Poelman - DG REGIO
author of slides on Transport*

References

Eurostat Regional Yearbook (Eurostat, 2018)

Urban Europe (Eurostat, 2016)

Berlin and Hamburg lose court battle over Germany's 2011 census (DW)

<https://www.dw.com/en/berlin-and-hamburg-lose-court-battle-over-germanys-2011-census/a-45563740>