ESPON

EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

// ESPON FUORE - Functional Urban Areas and Regions in Europe

// https://www.espon.eu/functional-urban-areas-tool

Roger Milego, UAB - Autonomous University of Barcelona

ESPON Seminar // State of the European Territory - Digital Innovation Paving the Way for Territorial Cohesion // 27 November 2019 // Helsinki, Finland

Networking on New and Ongoing ESPON Activities

UAB Universitat Autònoma de Barcelona

gisat

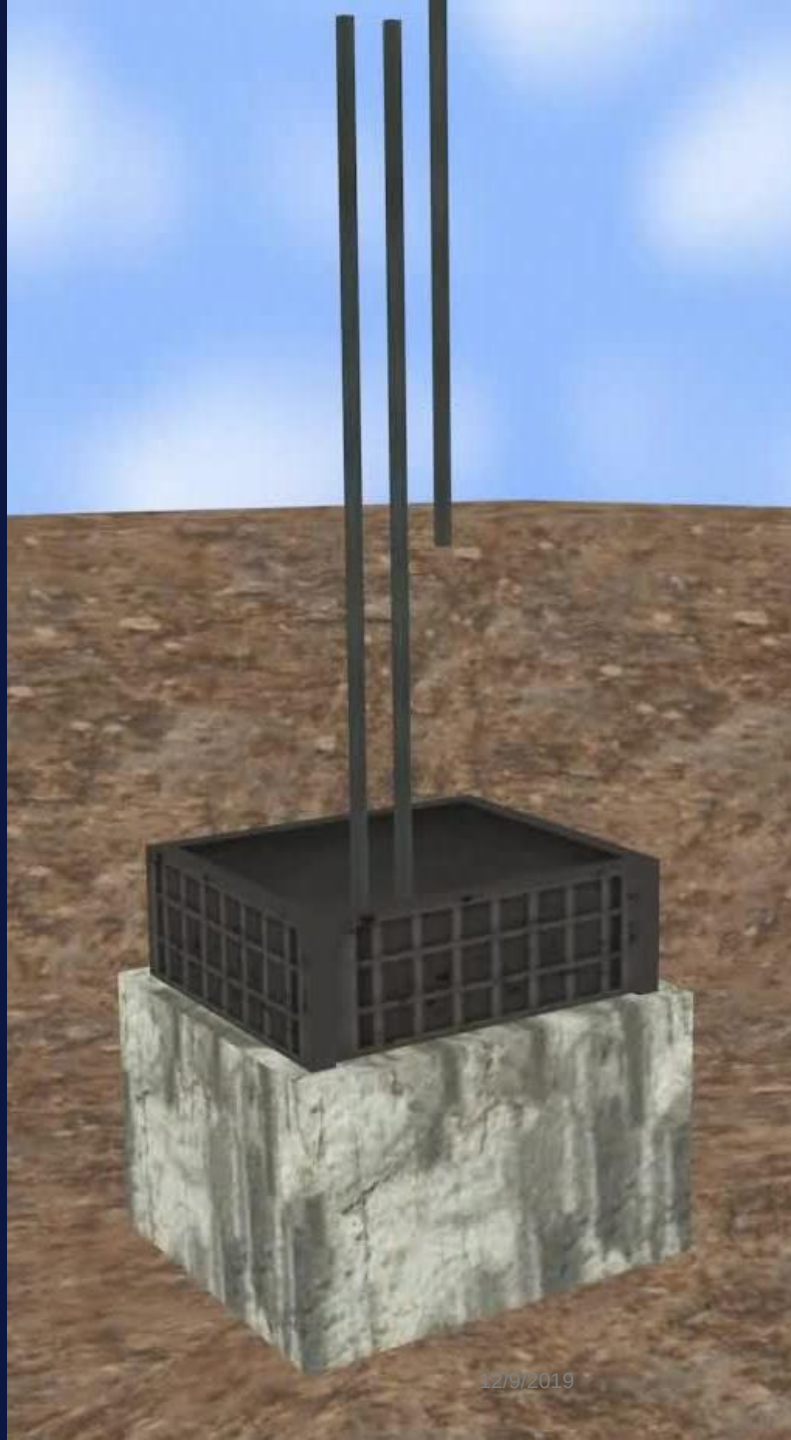
Randbee

UNIVERSITÉ DE GENÈVE

Mcrit

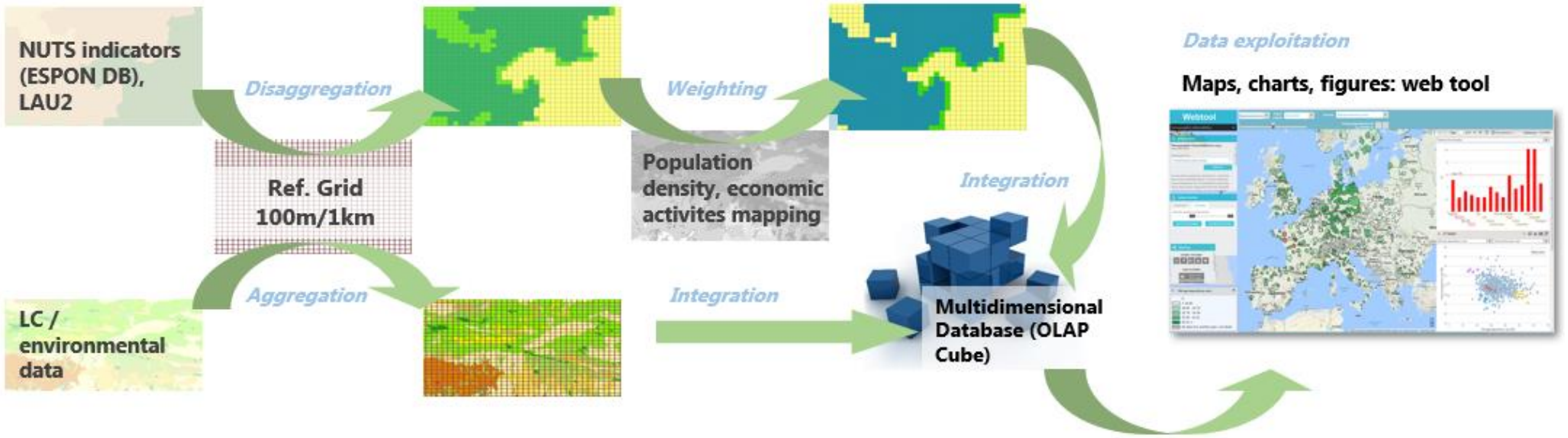
1

Background



Background

- Former ESPON OLAP Cubes, developed within ESPON M4D



2

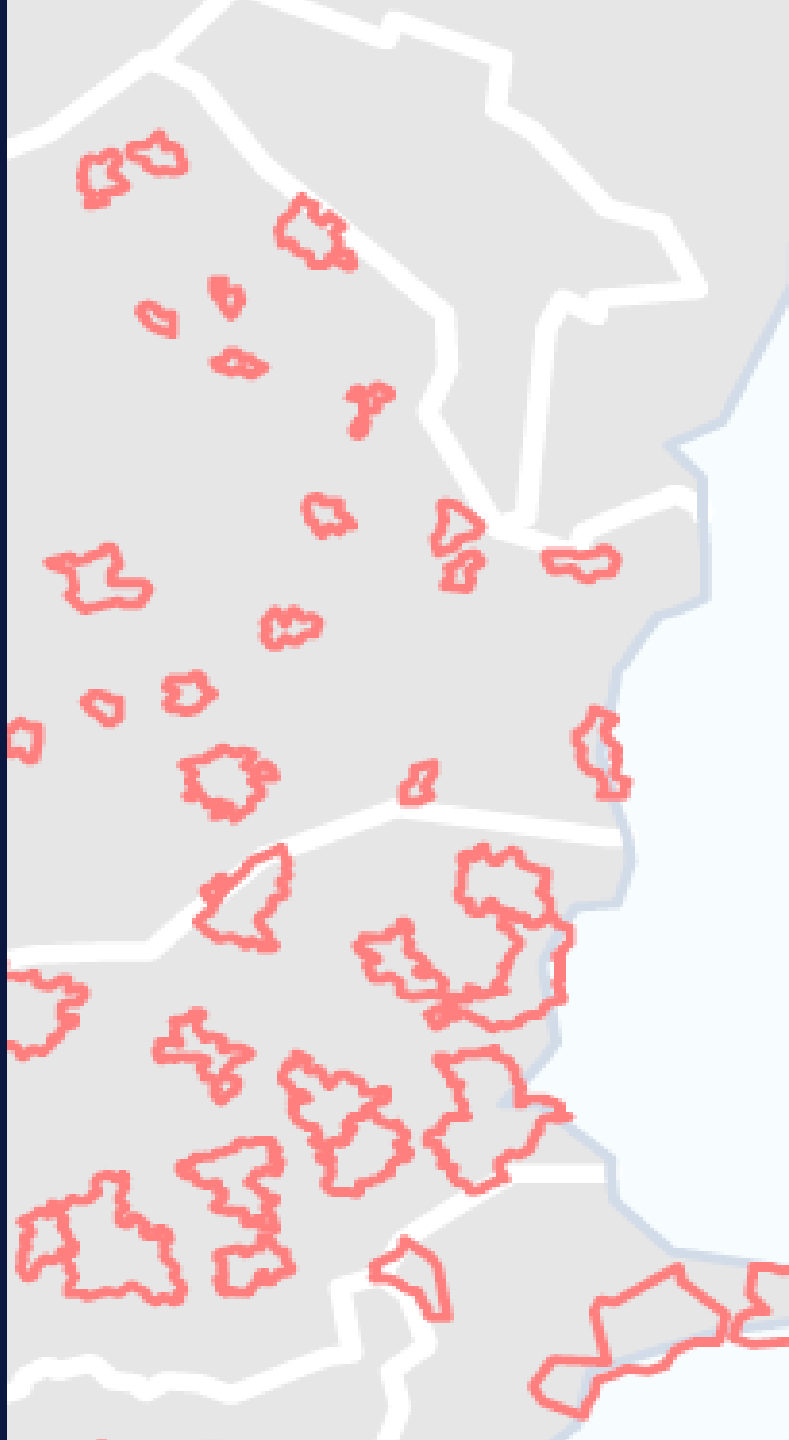
Objectives

Objectives

- Building an updated ESPON OLAP Cube (named in this project **ESPON Spatial Multidimensional Database** or ESPON SMD) with estimated indicators for **FUAs** and other **functional regions**.
- Developing a **Web Tool** to exploit the new ESPON SMD and facilitate the **analysis** of the data and **benchmarking** of the different functional regions

3

Selected functional regions



Nine functional regions

- TERCET Functional Urban Areas (FUA)
- TERCET Coasts
- Eurostat's Maritime Service Areas (MSA) Coasts
- Mountains
- Islands
- Sparsely Populated Areas (SPA)
- Border "narrow" (45 min)
- Border "large" (90 min)

ESPON GEOSPECS

- Green Infrastructure potential areas → ESPON GRETA

4

Methodology

Data sources

- **Indicators**: ESPON Base indicators (demography, employment, education, economy, energy, society, R&D, ITS).
- **Data integrator**: ER Grid 1 km^2 for Europe + *Ad hoc* grid for Outermost regions.
- **Ancillary datasets**:
  - European Settlement Map (ESM) 10m (JRC)
  - CLC-R (refined) 100m (JRC)
  - Statistical classification of economic activities in the European Community (NACE) (ESPON GEOSPECS, from NSI sources)

Disaggregation/estimation at 1 km²

Indicator type	ancillary dataset	CLC classes	weights
Demographic, Education, ITS	ESM	Rural, urban, others; class 1	Batista & Poelman 2016
Employment, Society	NACE total population	Main activity sectors; class 2	Eurostat
Economy, R&D	NACE by type of activity	Main activity sectors; class 2	OCDE
Energy	NACE by type of activity	Main activity sectors, Eurostat, GHG emissions; class 2 and 3, respectively	EEA Report No 8/2017; Eurostats

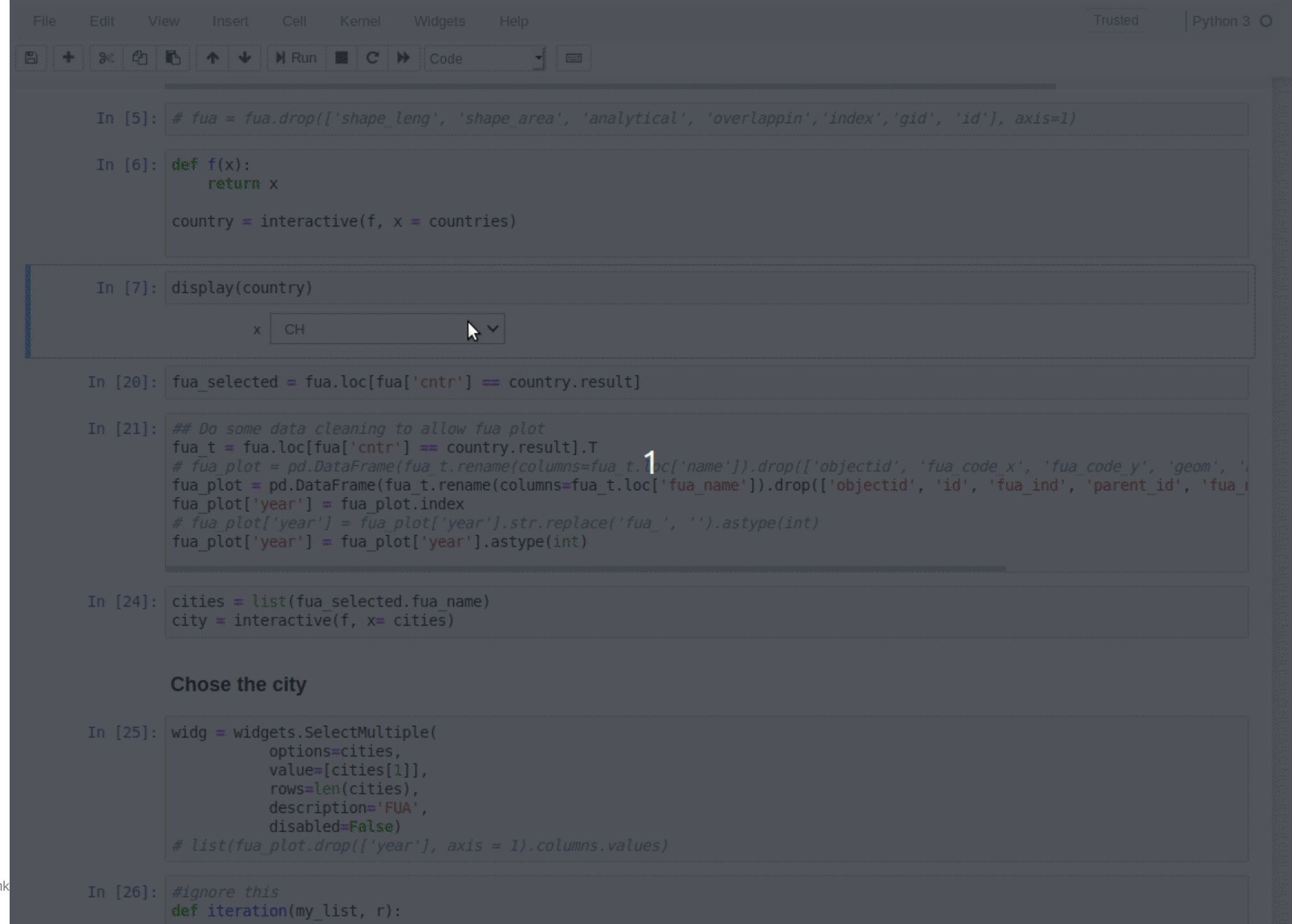
5

Web Data Analysis Tool

Online estimation of indicators by functional region

- **Embedded** in the ESPON FUORE web tool.
- Advanced users will be able to **upload** a NUTS indicator and obtain an **estimation** at **functional region level**.
- Possibility to choose between different **weighting matrices**.
- **Preview** of results on **chart** and **map**
- Results eventually shown in the **web tool**.

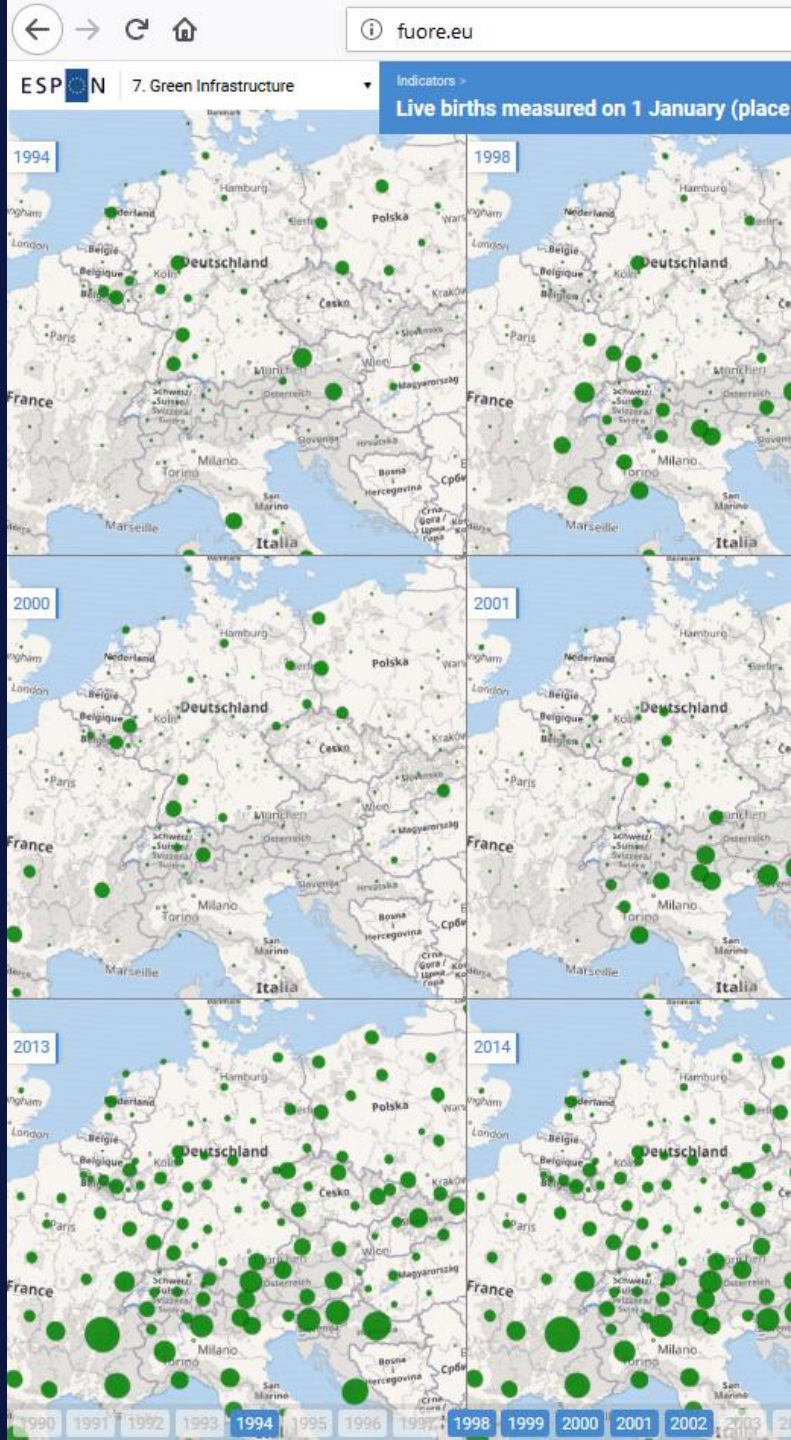
Web Data Analisys Tool preview



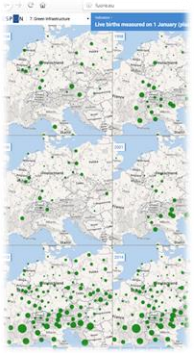
6

The web tool

http://fuore.eu/



ESPON FUORE web tool (http://fuore.eu/)

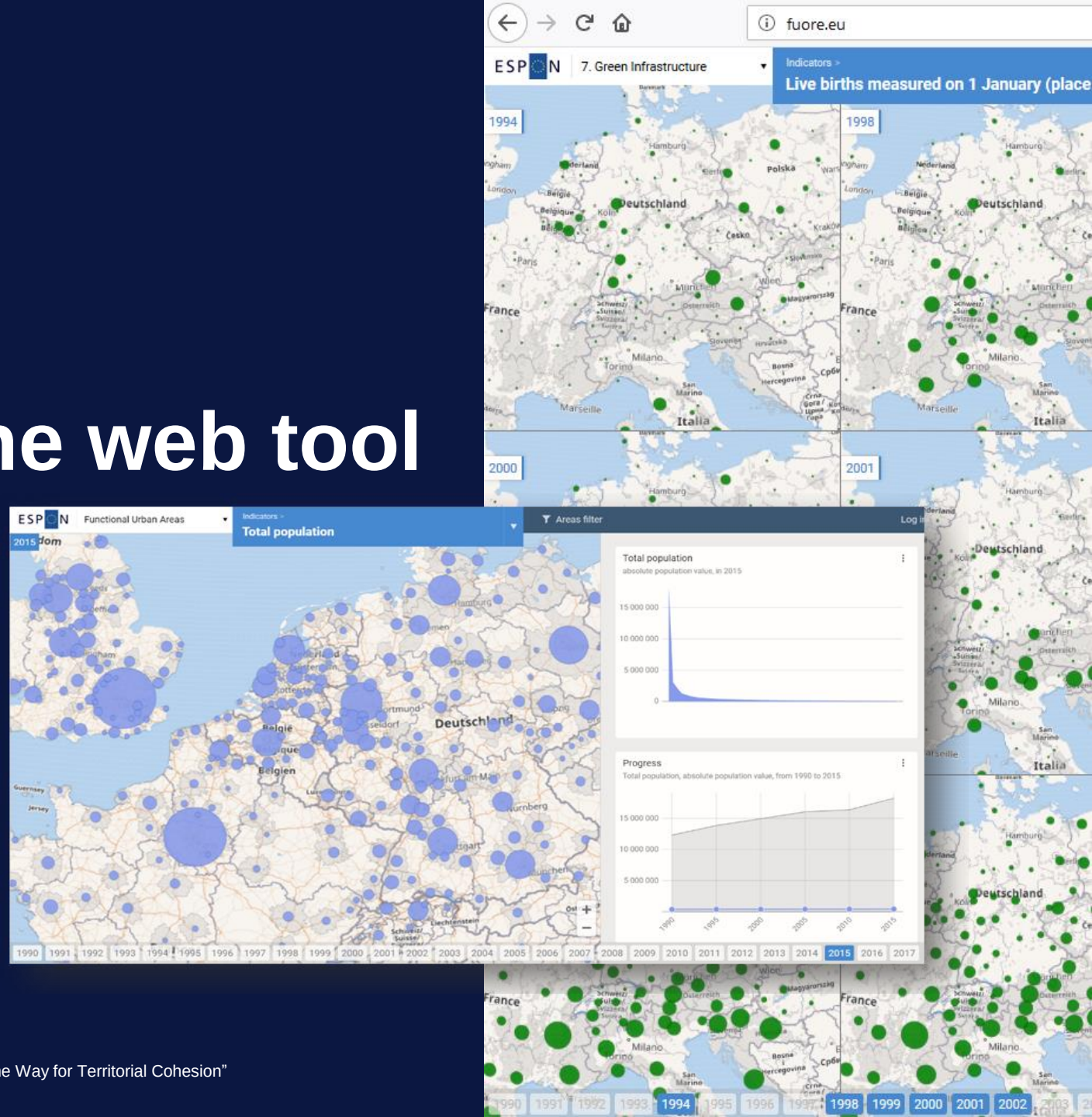


- One of the **main results** of the project.
- **Presents the indicators dissagregated at the level of functinonal regions.**
- **Interactive** web tool of interlinked **maps** and **charts**, allowing the users **analysis** and benchmarking of funcional regions
- Currently in its ***beta (draft final)*** **version**. *Final version in April 2020*.
- **Open source components based – no additional licenses needed**

7

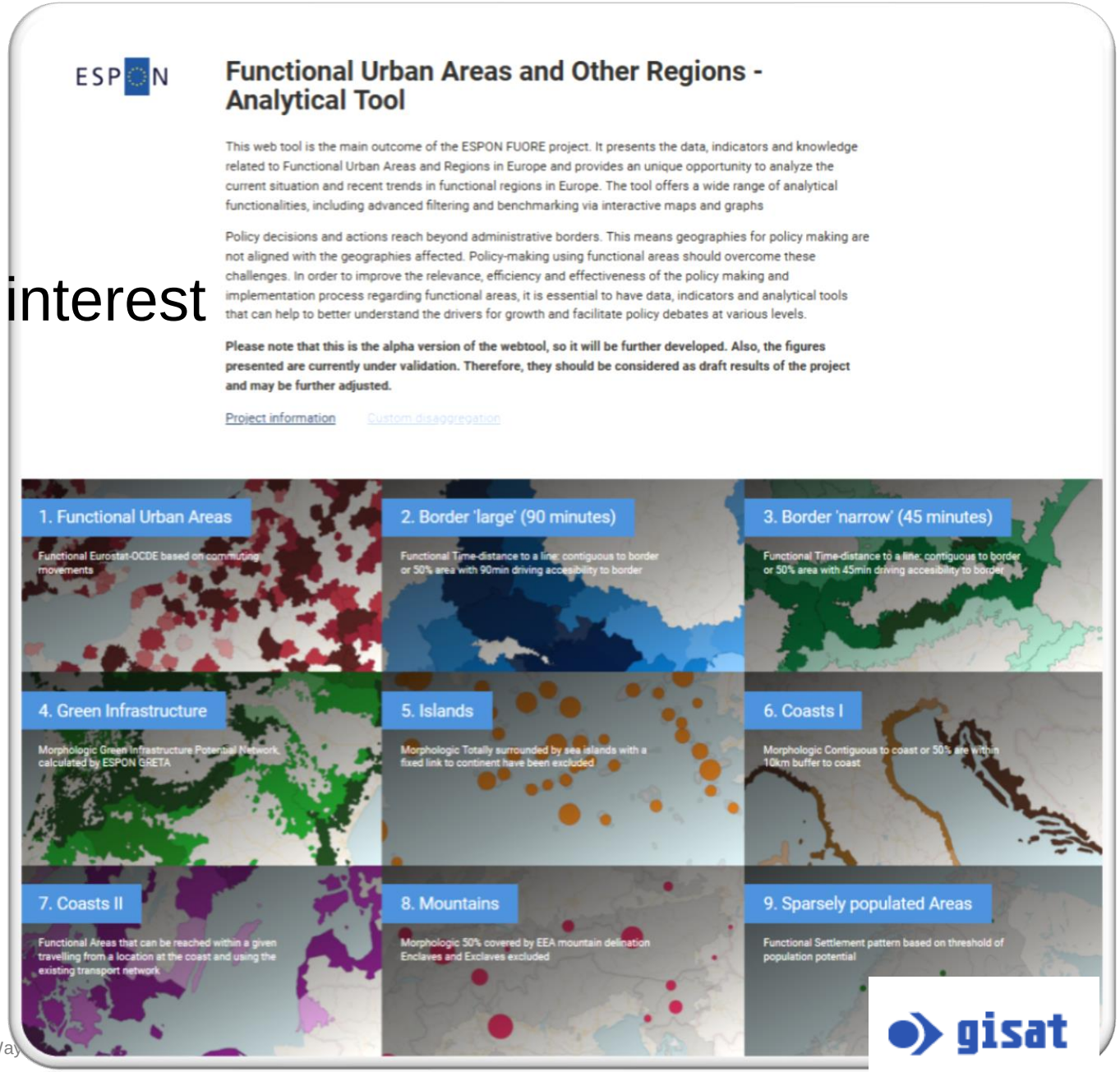
Main features of the web tool

http://fuore.eu/



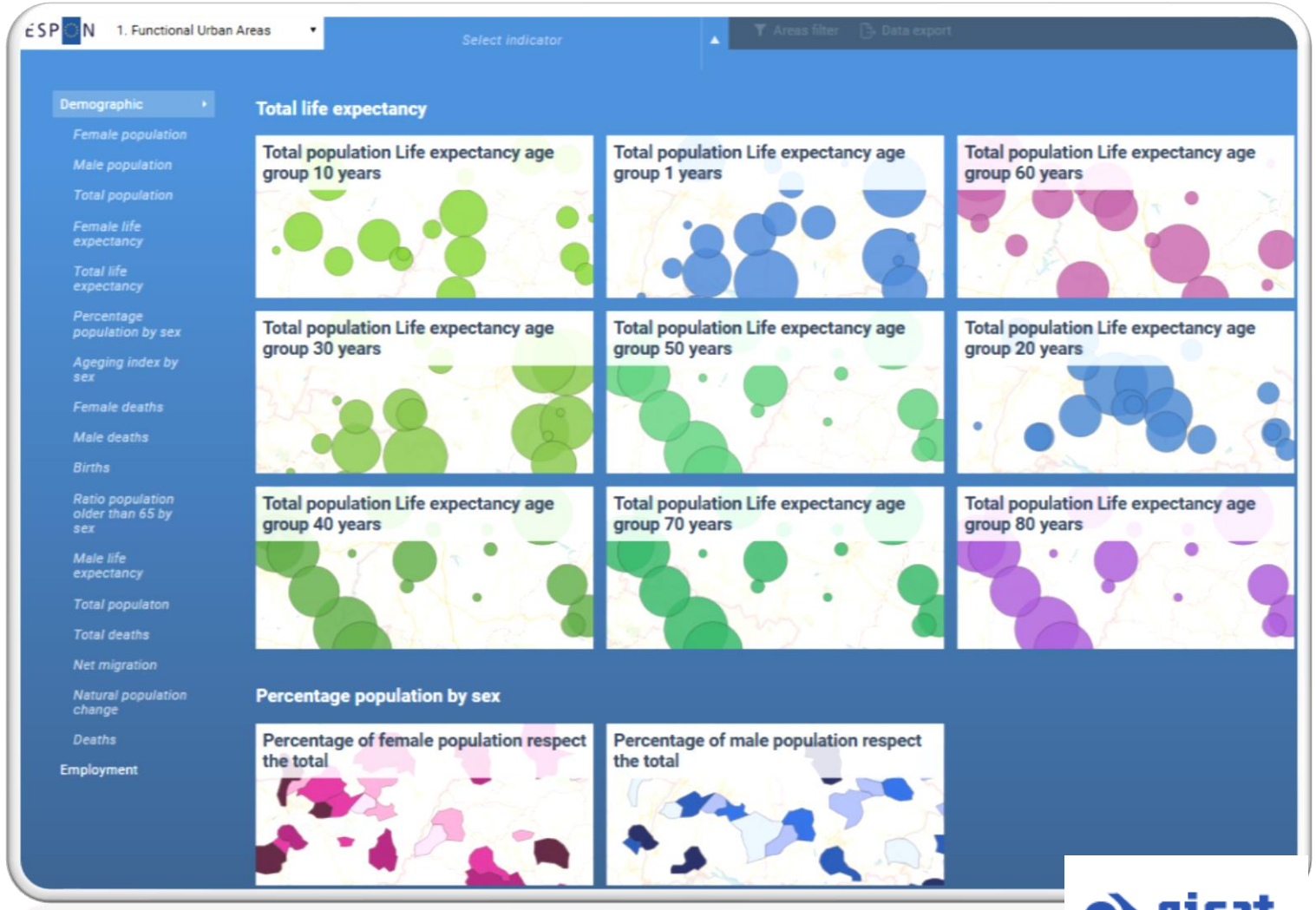
Landing page

- Info about the project
- Selection of functional region of interest
- Link to ESPON project website
- Guidelines on how to use the tool will be added
- Link to Web Analytical Toolbox (for user-driven disaggregation of indicators)



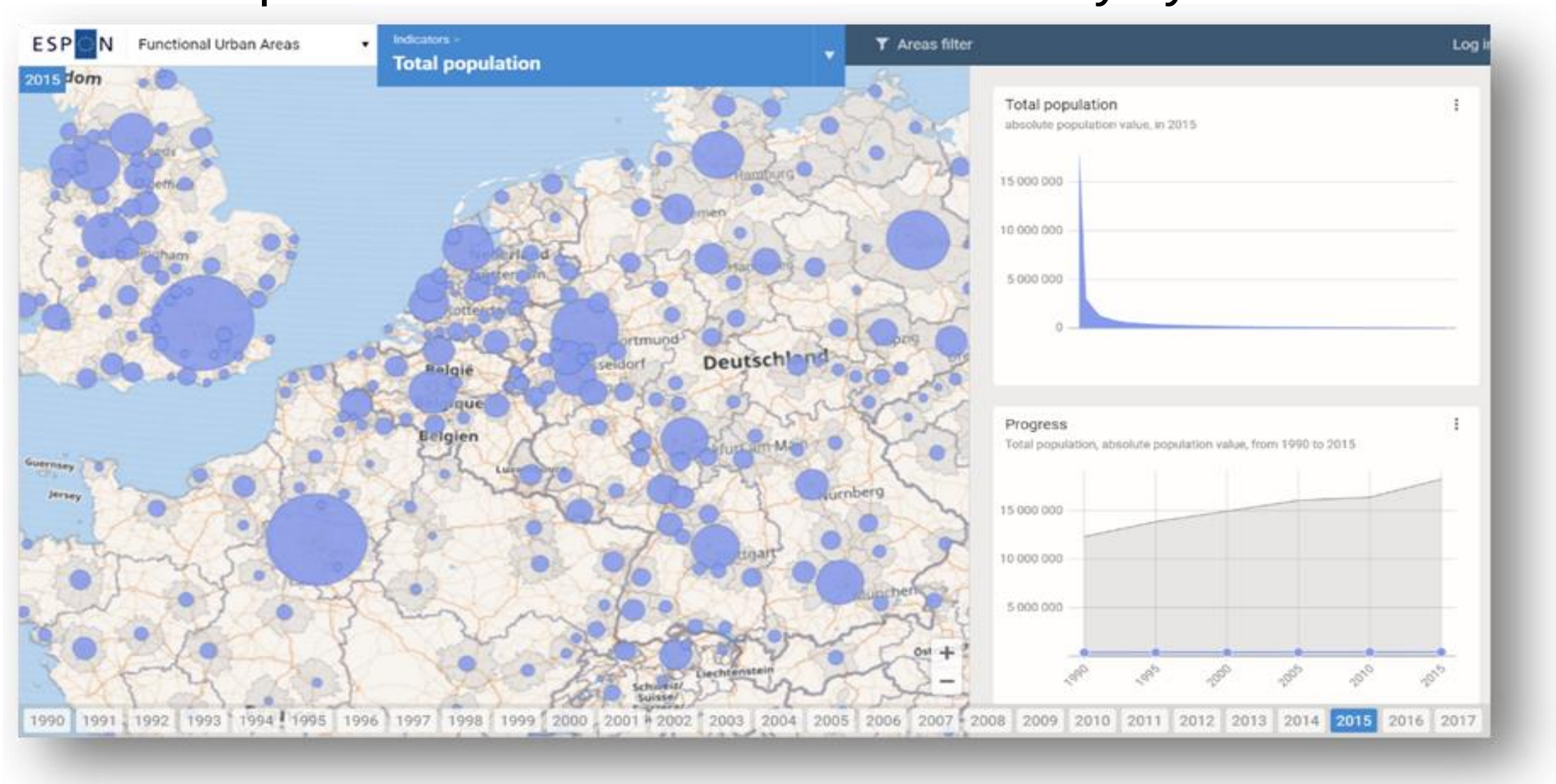
Selection of indicator

- Categories and sub-categories
- Cartographic visualisation depends on the type of indicator (stock values x ratios)



The Web Map View

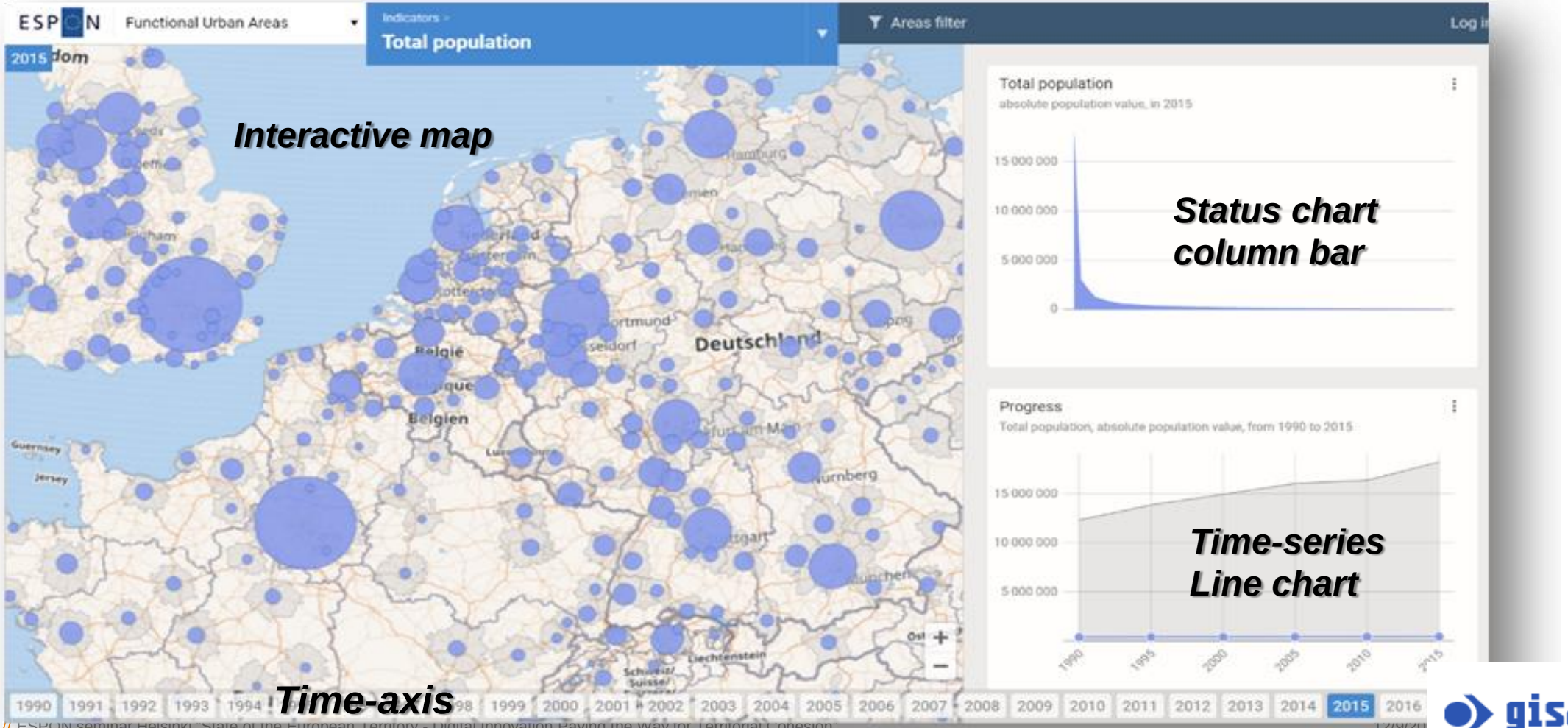
- Interactive map window + interactive charts - fully synchronized



The Web Map View

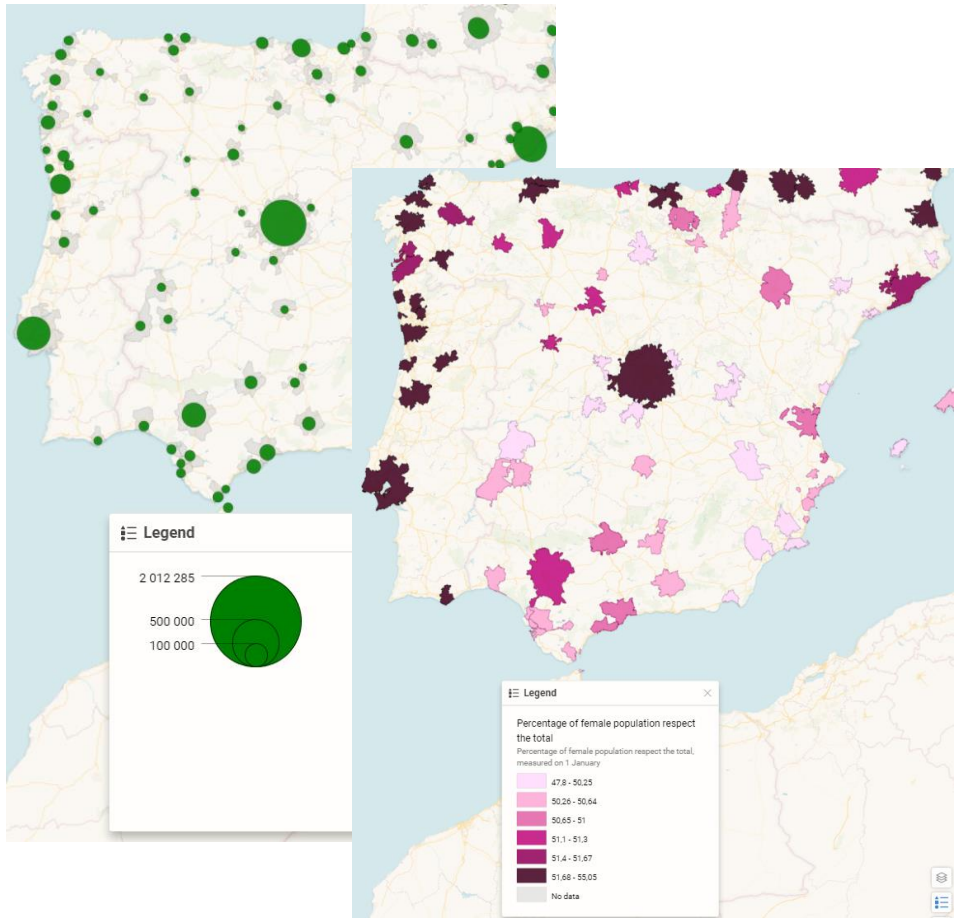
- Interactive map window + interactive charts - fully synchronized

Selection of functional region ***Selection of indicator*** ***Interactive charts***

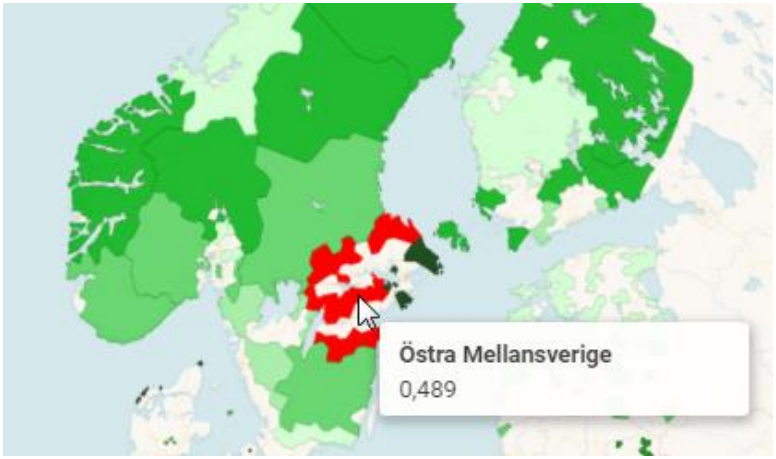


Map options

- Dot chart for stocks
- Choropleth map for ratios



- Different types of background map are available (aerial, topographic, etc.)



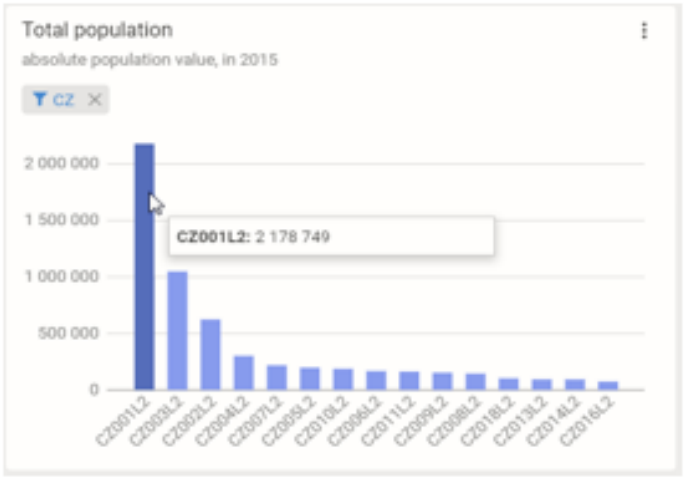
- Querying analytical units in the map

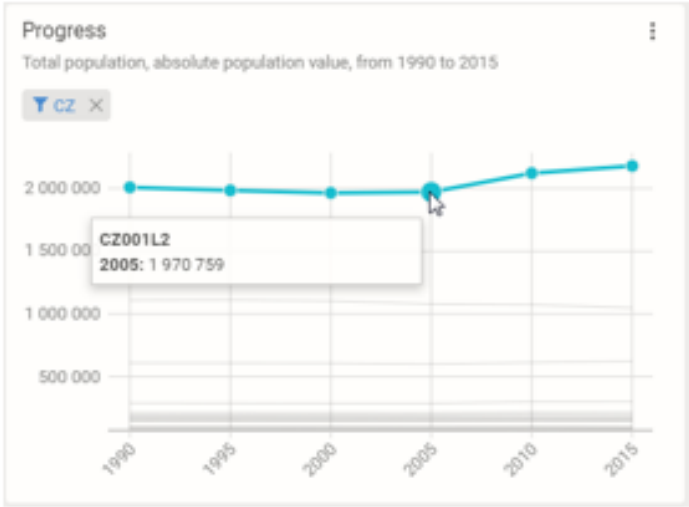
Interactive charts

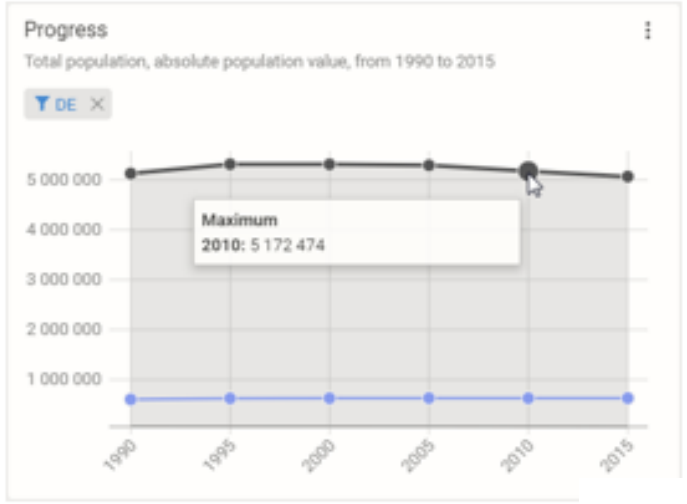
- Charts showing the values in cummulative way (groups, maxima, averages) or unit by unit
- Reporting units sorted

  in descending way

  by default

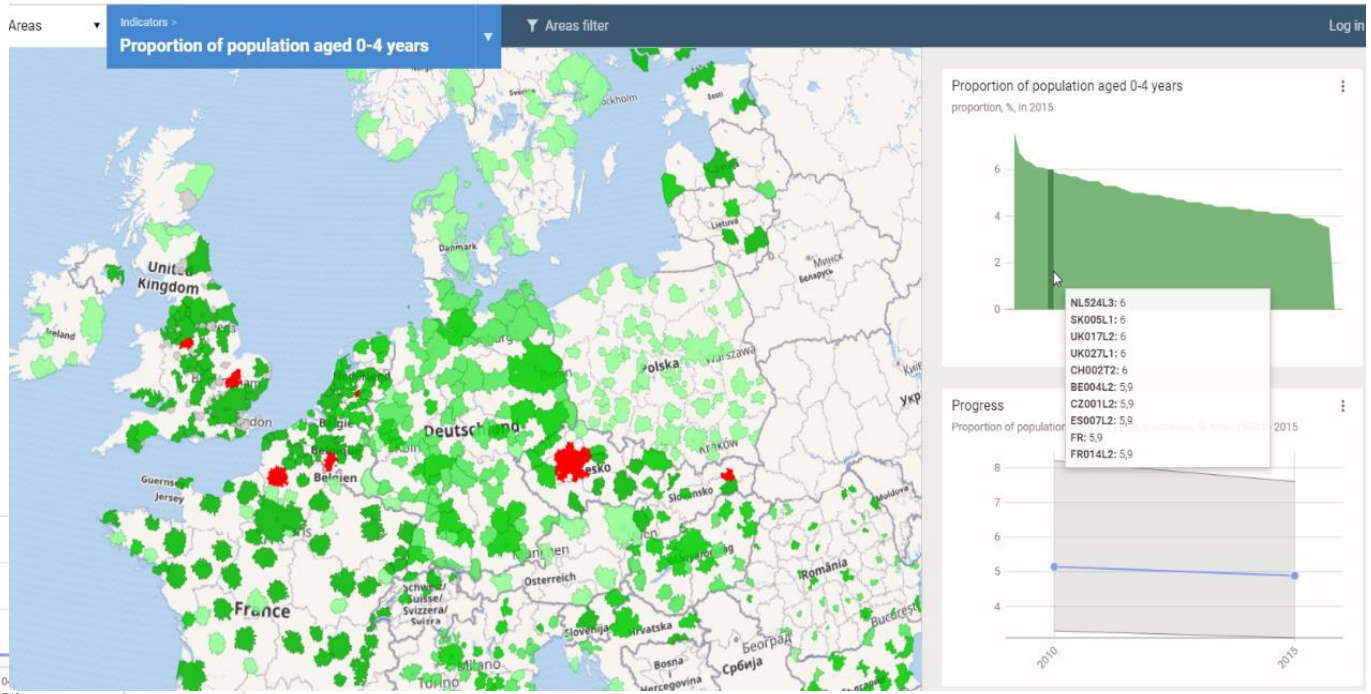


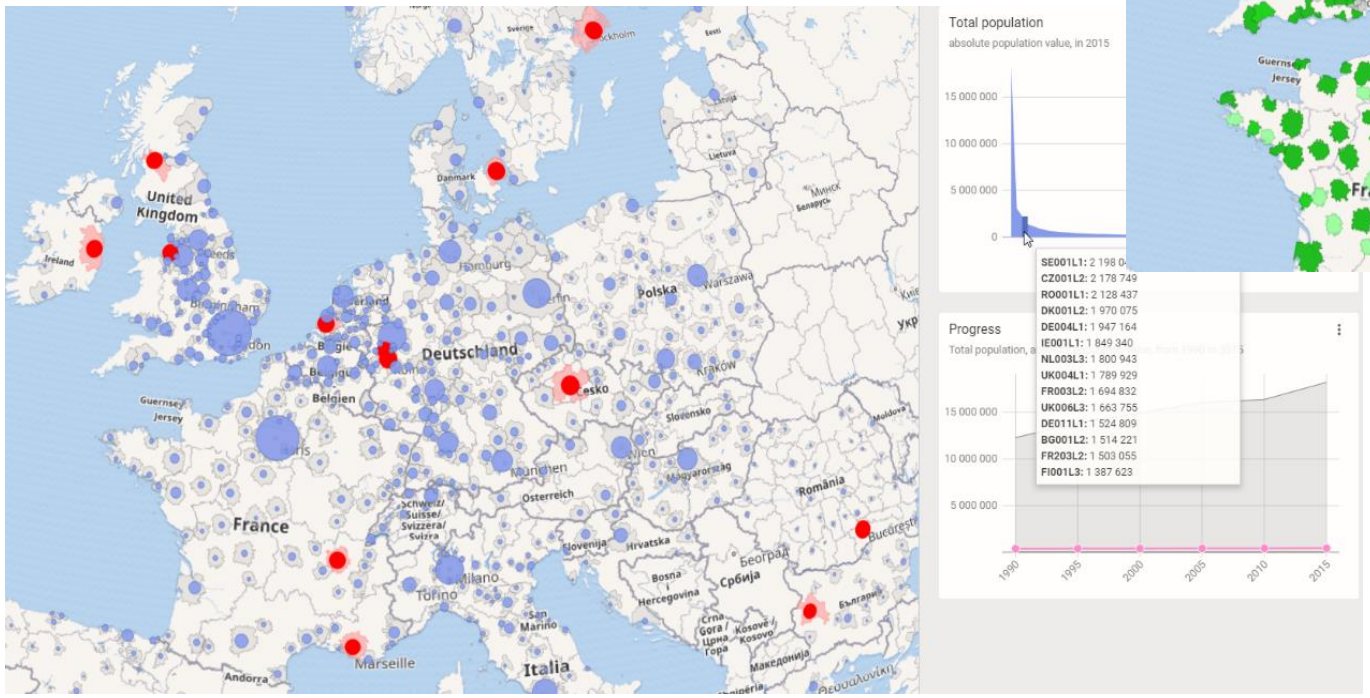




Benchmarking, identification of „similar“ regions

- Select the unit in map window
- Select the unit in chart

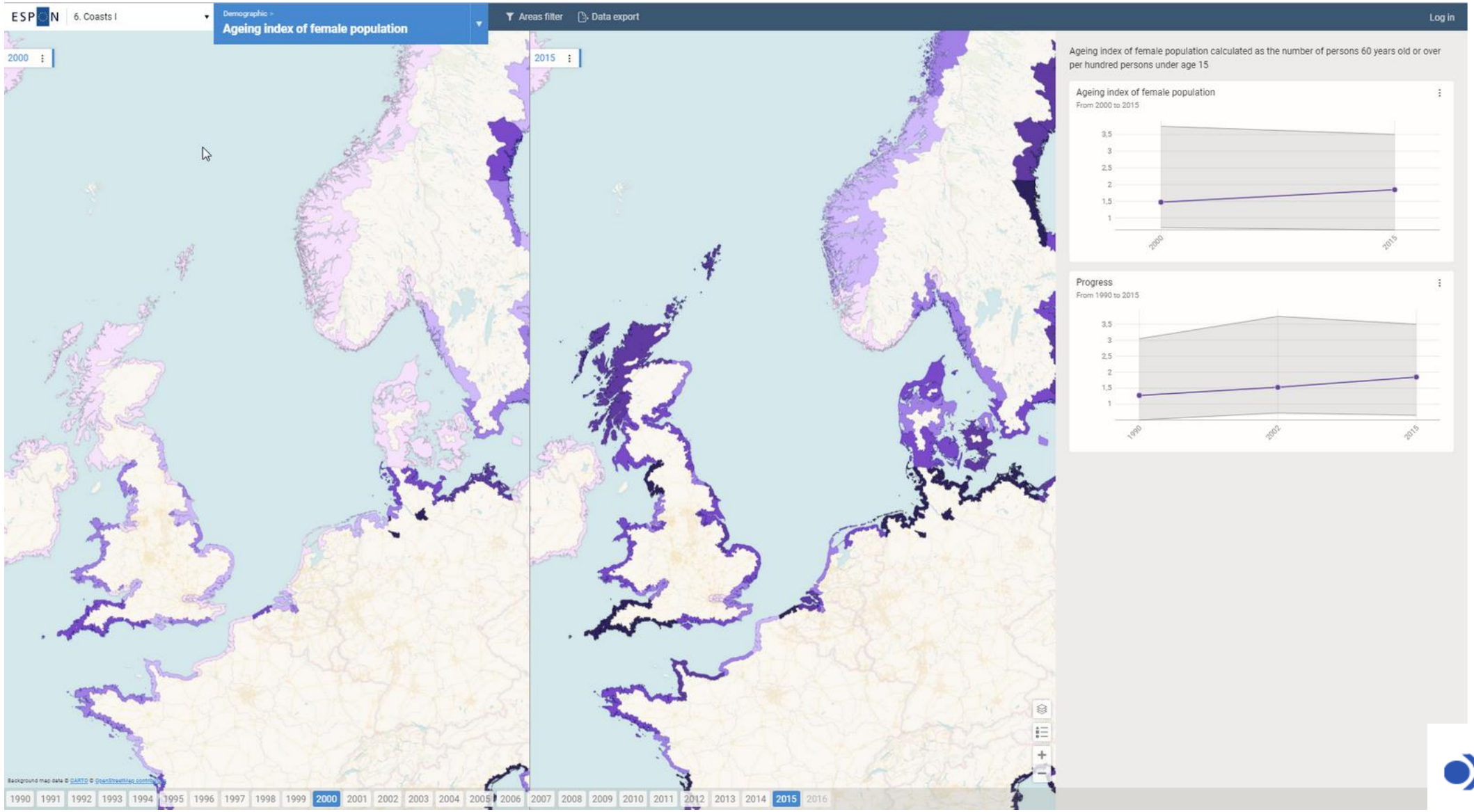




- Regions with similar values are highlighted

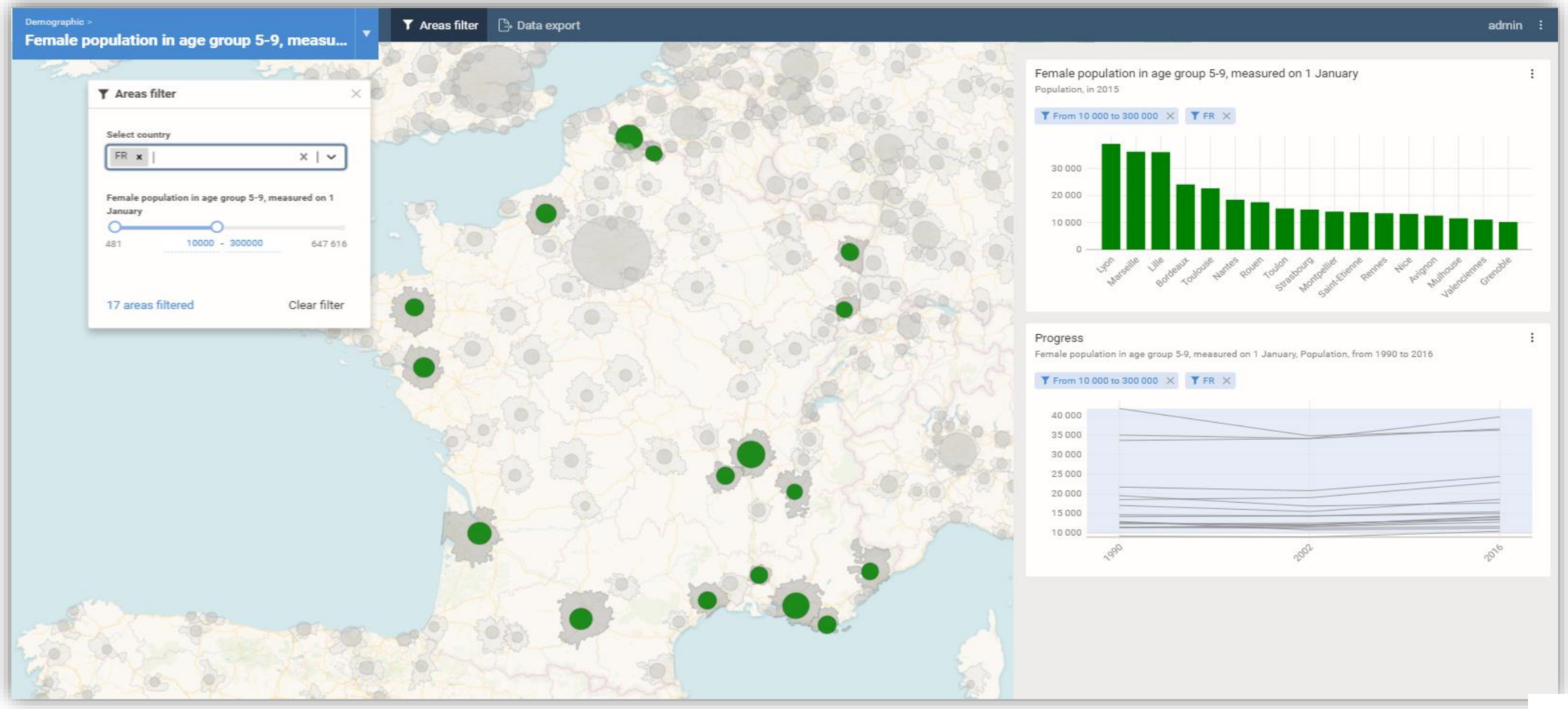
Multi-temporal mode

- Aging of female population for coastal regions, comparison for 2000 and 2015



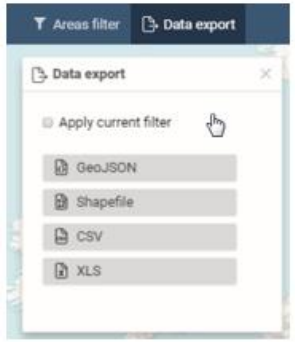
Filtering Regions

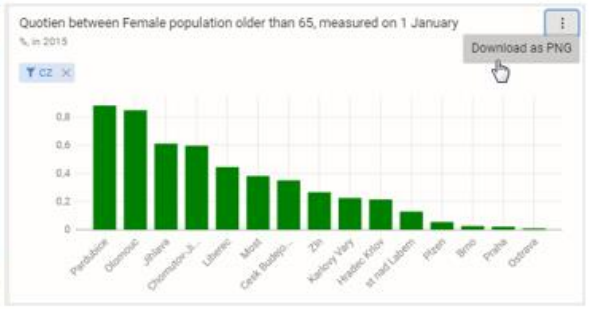
- Filtering based on combination of country and values of indicator

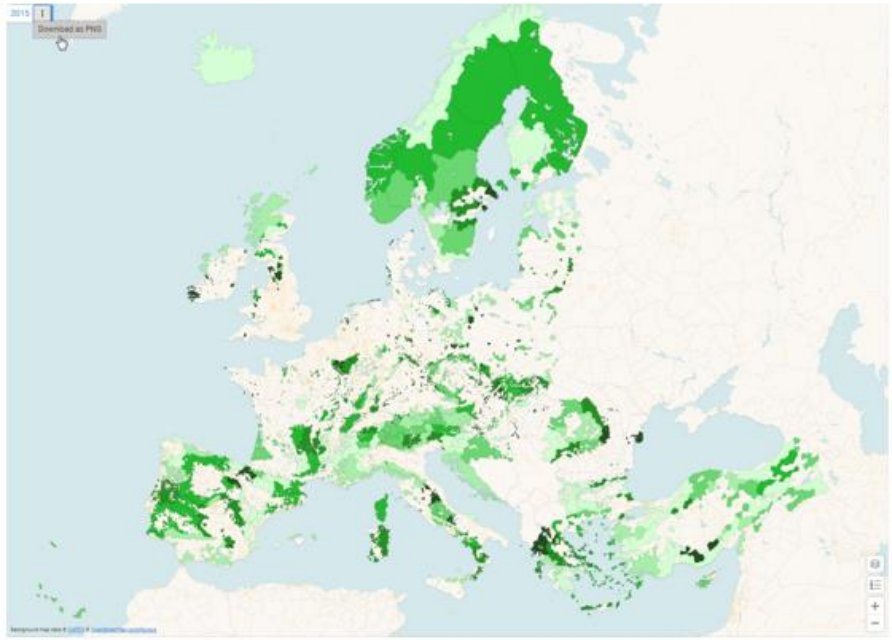


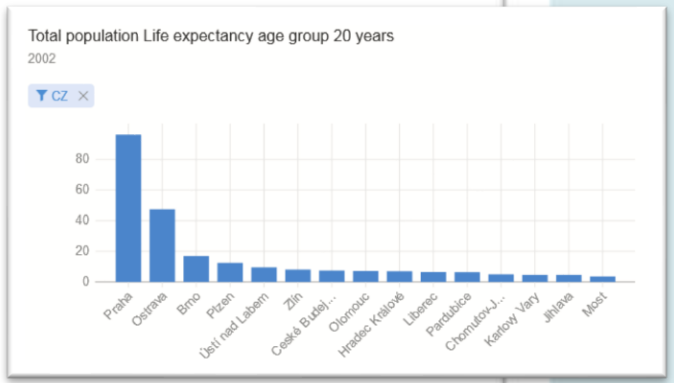
Exporting Functionalities

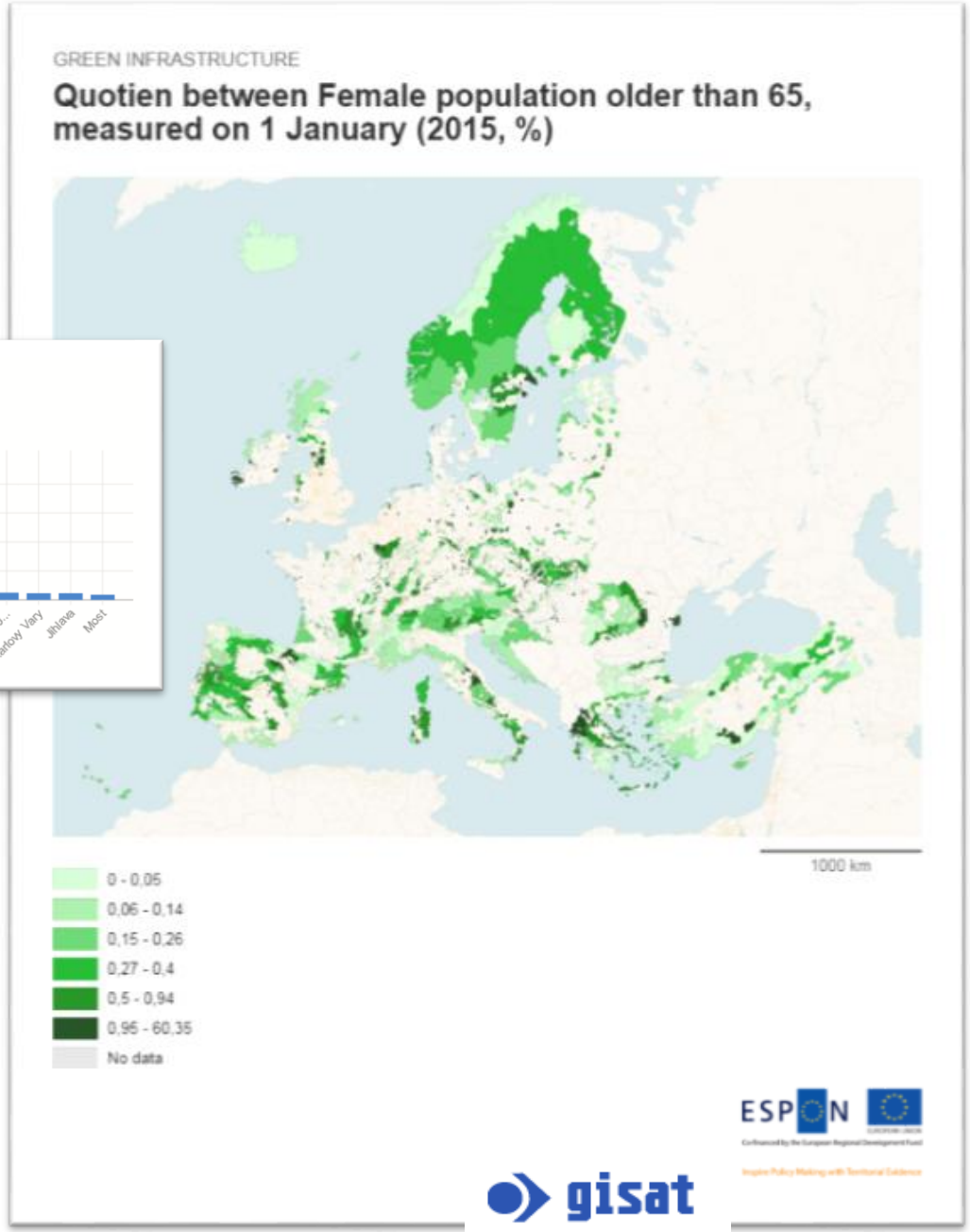
- Maps, charts and data content can be exported
- as PNG, GIS layers or tabular data











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