

ThemaMap: a Free Versatile Data Analysis and Visualization Tool

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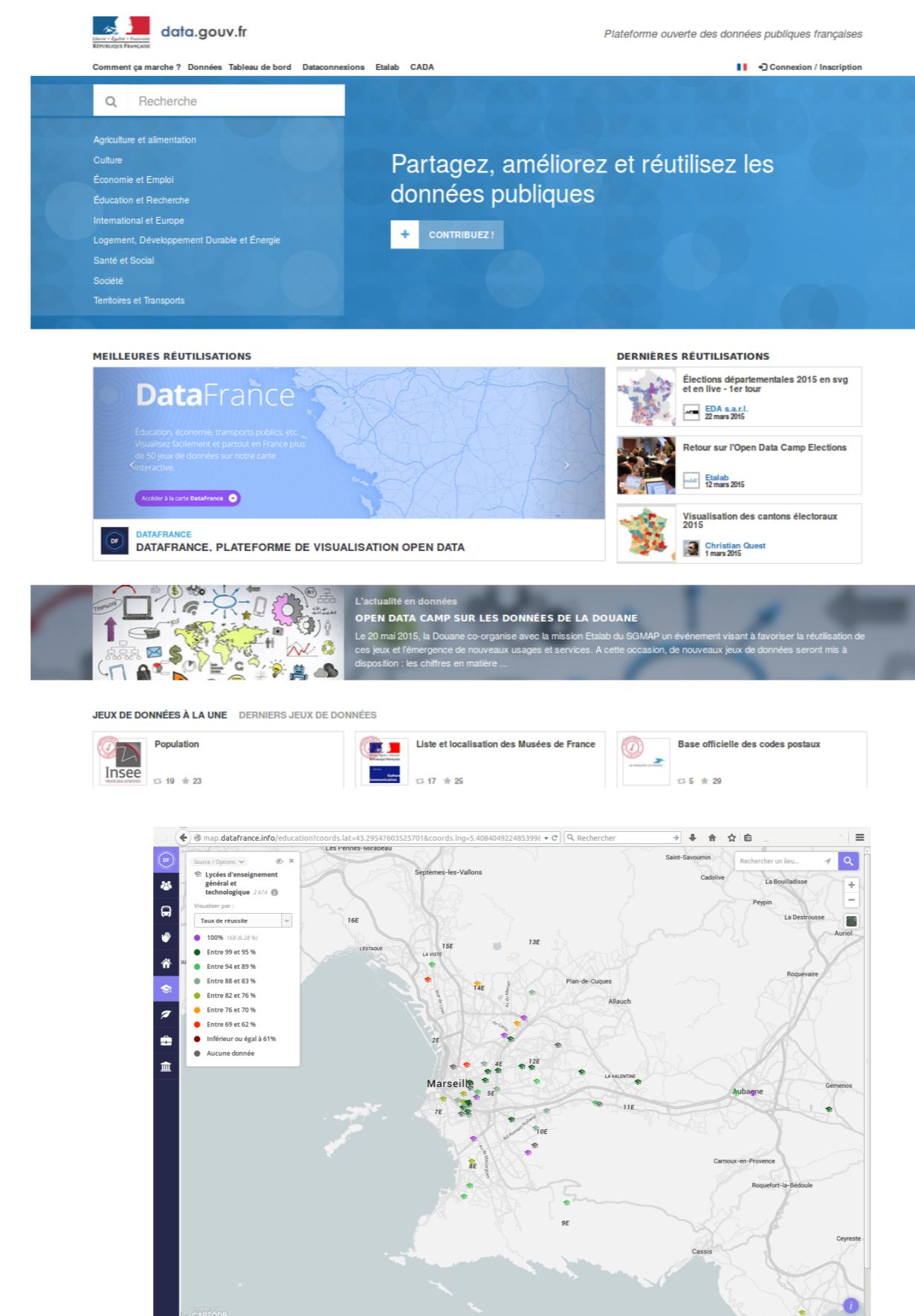
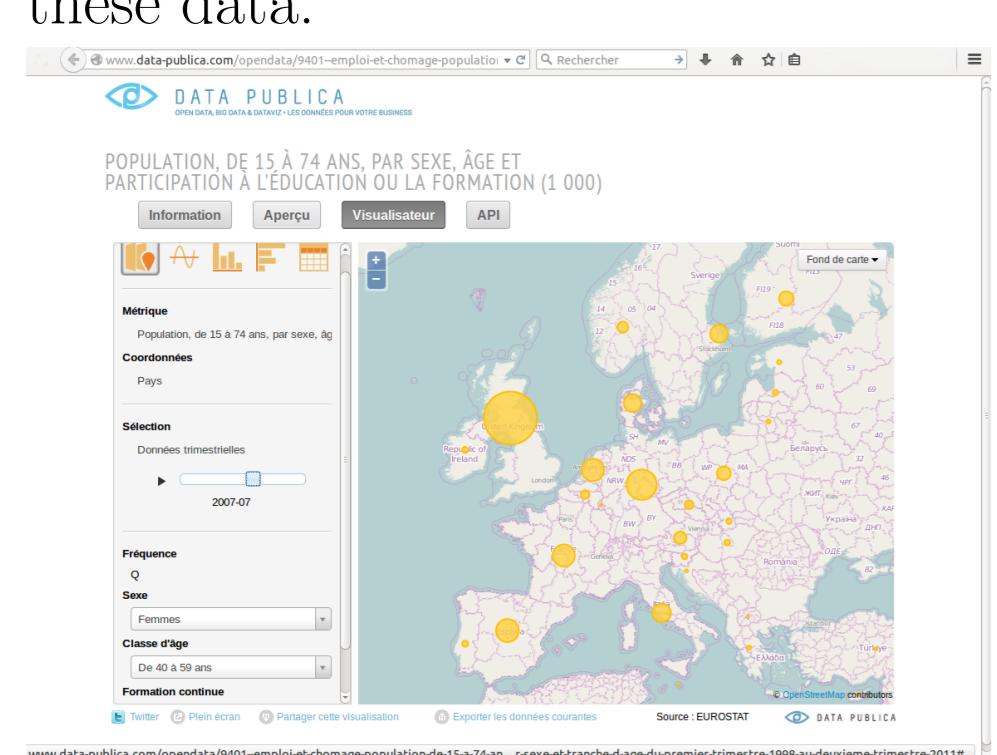
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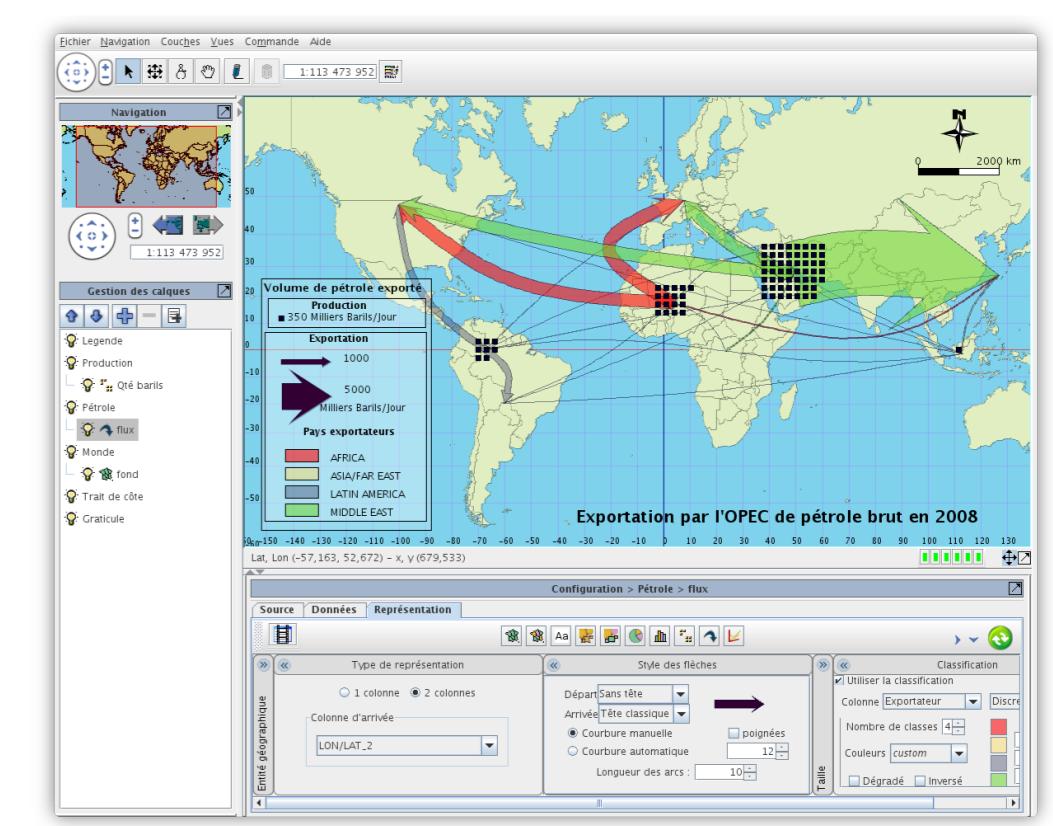
Open Data

Open Data allows citizens to have access to more and more public data. Many of these data are georeferenced and available in a machine readable format such as CSV files suitable for interactive cartographic tools. Some are available on the Web, but they are usually limited to the representation of one variable at the time. This poster shows that ThemaMap is a good candidate tool to build multi variables representations of these data.



ThemaMap Characteristics and Specificities

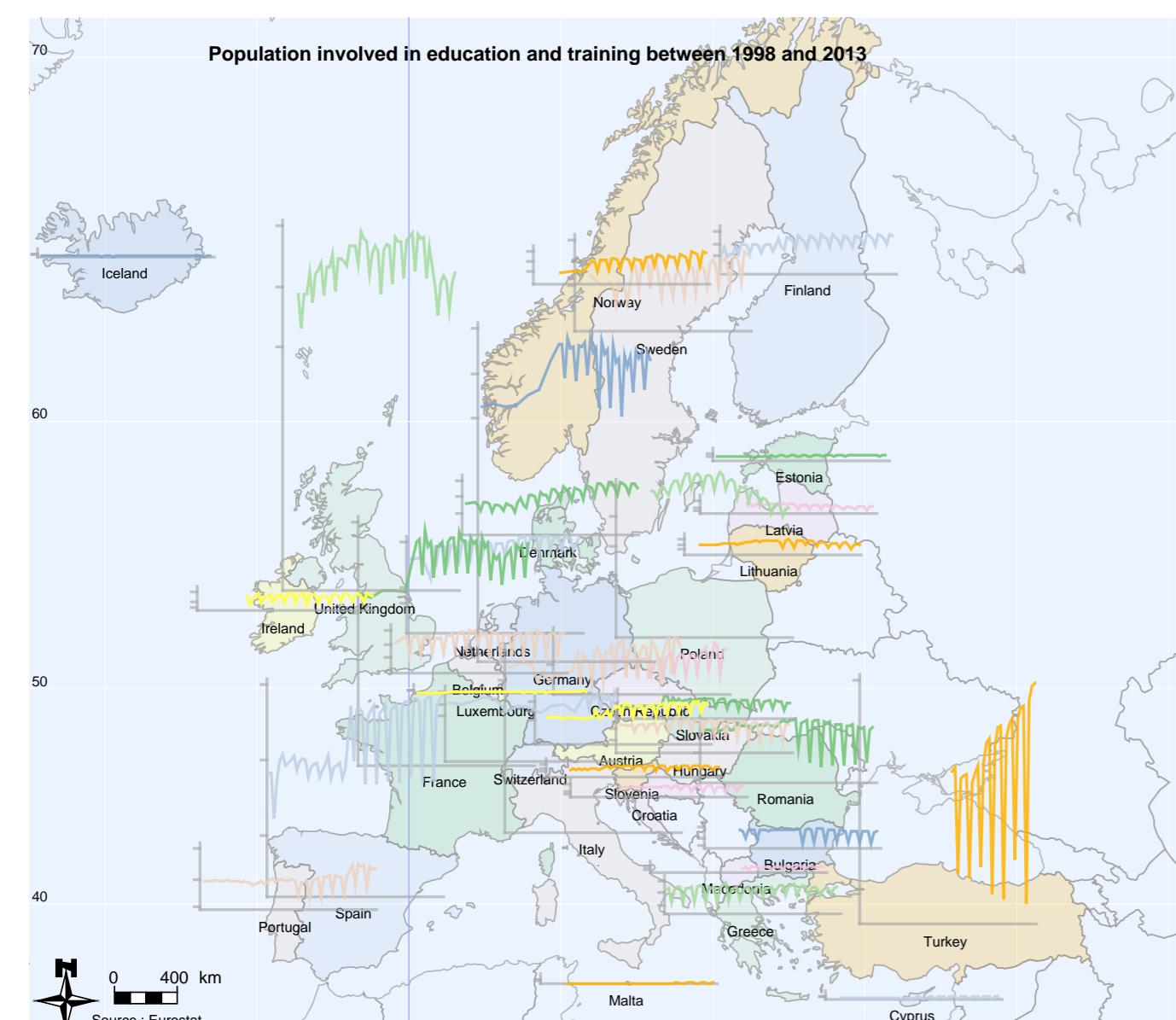
- ThemaMap is an free open-source software developed in Java based on OpenMap developed by BBN technologies
- Available as a standalone app or through the Web
- Thematic maps and online atlases production tool
- Data Processing Tools
- Various representation modes independent from the data source
- Animations — Multi dimensional data exploration
- Data export in CSV and GML
- Maps export as graphics either raster (PNG, GIF) or vector (SVG, PDF, KML)
- Projects saved as properties, optionally with bundle data



Population 15 to 74 years, by sex, age and participation in education or training

<https://www.data.gouv.fr/fr/datasets/population-de-15-a-74-ans-par sexe-age-et-participation-a-1-education-ou-la-formation-1-000-dp/>

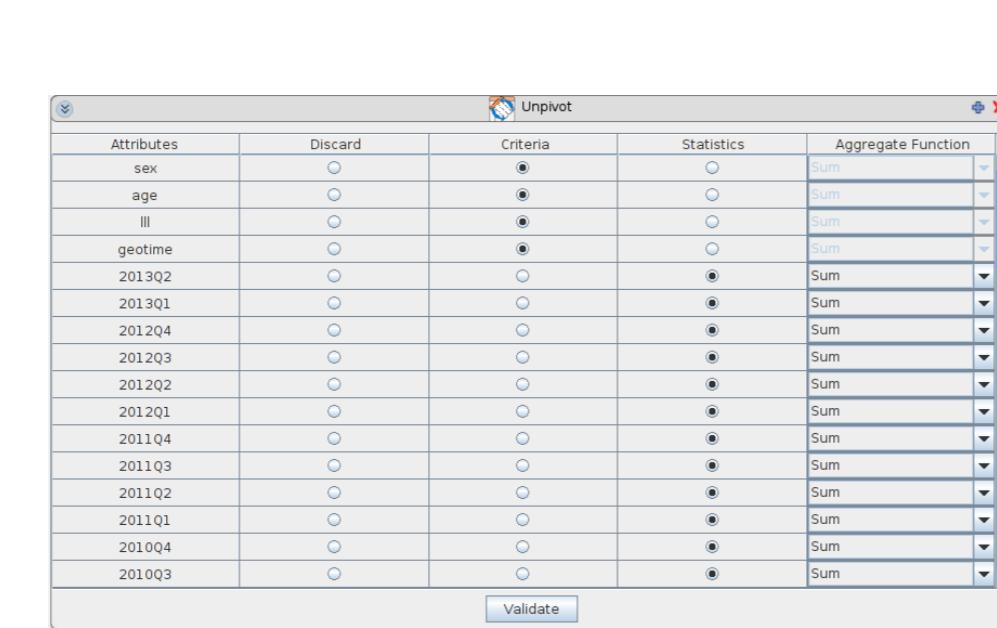
Themamap can be used to quickly explore the data using standard representation to detect trends.



The population is defined for each quarter from 1998 to 2013 leading to a very large number of data columns. The use of the "Unpivot" tool (see below) allows to present the data in 2 columns Name/Value. This gives to a less painful definition of the line graphs.

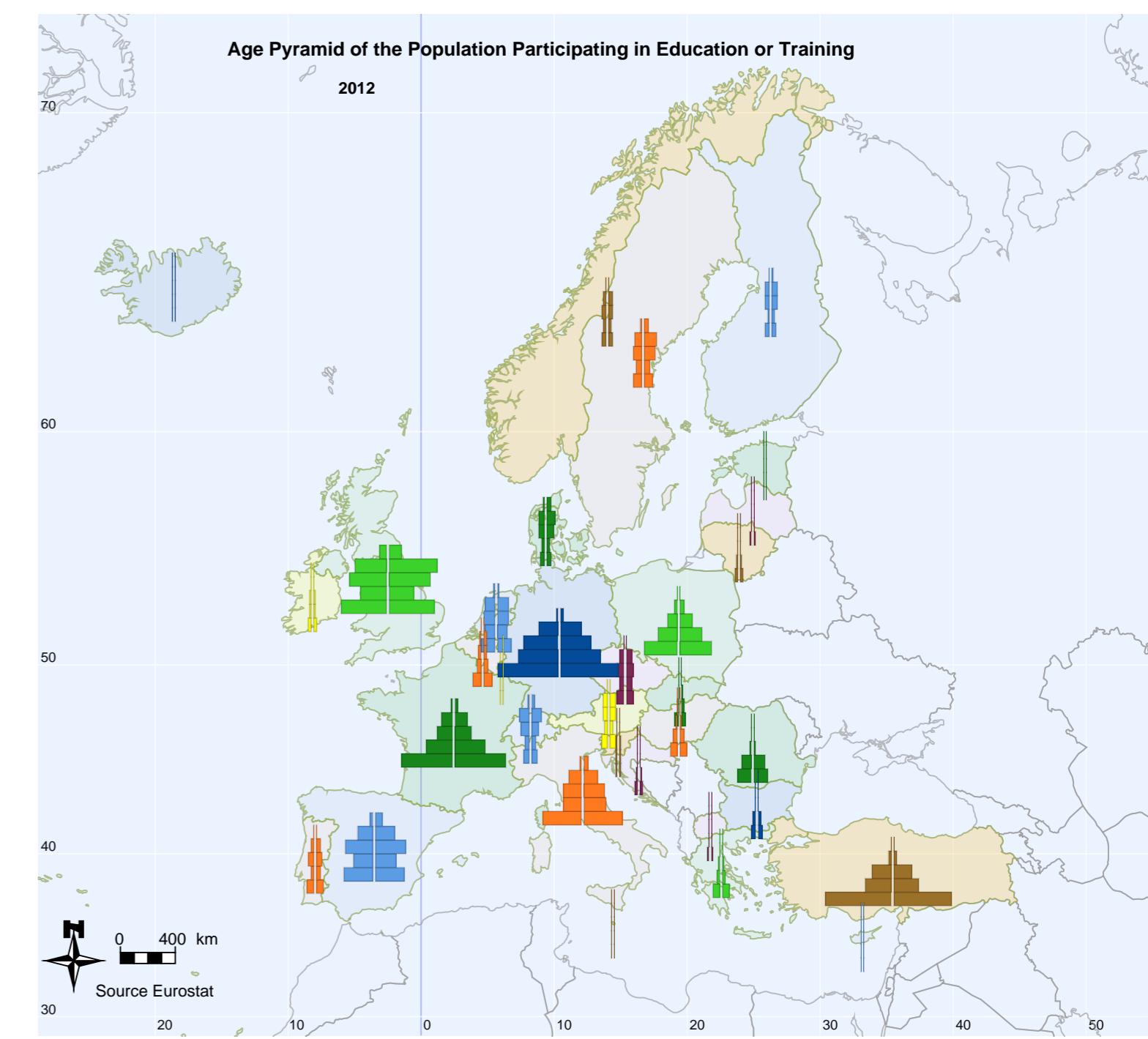
This first map using a line graph clearly shows that the value for the quarter Q3 is often 0. In order to study the time evolution over years, data for the first quarter are significant. This leads to the two maps below.

The data can be selected, filtered, grouped to construct relevant maps.



Female Male

Histograms are easily customized to produce age pyramids.



French Baccalauréat

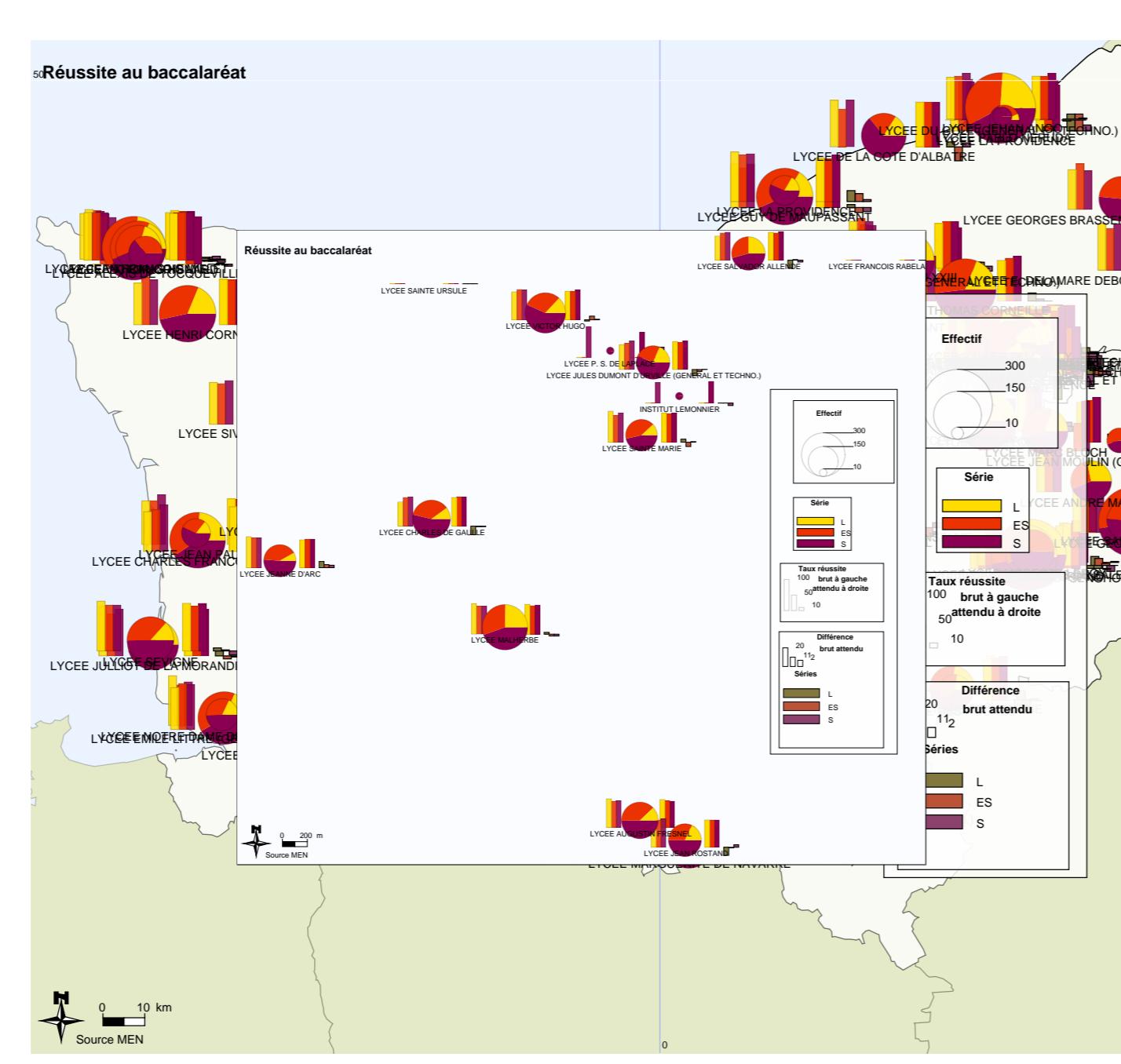
<https://www.data.gouv.fr/fr/datasets/indicateurs-de-resultat-des-lycees-denseignement-general-et-technologique/>

This example shows how ThemaMap allows the representation of multiple variables on a single map.

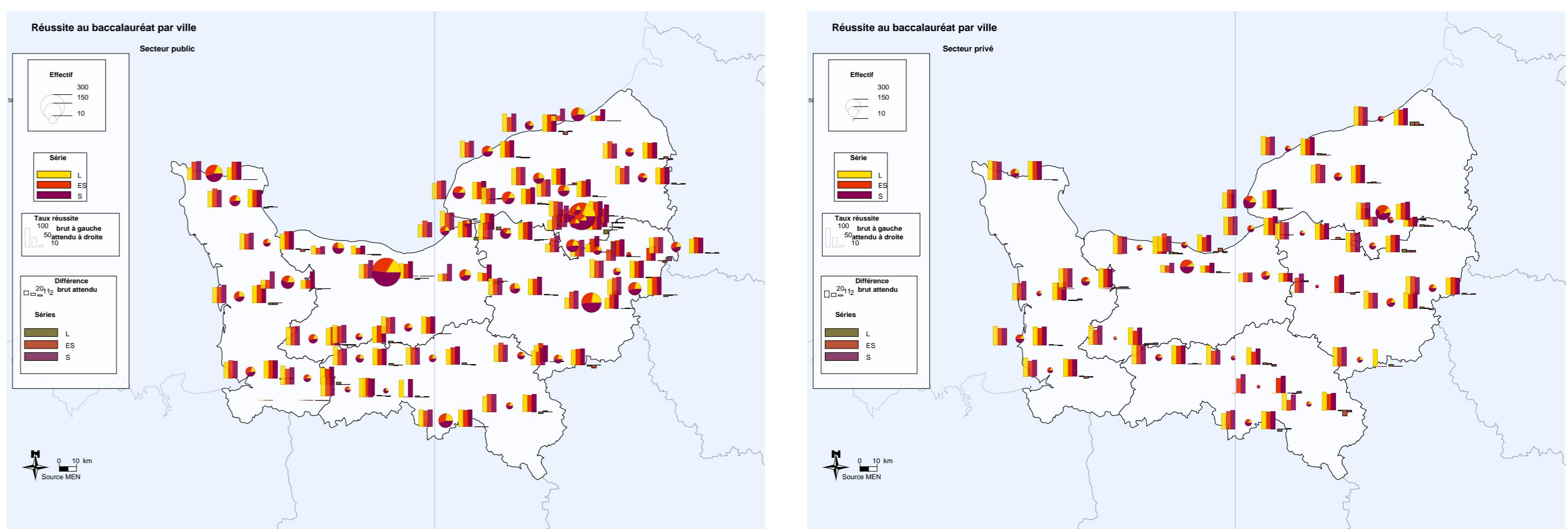
The first maps presented here aim to compare the results of students to the French *Baccalauréat*. They use for each *lycée* a pie to show the relative weight of each series and three histograms to show the exam results.

As the map represents every *lycée*, zooming and panning is mandatory to explore the data.

The other maps shows an alternative where the figures are grouped by cities.



Using the animation tool, the user may circulate through multiple map representations depending of the values of several variables. The result can be exported as a single dynamic HTML page or as a bunch of static images.



Atlas de la pesca artesanal peruana

ThemaMap has been used to produce all the maps and tables of that atlas. The IMARPE (*Instituto del Mar del Perú*) has the data ownership.

The first map shows custom placement of the features (pies and labels). The second map shows flows. Follows two examples of tables formatted thanks to the spread sheet like ability to compute a new data column using a formula. The last image presents maps using a grid kernel smoothing method and the ability to put several maps on a single sheet as an alternative to animation.

