# ESPON Online Mapping Tool

RIMAP User's Manual

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- Only available to expert mode

# Introduction

RIMAP (Rich Internet Mapping Tool) is a Project included in the ESPON 2013 program.

ESPON (European Observation Network for Territorial Development and Cohesion) projects cover a wide range of research with the aim to give support to the development and cohesion territorial policies

The development of the Scientific ESPON tools is targeted to policy regulators in all the territorial levels and to socio-economic Scientifics and students

RIMAP is conceived for an On-line tool development upon ESPON 2013 Database. This tool is online, available via ESPON website and provides a toolbox to visualize and analyze data in maps and diagrams.

ESPON 2013 Database stores hundreds of indicators keeping the observation of the socio-economic behavior in the European territories.

These indicators are provided by other ESPON projects and from other sources such as EUROSTAT or EEA.

RIMAP is interactive, includes some analysis tools and aims to disseminate the ESPON labor.

More information about the ESPON program and the RIMAP Project can be found in these links:
www.espon.eu
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/rimap.html

RIMAP has been developed by:

AIDICO
INSTITUTO TECNOLÓGICO DE LA CONSTRUCCIÓN

**Technological Institute of Construction**
http://www.aidico.com

# 1. Overview

The ESPON 2013 Programme, the European Observation Network for Territorial Development and Cohesion, was adopted by the European Commission on 7 November 2007.

Under the ESPON 2013 Programme new projects are contracted by the Managing Authority following a competitive process.

The projects cover a wide range of research areas in order to support policy development related to territorial development and cohesion. The focus is on territorial structures, trends, perspectives and impacts of sector policies.

The general objectives of scientific platform projects within the ESPON 2013 Programme are the following:

- Contribute to the consolidation of the scientific platform of the ESPON 2013. Programme and to the territorial knowledge base needed for informed policy formulation and application

- Ensure data, territorial indicators and tools that are usable for policy makers and practitioners at all administrative levels - Respond to needs for public access to the ESPON data and tools

- Ensure availability of comparable and robust regional (and urban) data at as detailed geographical scale as possible as well as statistical quality control and data validation

- Ensure that European standards for spatial referencing and storage of data are respected (such as applying the ETRS1989 standard and the Inspire Directive).

- Support a concrete application and use of data for policy, strategy and planning processes, including tools and techniques for forecasting and modeling.

## 1.1. ESPON - RIMAP Web Mapping Tool

RIMAP is conceived for an On-line tool development upon ESPON 2013 Database. This tool is online, available via ESPON website and provides a toolbox to visualize and analyze data in maps and diagrams.

RIMAP is fully compatible with the ESPON 2013 Database and queries it for building the maps and diagrams that its users need and comparing between various NUTS system. Thus the user could select data through its interface and display datasets or maps. By the way, RIMAP is considered to be complementary to the ESPON Online MapFinder and ESPON Hyperatlas and to allow users to access to a fixed set of most relevant maps develop during the

carrying out of several projects, but also to let them to query and display several kinds of maps attending their information needs.

The ESPON Database 2013 includes hundreds of indicators that can be used for mapping. By the other hand, RIMAP should have a toolbox allowing them to do some actions as print, zoom-in & zoom-out and save the map as a file.

RIMAP is accessible since different devices with a web browser and internet connection: computers, tables, mobiles and TVs. This facilitates the access to users while increases the possibilities.

RIMAP is scalable, in order to avoid improve the functionalities or add new indicators in the future.

RIMAP is developed in HTML5 and based in Rich Internet Applications (RIA). Rich Internet Applications are web applications that have the most features of traditional desktop applications. These applications use a standard web browser to run and through supplements or through a virtual machine to add additional features.

The main objective of RIMAP is to provide access to and enabling using the ESPON knowledge base in an easy and highly digestible manner. This will be done by giving people the possibility to produce, visualize, analyze and download maps and diagrams of data and indicators that are directly coming from the ESPON 2013 Database.

RIMAP aims to fill the gap between disseminating data in tables and disseminating data in fixed and interactive maps.

RIMAP Draft version is available in http://tool.rimap.aidico.es. RIMAP final version will be available in http://rimap.espon.eu.

To show the information, three steps must to be taken: Select What (Indicator), Select Where (NUTS Level) and Select When (Year).

Next figure shows the look and feel of RIMAP divided into several areas.

**Indicators Classification** Select between theme, project or policy

**Indicators Search bar**

**NUTS** Level Selector

**Study Area.** Selection, creation and delete

**Pan and Zoom** control Selector

**Main Tool Bar**: Profile, Share, Print, Export, Help and Map Settings.

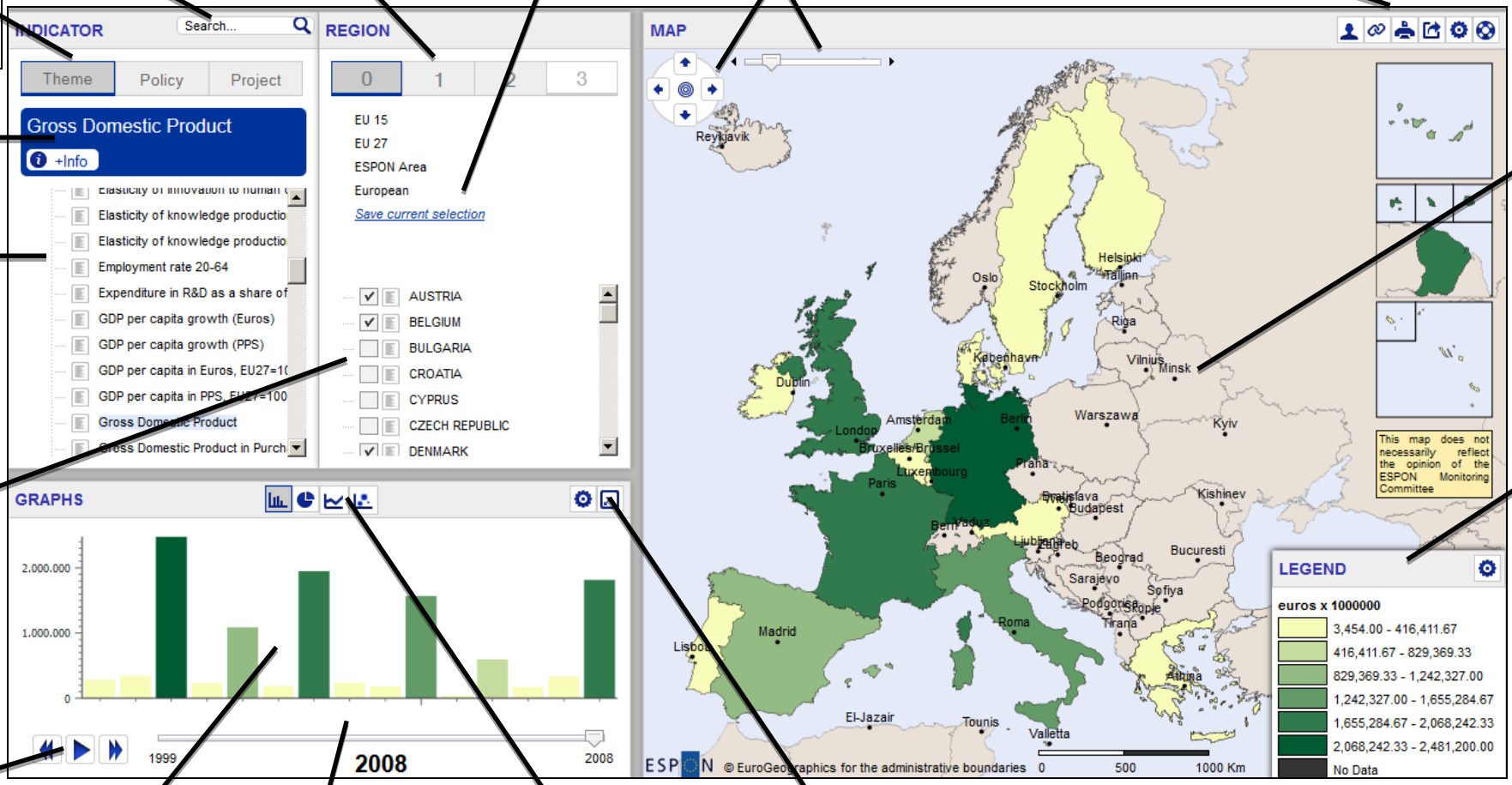
Selected Indicator Description

**Indicator Selection.** Select one indicator to visualize on the map and the graph

**Region Selection.** Select regions to visualize on the map and graph.

**Map.** Regions are mouse sensitive. Mouse over: show information. Mouse click: region selection

**Legend and legend settings**. Legend window is draggable.




**Animation buttons**.

**Data Graph**.

**Timeline**

**Graph Type selection**: bar, chart, time series and scatter.

**Graph tool bar.** Settings and Switch.

**Figure 1: RIMAP Scheme**

# 2. Main Tool Bar

At the top right of the application, the main tool bar (figure 1), keeps some buttons offering several options:

- Profile Selection: Basic/Expert mode
- Share.
- Print.
- Export.
- Map Settings.
- Help.

**Figure 2: Main Tool Bar**

## 2.1. Profile Selection. Basic/Expert mode.

Two well differentiated User profiles have been defined:

- Basic Mode. This mode should be quite simple, offering the most important functionalities.
- Expert Mode. This mode will integrate all the possibilities, integrating some analysis functionalities.

To switch from one profile to another, the user has to click the button  at the main tool bar.

This handbook contains all the functionalities available to the tool. An asterisk has been used to highlight those features available only to the expert profile.

## 2.2. Share

Nowadays, the Information Society uses the networks to share knowledge. Thus, the user can share a link to the map clicking the button  at the main tool bar.

Once this option is selected, a window is open showing the link and offering several ways to share it: e-mail, facebook, twitter and linkedin.

## 2.3. Print

User can print the Map clicking in the corresponding button  at the main tool bar.

## 2.4. Export

RIMAP facilitates to export information through a report in different formats.

To do it, user has to click the button  at the main tool bar.

After this, several options (figure 2, export options) are shown to choose the export format:

- Export map image. Some formats are available: .pdf, .png and .jpg.
- Export data: An .xls file will be created containing data from the indicator selected.


**Figura 3: Export Options**

Once selected one option, a window is suggesting two file options: open and save (Figure 3, Save Window).

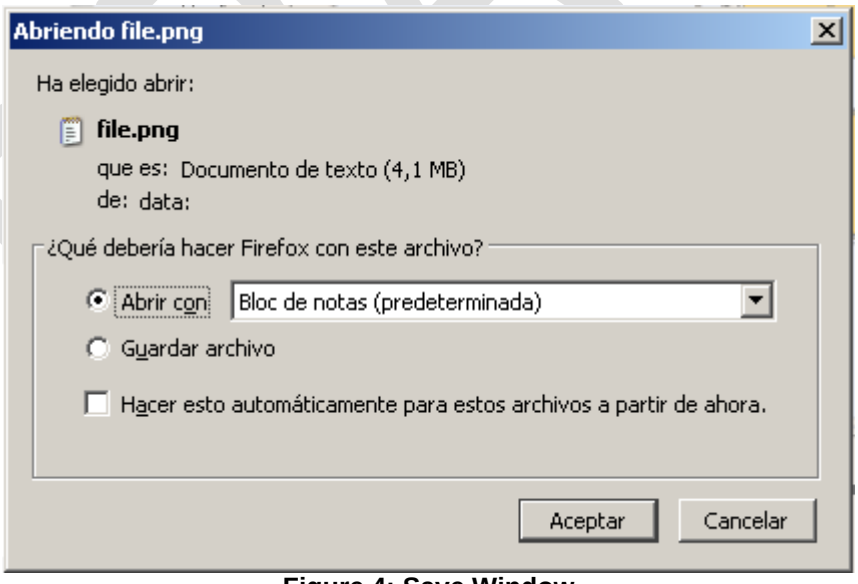



**Figure 4: Save Window**

In case of select Open, the file will be shown trough the default

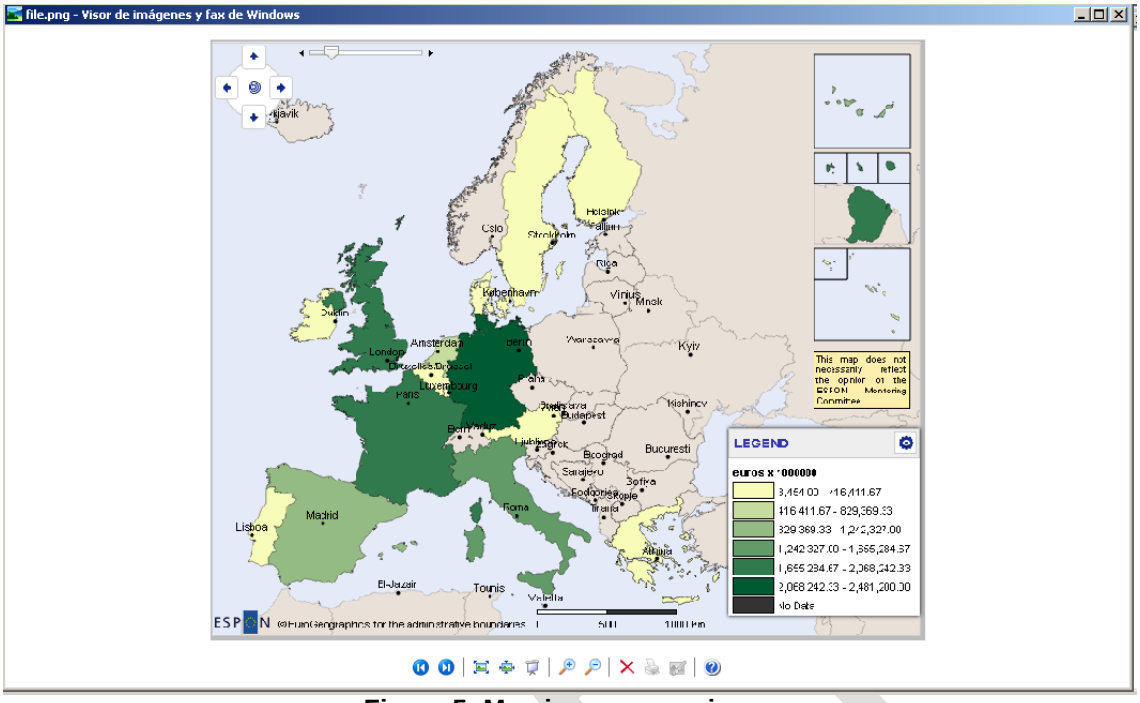



**Figure 5: Map image .png viewer**

In case of select *Save file*, a system window will be open to indicate the folder where the file must be saved.

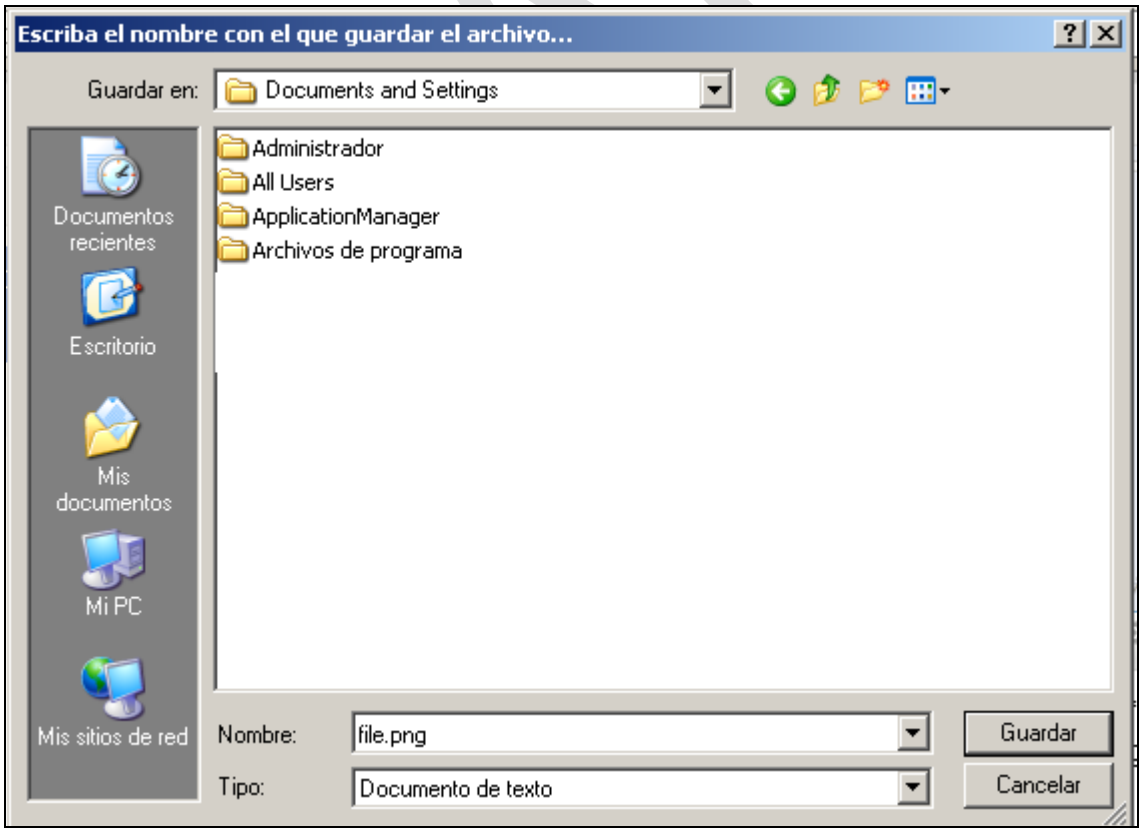



**Figure 6: Save file window**

## 2.5 Help

Though RIMAP has been developed thinking in the usability of the user, some help tools are provided to explain how it works.

To access to these tools, user must click over the button  . Then, a menu appears showing two help tools:

- User Guide. Is a .pdf document which describes all the functionalities included in RIMAP.
- Video-Tutorials. Some videos have been integrated showing the most regular user cases.

# 3. Indicator selection

The main goal of RIMAP is to visualize and analyze the value of a set of indicators contained into the ESPON Database at different regional levels (NUTS) along time.

User can select the indicator clicking over it in the tree sited at the left top.

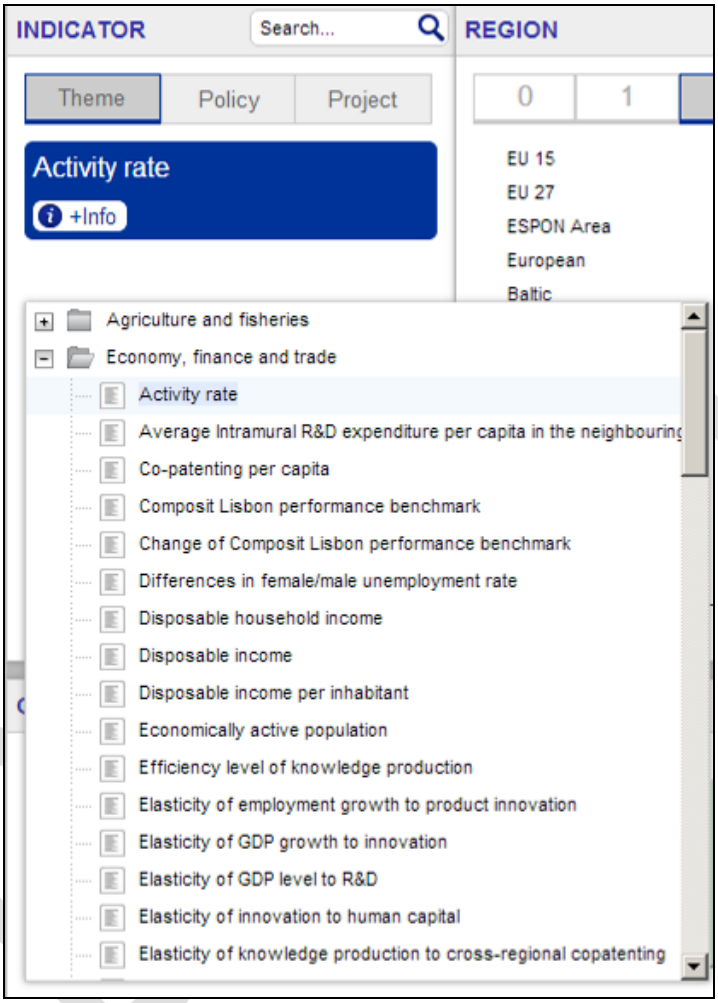



**Figure 2: Indicators list**

In the Expert mode, Indicators are classified by Theme, Project or Policy. There is a classification bar to select between those options clicking over it.

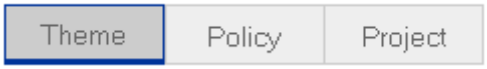



**Figure 8: Indicators Classification Bar**

## 3.1. By theme

By default, indicators are classified by theme. Currently, ESPON Database contains the following themes:

- Agriculture and fisheries.
- Economy, finance and trade.
- Education.
- Environment and Energy.
- Governance.
- Health and Safety.
- Information Society.
- Labor Market.
- Population and Living conditions.
- Science and Technology.
- Territorial Structure.
- Transport and Accessibility.

In the basic mode, only ESPON Core Indicators are available.

## 3.2. By Policy *

Indicators are classified by policy. Currently, ESPON Database contains the following policies:

- Access to services, markets and jobs.
- Economic performance and competitiveness.
- Environmental qualities.
- Global competitiveness of the regions based on strong local economies.
- Inclusive growth.
- Innovative territories.
- Integrated development in cities, rural and specific regions.
- Other.
- Polycentric and balanced territorial development.
- Polycentric territorial development.
- Smart growth.
- Social inclusion and quality of life.
- Spring 2013.
- Summer 2010.
- Sustainable growth.
- Territorial connectivity for individuals, communities and enterprises.
- Territorial Cooperation and Governance.
- Territorial integration in cross-border and transnational functional regions.

## 3.3. By project *

Indicators are classified by ESPON project. Currently, ESPON Database contains the following projects:

- ACC Update.
- ATTREG.
- CREA Update.
- DEMIFER.
- DEMo Update.
- EDORA.
- EsaTDOR.
- ESPON Climate.
- ESPION M4D.
- ESPON TC.
- INTERCO.
- KIT.
- ReRisk.
- TEL Update.
- TERCO.
- TIPTAP.

### 3.4. Keyword search

Taking account ESPON Database contains more than 500 indicators; a Keyword Search Bar is available offering the search results as the user is typing (see Figure).

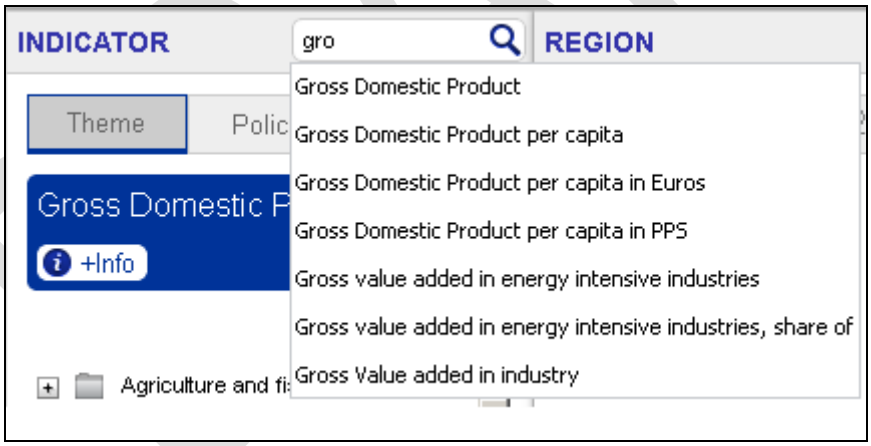



**Figure 9: Search results**

# 4. Geographic selection

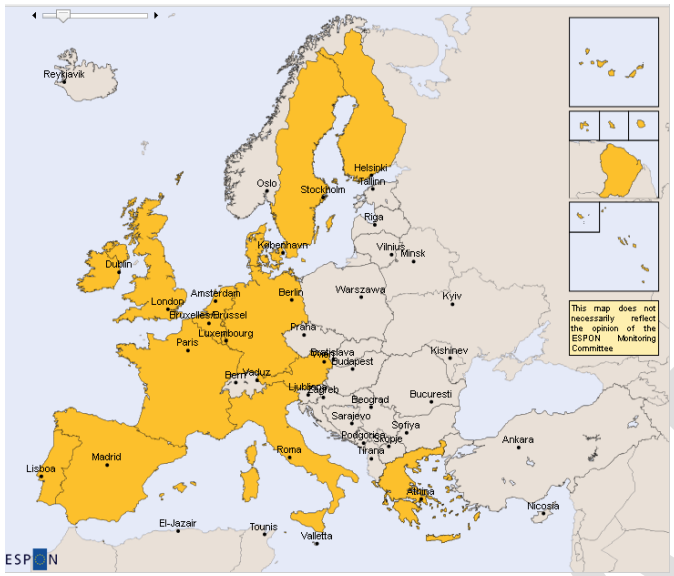
## 4.1. Elementary Zone. Selection of country, regional, subregional or departmental areas.

The geographic elementary zones in RIMAP are NUTS (Nomenclature of Territorial Units for Statistics).
There are 4 NUTS levels:

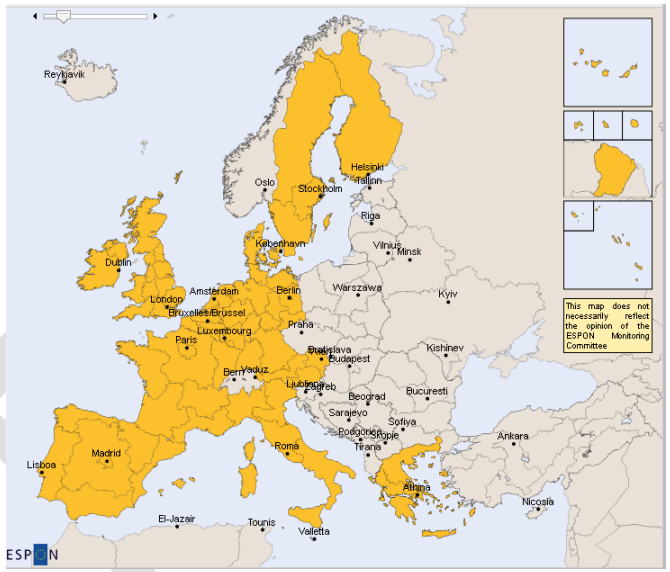
- NUTS0: Country Level.
- NUTS1: Regional Level.
- NUTS2: Subregional Level.
- NUTS3: Departmental Level.

User can change the NUTS LEVEL clicking over the NUTS Level Bar (see Figure). This action will refresh automatically the Map and the Graph.

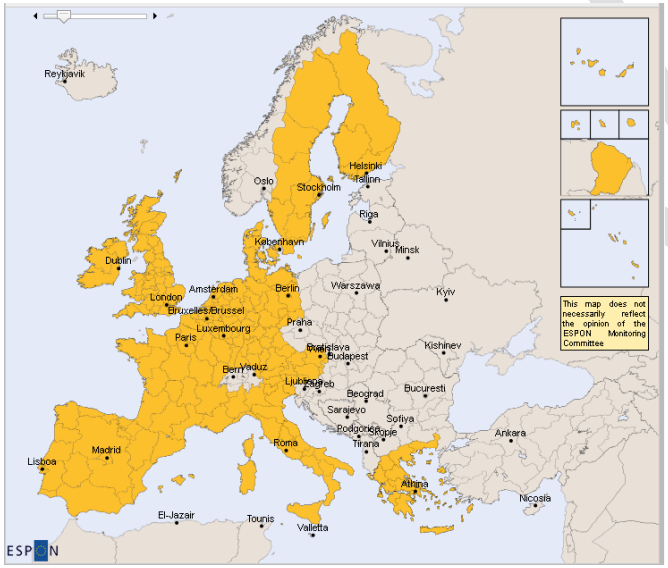

**Figure 10: NUTS Level Bar**



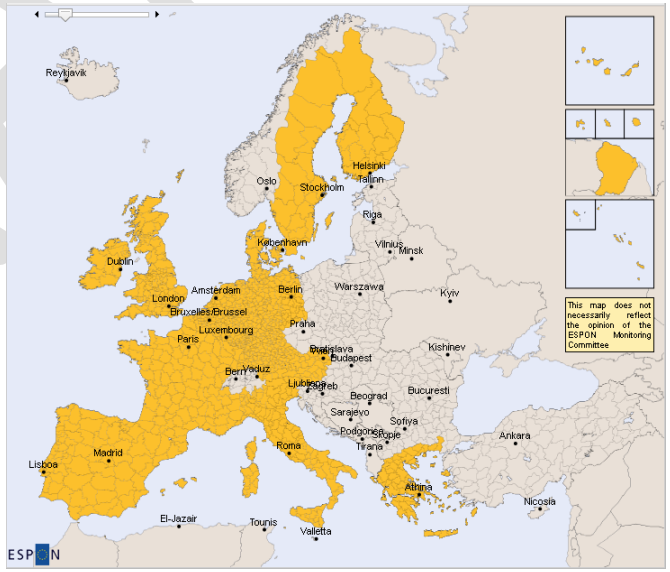

NUTS0 – COUNTRY LEVEL




NUTS1 – REGIONAL LEVEL




NUTS2 – SUBREGIONAL LEVEL




NUTS3 – DEPARTMENTAL LEVEL

**Figure 11: NUTS Levels Detail**

## 4.2. Study area(s). Predefined, created by user.

Territories can be grouped in Study Areas order to facilitate the behavior of an indicator in all those territories.

Default Study Areas

RIMAP has defined some Default Study Areas:

- EU15.
- EU27.
- ESPON Area.
- European.
- Baltic Region (NUTS2 Level) *
- Mediterranean Region (NUTS2 Level) *
- Danube Region (NUTS2 Level) *
- Northwest Region (NUTS2 Level) *

These Study Areas can be selected at the top of the Region Area.

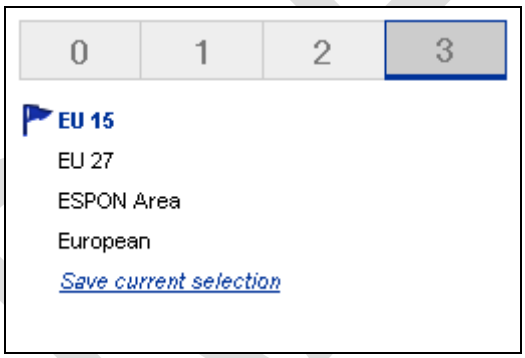



**Figure 12: Default Study Areas**

The selected Study Area is indicated by the symbol .

Custom Study Areas

User can create its own Study Areas being available along the user session following these steps:

1. Territories Selection.
   Territories can be selected or deselected directly on the map (clicking over them) or clicking over the regions list.

2. Save Study Area.
   Once have been defined the Study Area, it must be saved clicking over Save current selection . Then, a window is shown where the name of the Study Area must be introduced.

**Example**: To create a Custom Study Area with only the EU15 Mediterranean countries.

- To select EU15 Study Area. EU 15
- Then, non-mediterranean countries must be deselected clicking on the map.

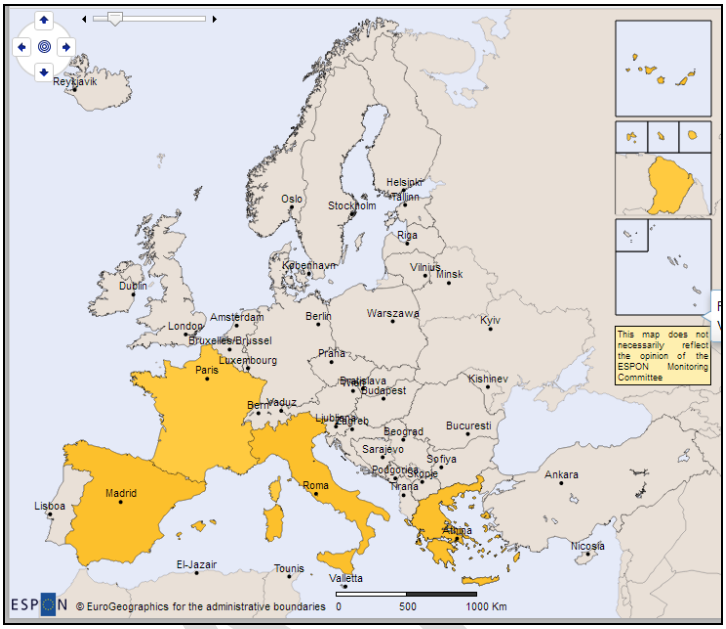



**Figure 13: Mediterranean EU15 custom Map**

- Finally, Save current selection is clicked and and window is open to set the zustome Study Area name, i.e., Mediterranean Countries.


**Figure 14: Set custom zone name**

This new Study Area will be added to the Default Study Areas.


**Figure 15: Study Areas List**

Custom Study Areas can be deleted clicking over .

# 5. Maps

## 5.1. Overview

The Map Area is the most important area in RIMAP. This area will show the indicator value for the territories selected.

Map Area is mouse sensitive, keeping the selection/deselection of territories by clicking, and showing the indicator value when the mouse is over them.

## 5.2. Map Settings *

User can customize the map clicking over the map settings button  at the Main Tool Bar.

Two issues can be customized:

- Capitals. User can set the type, size and color of the capitals symbol, as well as the font type and size of the Capital Label.
- Region borders. User can set the size and color of the region borders to each NUTS Level.

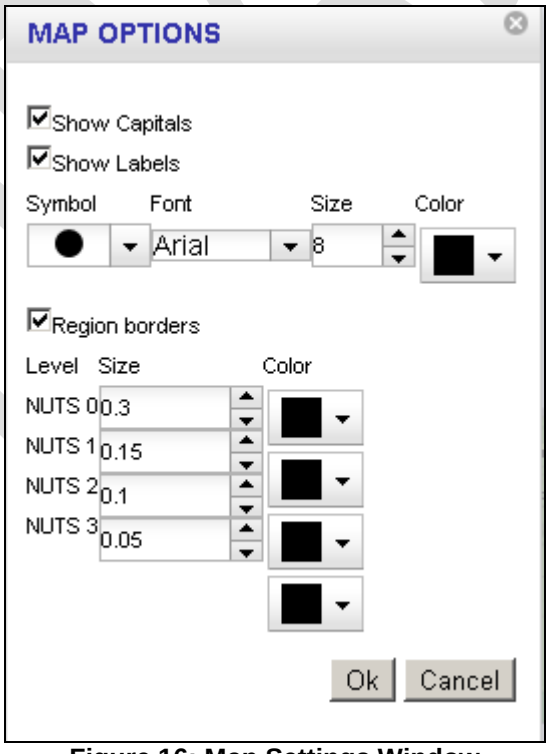



**Figure 16: Map Settings Window**

## 5.3. Legend Settings *

User can customize the indicators representation clicking over the legend settings button  at the Legend Window.

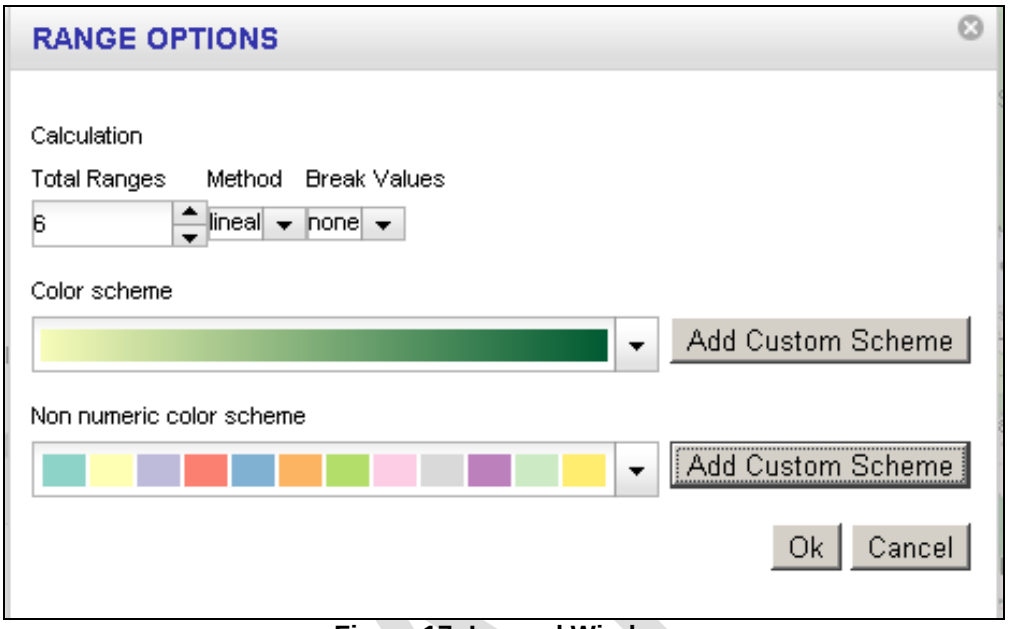



**Figure 17: Legend Window**

Three issues can be customized:

- Ranges calculation method:
  - Number of Total Ranges: From 4 to 12 ranges.
  - The calculation method: Lineal, Quantiles or Jenks.
  - The Break Value: None, Zero, Average or Custom.
- Numerical Color Scheme: User can select between 6 default color schemes.

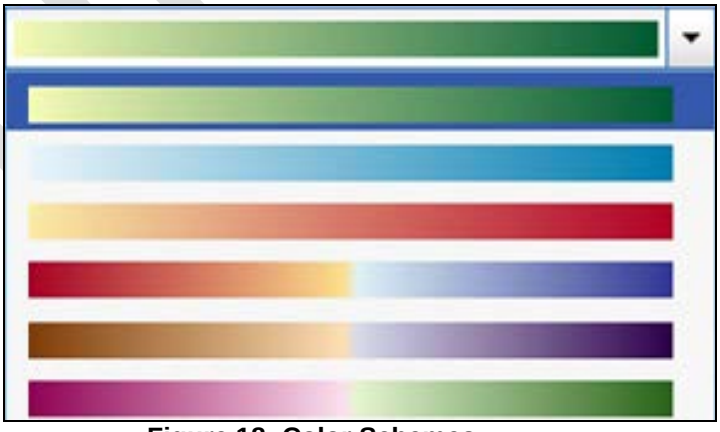


**Figure 18: Color Schemes**

User can create its own custom color scheme clicking over Add Custom Scheme. A window is shown to select the 2 colors (1 scale) or 4 colors (2 scales):


**Figure 19: Customize numerical color window**

- Non-numerical Color Scheme. User can create its own custom color scheme. User can create its own custom color scheme clicking over Add Custom Scheme.


**Figure 20: Customize non-numerical color window**

**Example**. A user wants to change some map settings: the capitals symbol, the capitals label font type and font size, and the region borders size and color.

- Firstly, user will click over Map Settings button.
- The, user has to indicate his preferences in the map settings window: a Red triangle as capitals symbol, Red Courier New 9 as capitals label font, blue color and 1 as region border size to NUTS0 level.

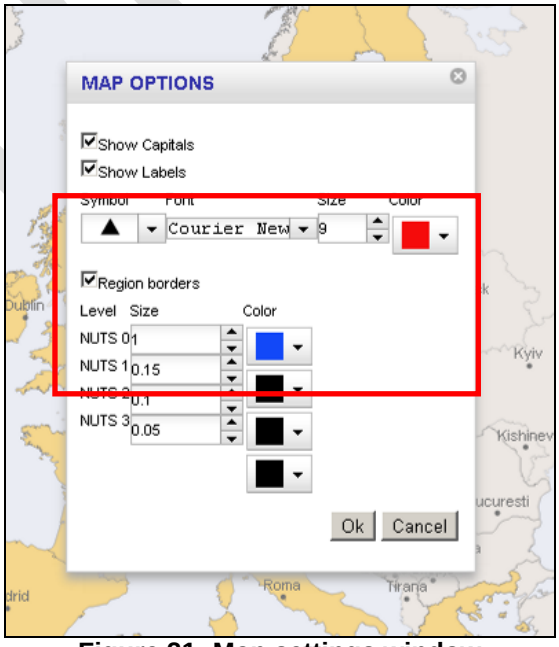



**Figure 21: Map settings window**

With these new settings, the Map will be shown as follow:

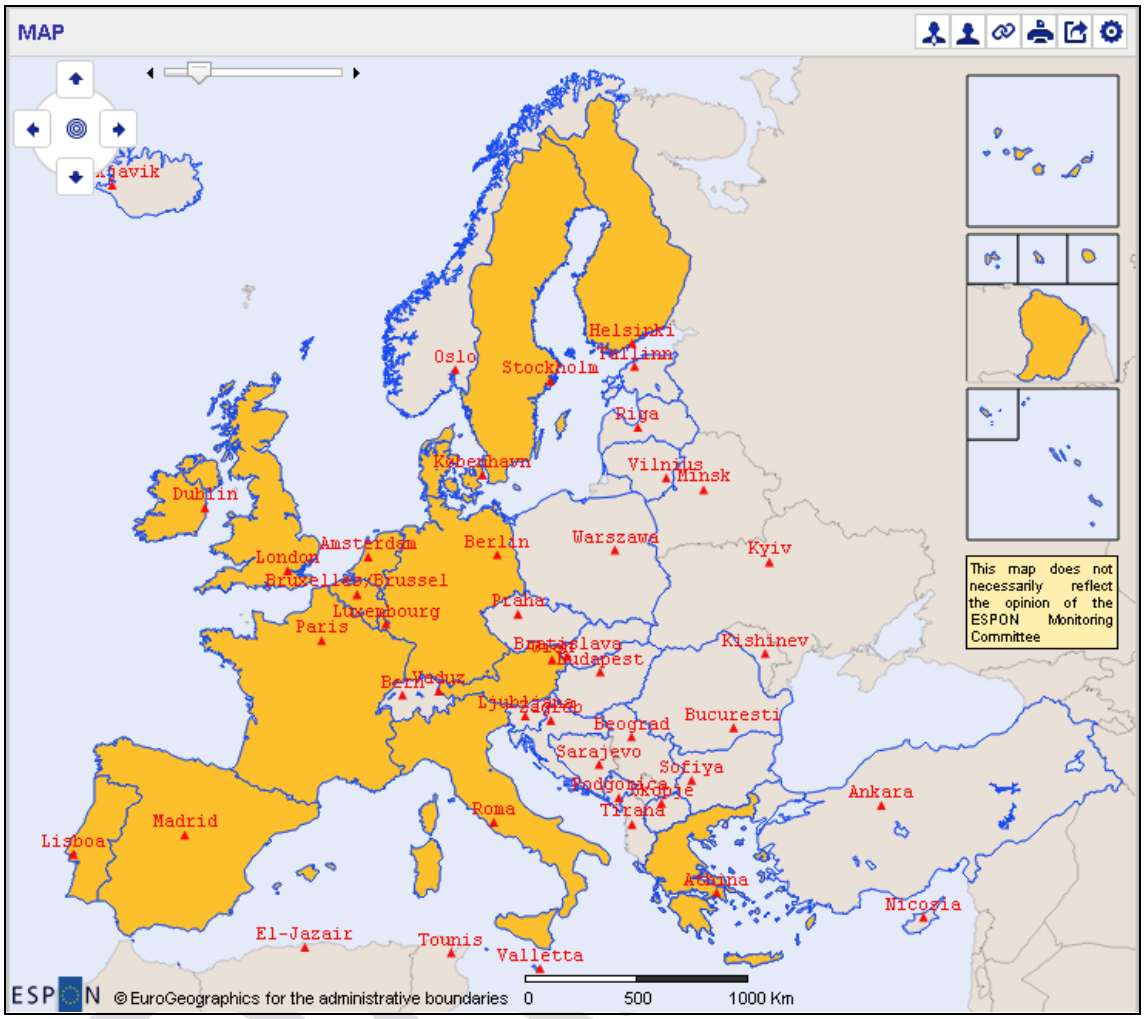



**Figure 22: Customized Map**

# 6. Charts

## 6.1. Overview

Although the main goal of RIMAP is to show the contents of the ESPON Database through Maps, some support charts have been integrated as analysis tools.

Charts are located at the RIMAP bottom left (see figure).

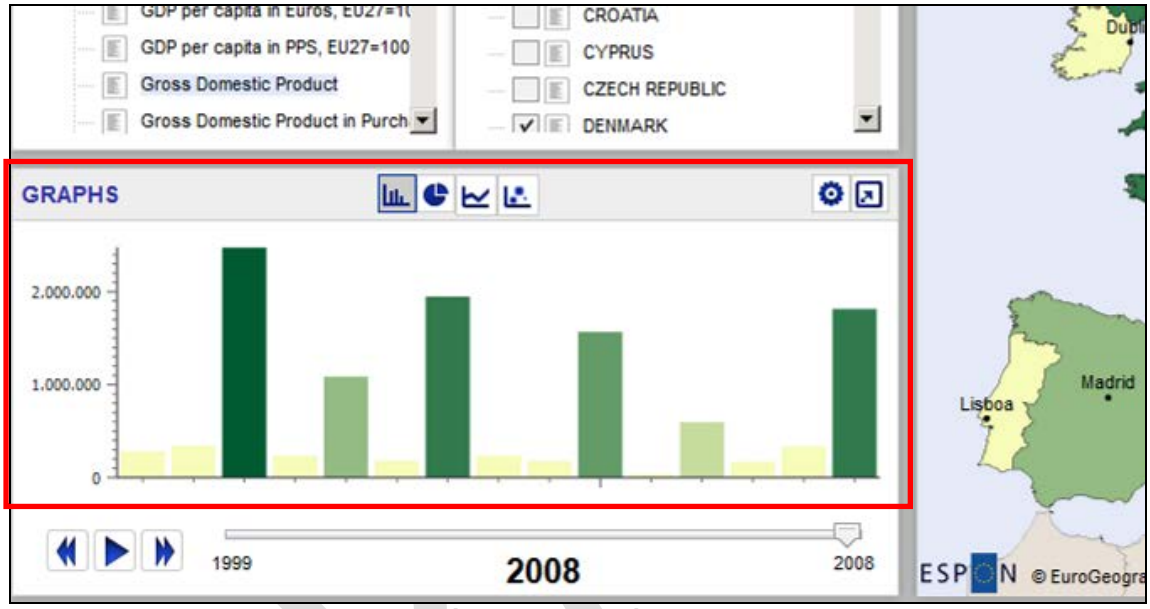



**Figure 23: Graph Area**

At the top of the Graph Region are located two buttons bars:

- Graph type selector bar. Four different kinds of charts are included in RIMAP: Bar chart (by default), Pie Chart, Time Comparison and Scatter.

**Figure 24: Graph type selector bar**

- Graph Options bar. Two buttons are located in this bar: Graph settings button and Switch button. On the one hand, when user clicks over the Graph settings button, a window is open to custom some issues related to the graph. On the other hand, switch button maximizes the graph region exchanging it by the Map Region (see figure).

**Figure 25: Graph Options bar**

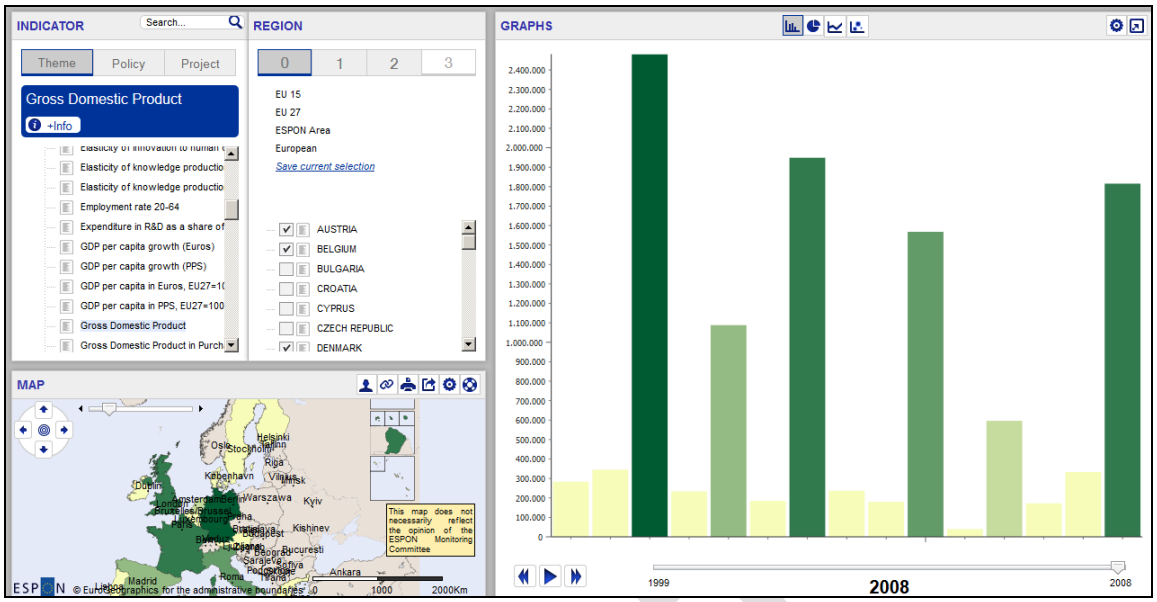



**Figura 26: Graph maximized**

## 6.2. Geographical Comparison

To compare an indicator geographically, two kinds of charts have been included in RIMAP: Bar chart and Pie chart.

### 6.2.1. Bar chart

User has to click over the button  to see the bar chart.

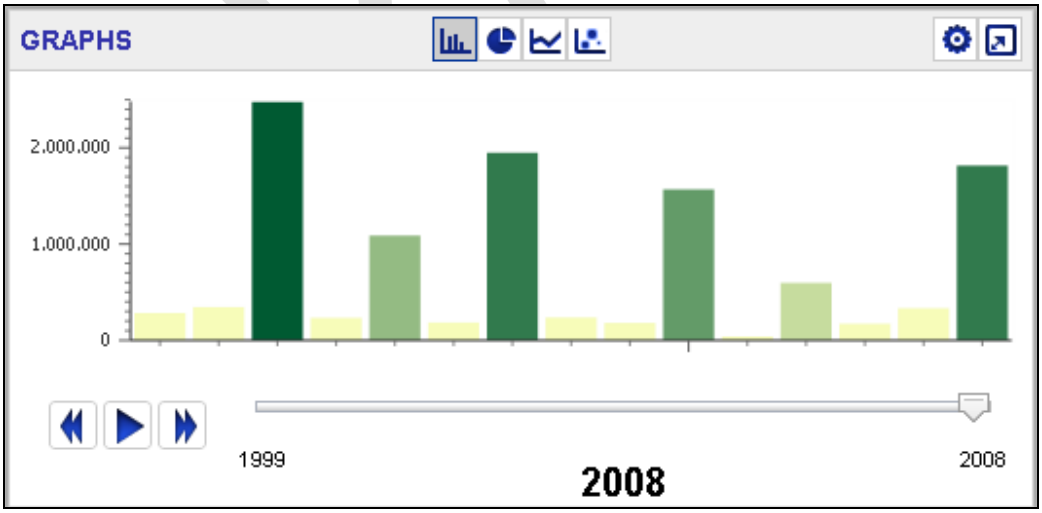



**Figure 27: Bar Chart**

The bar chart is mouse sensitive, so, when user locates the mouse over a bar, it's highlighted (at Map too) and a tooltip appears with information about the name of the region and the indicator value (see figure).

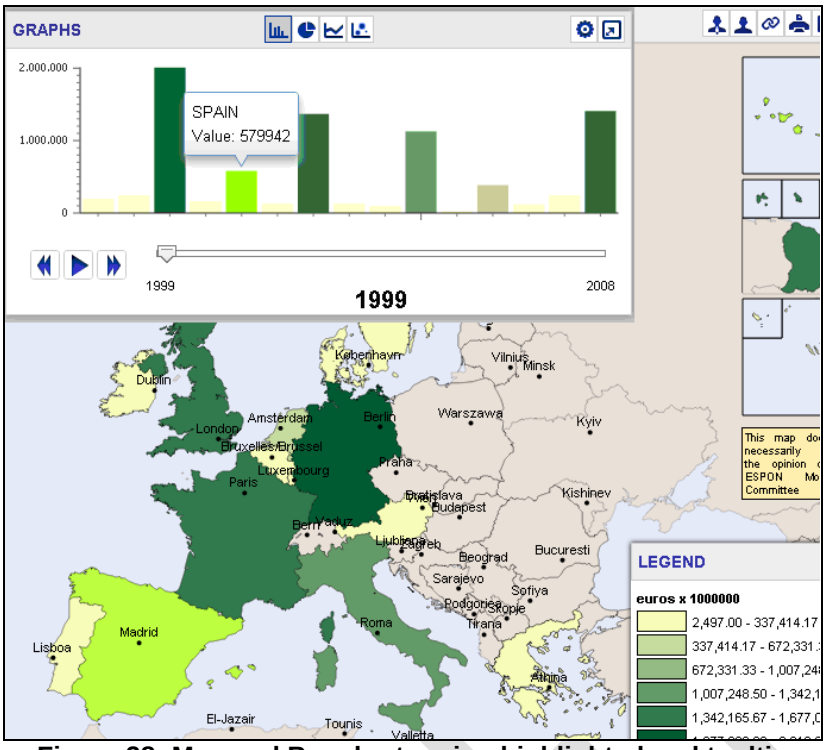



**Figure 28: Map and Bar chart region highlighted and tooltip**

### 6.2.2. Pie Chart

User has to click over the button  to see the pie chart.

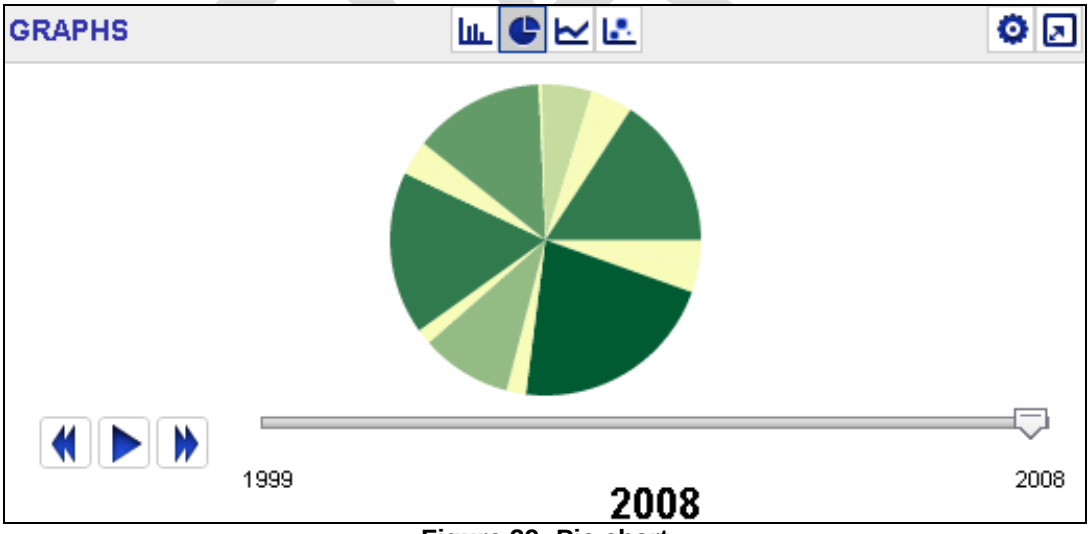



**Figure 29: Pie chart**

The pie chart is mouse sensitive, so, when user locates the mouse over a sector, it's highlighted (at Map too) and a tooltip appears with information about the name of the region and the indicator value (see figure).

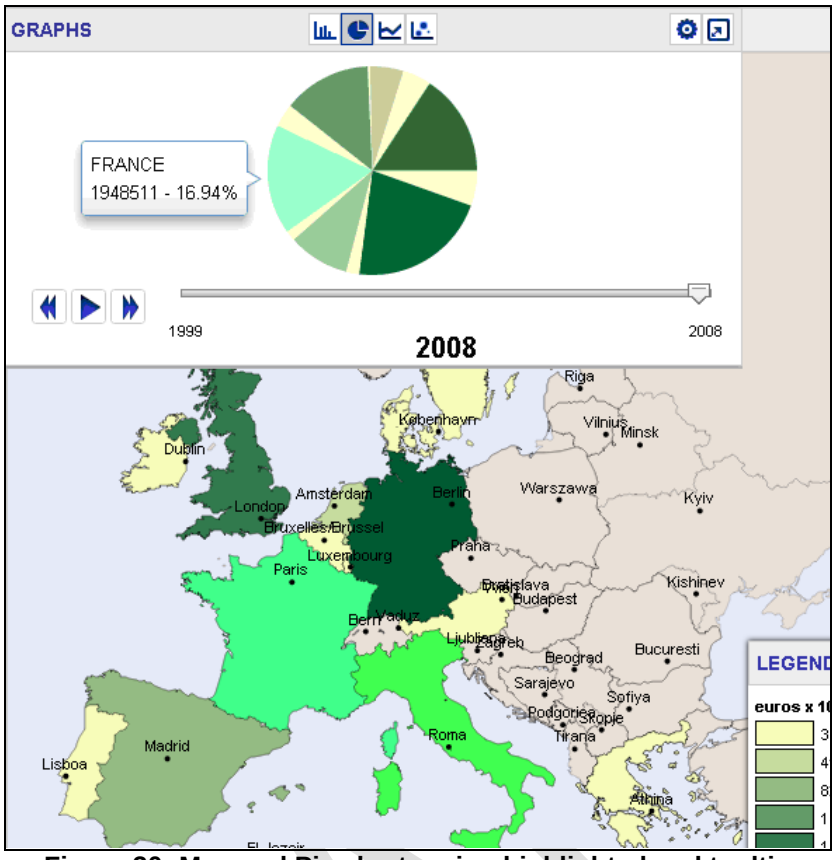



**Figure 30: Map and Pie chart region highlighted and tooltip**

## 6.3. Time Comparison

To see the evolution of an indicator along the time in the Study Area, RIMAP has included a Line Graph.

### 6.3.1. Line Graph

User has to click over the button  to see the Line Graph.

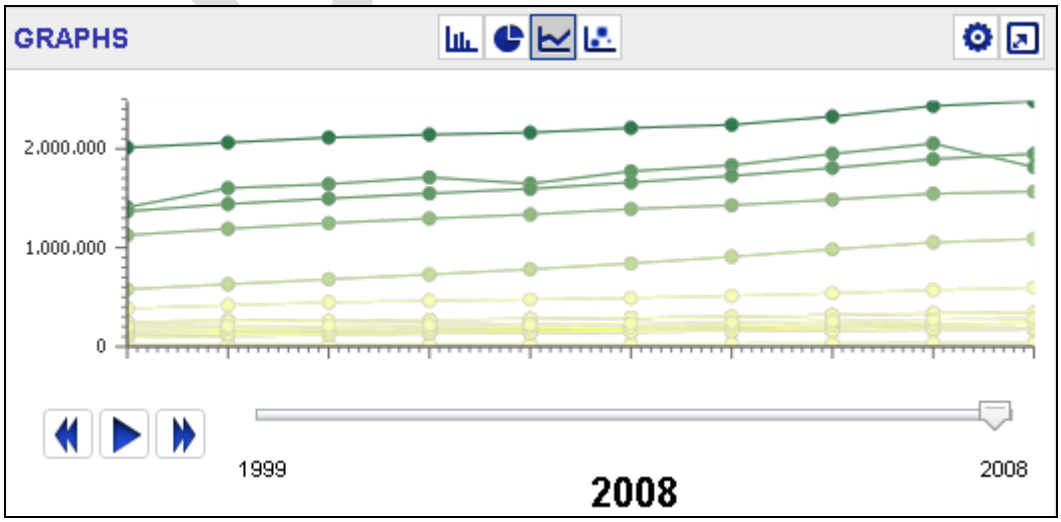



**Figure 31: Line Graph**

Each mark indicates the indicator value of a territory in a given year.
The line graph is mouse sensitive, so, when user locates the mouse over a mark, it's highlighted (at Map too) and a tooltip appears with information about the name of the region and the indicator value (see figure).

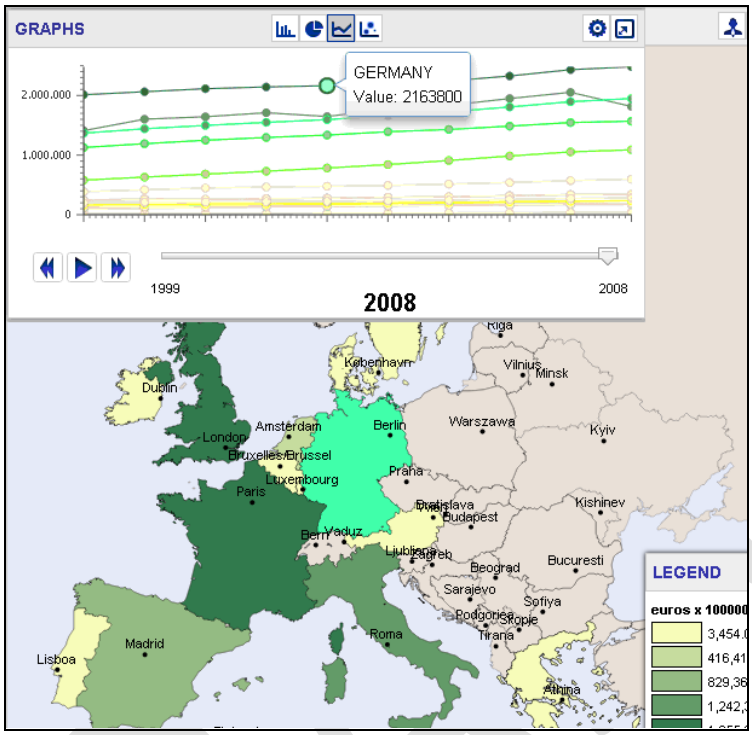


**Figure 32: Map and Line graph region highlighted and tooltip**

## 6.4. Data Analysis

### 6.4.1. Scatter diagram

A common tool to analyze two indicators at same time is the Scatter Diagram. In RIMAP, user can access to the tool clicking over the button  .

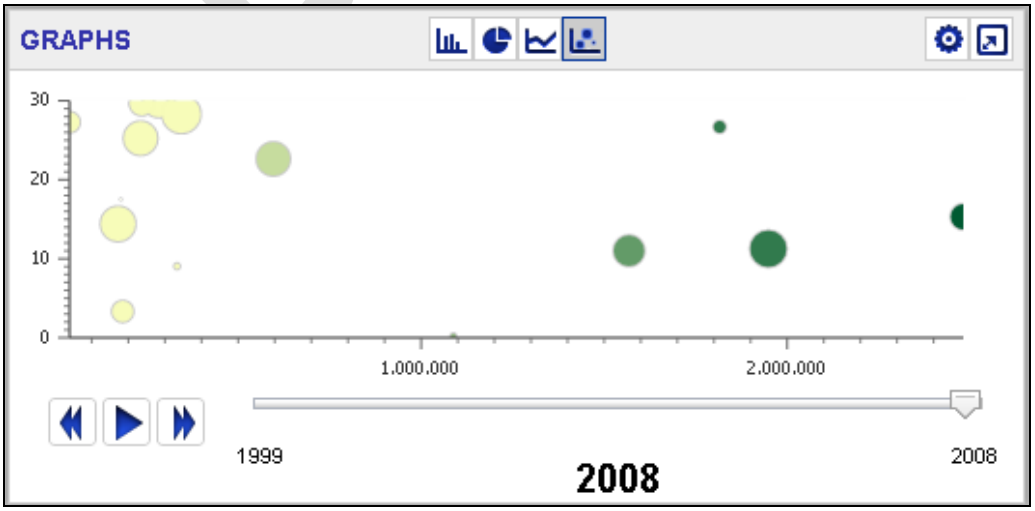


**Figure 33: Scatter Diagram**

### 6.4.2. Overlays – Various indicators showed in map

When the user access to the Scatter Diagram, the two indicators selected are shown at same time in the Map. One of them is represented painting the whole territory, and the other is represented by a colored circle over the territory (see figure).

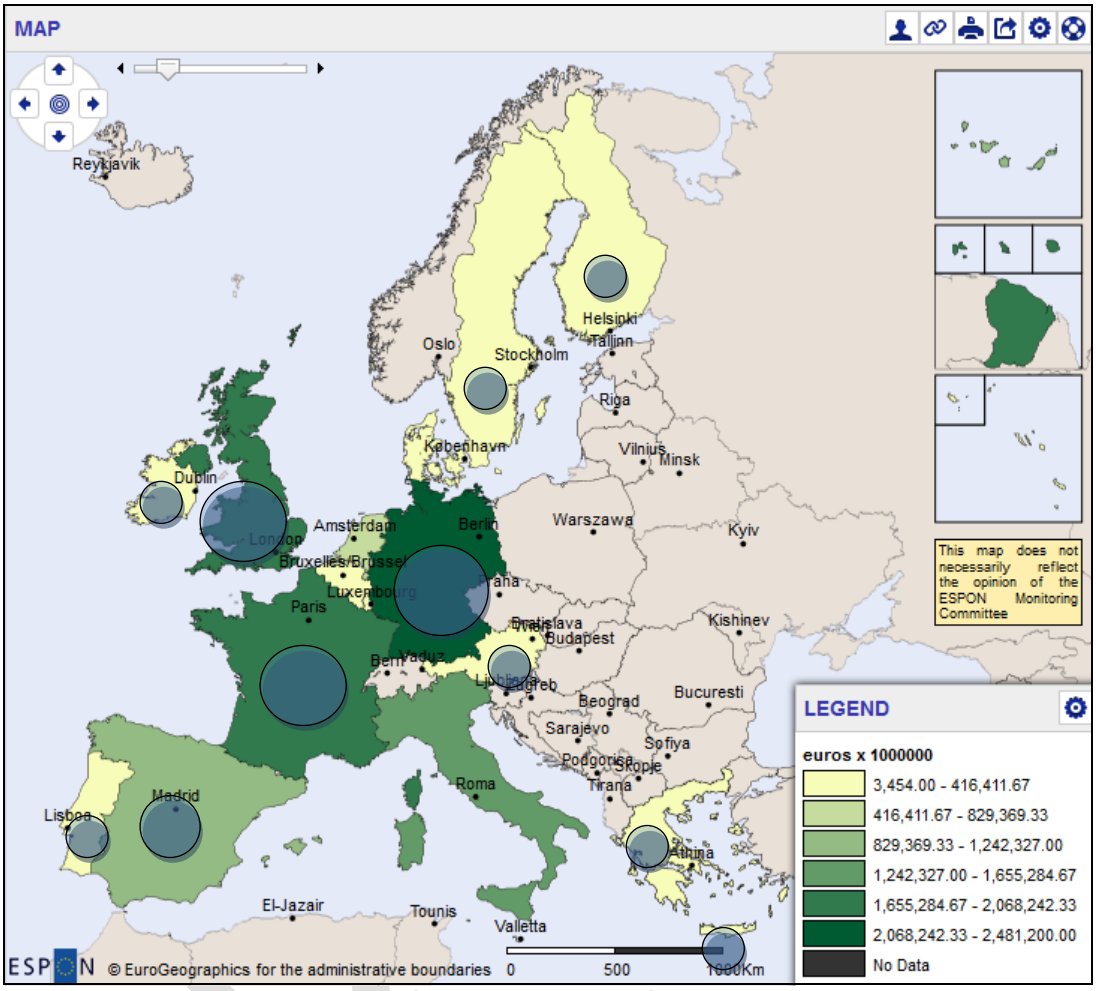



**Figure 34: Map overlays**

## 6.5. Graph Settings *

Each Graph typology has some settings which can be customized by the user. To do it, user must click over the button  at the top right of the Graphs Area.

### 6.5.1 Barchart options

Several Bar chart options can be set:

- To show or not the average.
- To show two additional bars with information from other years.
- To sort the bars (ascending or descending) based on several criteria: Region name or Indicator Value.

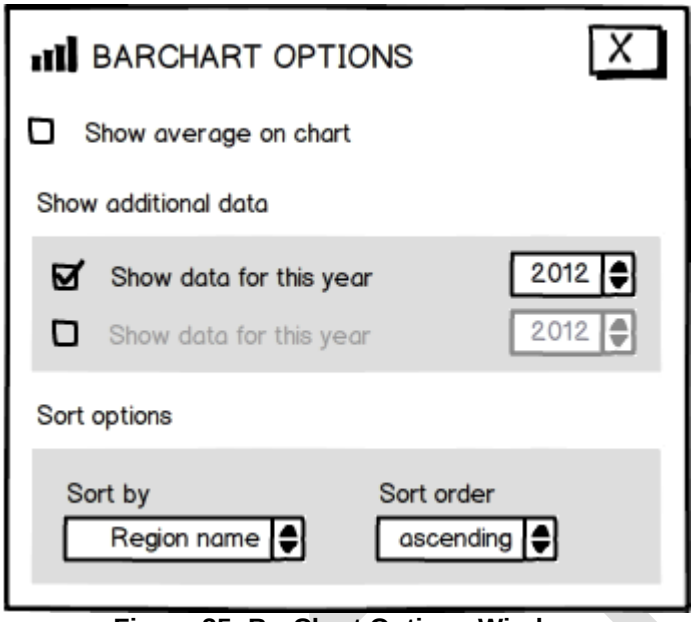



**Figure 35: BarChart Options Window**

### 7.5.2 Piechart options

Several Pie chart options can be set:

- To show two additional pies with information from other years.
- To cluster some sectors based on several criteria: Number of total sectors, sectors with a lower indicator value than a baseline value and sectors which added arise to a baseline value.

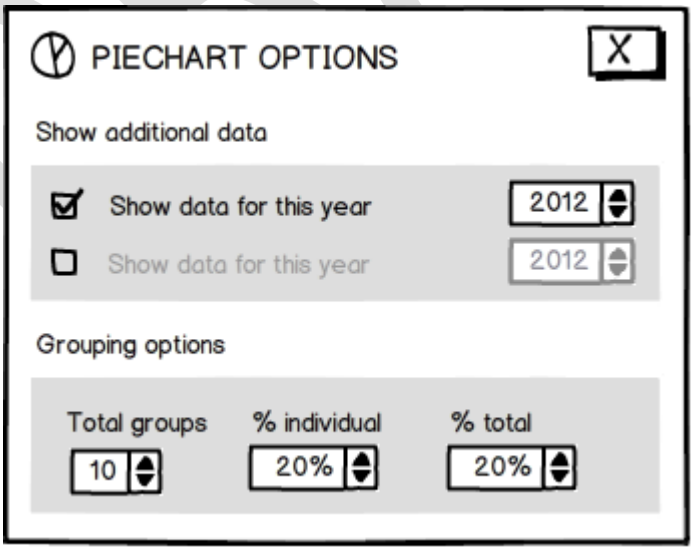



**Figure 36: PieChart Options Window**

### 7.5.3 Scatter options

Several Scatter options can be set:

- Graph representation Symbol.
- To Exchange the X and Y Axis.

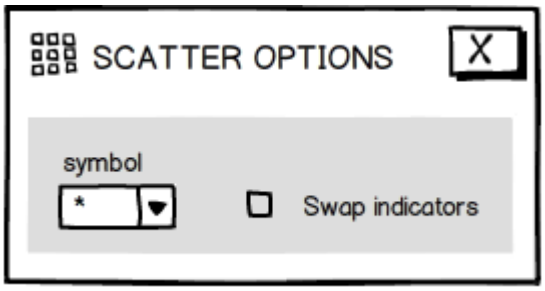



**Figure 37: Scatter Options Window**

# 7. Time Zone

## 7.1. Overview

One of the three variables managed in RIMAP to generate the maps is When.

By default, RIMAP selects the last year included in the ESPON Database, however, user can change between the years available clicking over the Time slide bar.


**Figure 38: Time Slide Bar**

## 7.2. Animation controls

Some animation controls have been included in RIMAP to avoid see the evolution of an indicator along the time in the map and the graph automatically.

These controls are located at the left of the Time Slide Bar (see figure).

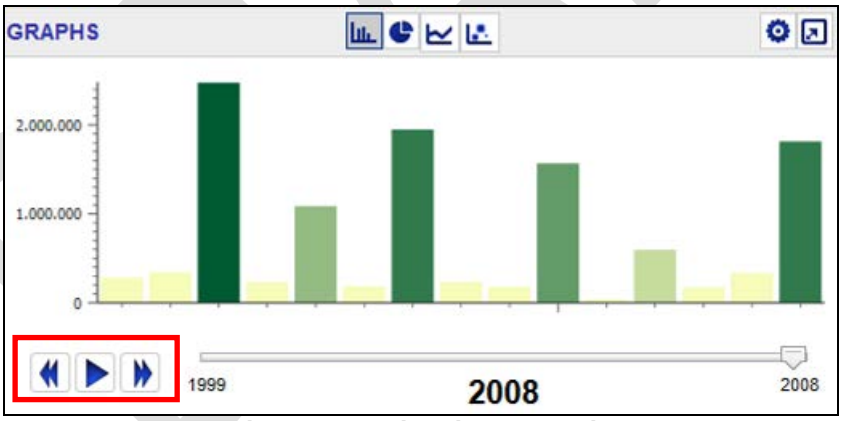



**Figure 39: Animation Controls**

RIMAP includes four animation controls:

- Play: When user clicks over this button , the animation starts since the year selected until the last year available or if user clicks over the pause button.
- Pause: This button only appears while the animation is being carried out. User can stop it clicking over this button .
- Forward: When user clicks over this button , the current year changes until the last year available.
- Forward: When user clicks over this button , the current year changes until the first year available.