# Guideline for the ONLINE S3 toolbox application: Regional Assets Mapping

ONLINE S3 – 710659 –  Guidelines for the pilot experimentation phase



## Content

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## HISTORY OF CHANGES

| Version | Date | Contributing partner | Summary of changes |
|---|---|---|---|
| Version 0.1 | 2016-10-07 | RIM | Structure of the document, elaboration of required information as a template for all tools |
| Version 1 | 2017-02-15 | Intelspace SA | Filling of the template with information regarding the 2.1 Regional Profiling tool. |
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## DISCLAIMER

The opinion stated in this report reflects the opinion of the ONLINE S3 consortium and not the opinion of the European Commission.

## ACKNOWLEDGEMENT

## BACKGROUND AND RATIONAL

This method and online dashboard puts together information on key regional assets. The objective is to support data transparency that enables gap analysis in relation to regional assets. It works as a dynamic library that includes a short description of each of the assets (e.g. research services, equipment, etc.) and service portfolio documentation. It could also include details on scientific identification and scientific description, access and use, scientific activities, collaborations, human resources and training, data policies, impact, innovation, costs and funding. Regional profiling is the most prevailing RIS3 method applied essentially by all regions, but with varying degrees of sophistication. Generally, regions use a variety of sources to map out a comprehensive 'picture' of regional assets. Integrating all relevant sources into a web-based dashboard helps RIS3 stakeholders to access basic information in a quick manner.

The profiling or baseline indicators that are used in RIS3 development are especially important, because they establish both the features of the regional economy which are relevant to the policy decision-making process and also the baselines from which any subsequent policy interventions will be evaluated (Nauwelaers et al., 2015). Regional Mapping, being the very first exercise to take place in the context of the development of a RIS3 strategy, sets the tone upon which the succeeding methods and applications will unfold. Hence it should be comprehensive and integrated enough to provide food for thought regarding the Benchmarking, Related Variety, SWOT and other analyses to follow. For the Regional Mapping method that will be developed for ONLINE S3, all of the above imply that we need to account for data and indicators that are measurable and available –and hence comparable- across the maximum possible number of Regions. **Figure 1** provides the rationale behind this ONLINE S3's application. As it can be shown, there are four discrete stages in the *Regional Assets Mapping* application.

**Step 1. Appointment of most relevant sections**

- The sections included are: (i) Geography, (ii) Demography & Society, (iii) Economy & Labour, (iv) Sectoral structure, (v) Business Characteristics and (vi) Innovation System.

**Step 2. Appointment of most relevant indicators within selected sections**

- In creating the regional assets profile, the user is called to select the most relevant indicators, depending on the strategic priorities of the RIS3 (if they have been already set) and the particular characteristics, strengths and weaknesses of the region.

**Step 3. Description and explanation of results.**

- Building on the results related to the selected indicators, the user will then provide qualitative and quantitative explanatory information, for example in identifying major strengths and weaknesses or explaining major indicator fluctuations across years, in combination with policy decisions or major economic events. Descriptions and explanations may either regard each section individually or several section at a time.

**Step 4. Regional Profile Overview.**

- Using the results of steps 2 and 3, the RIS3 developer will be called on to provide an overview of the region's profile. In doing so, they will combine the collected and worked out information about the region, and point strengths and weaknesses with regards to the profile. This step requires critical thinking and interpretation on the side of the RIS3 developer.
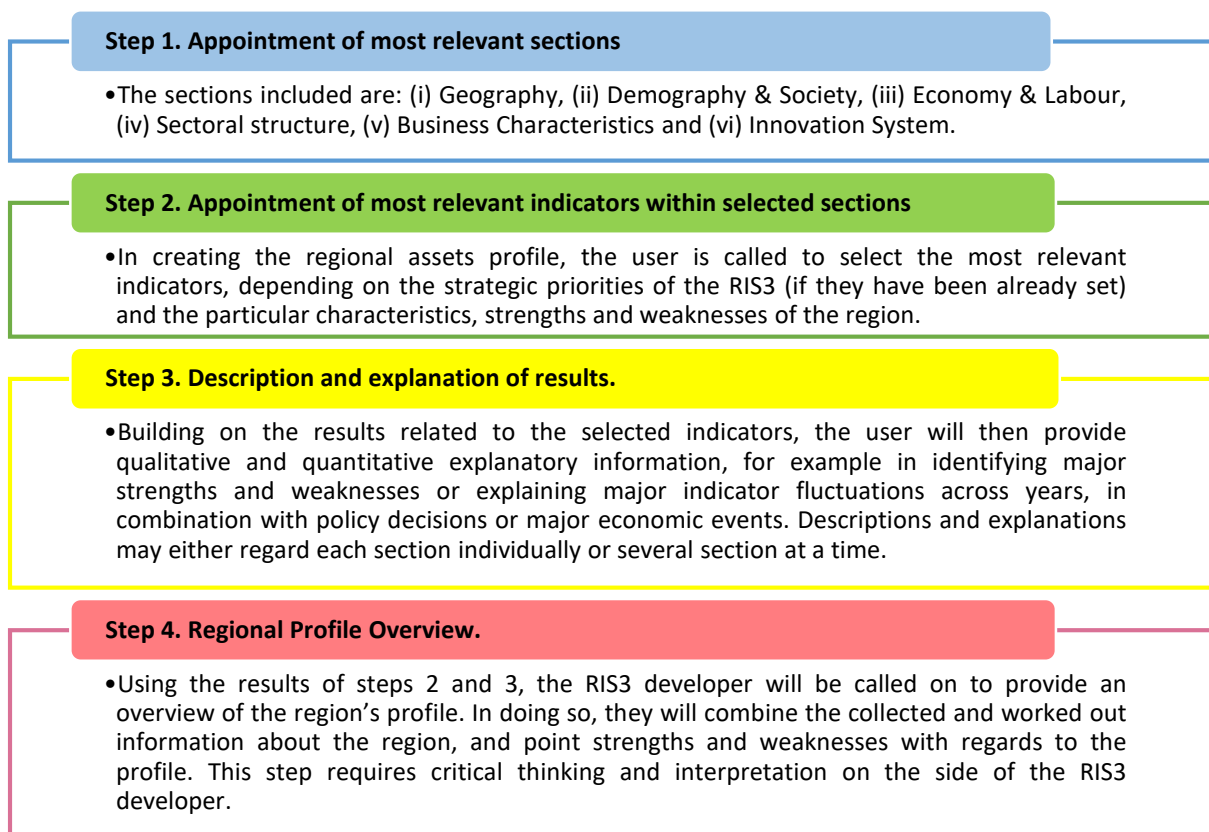
*Figure 1 Rational behind this ONLINE S3 application*

## DESCRIPTION OF THE APPLICATION

Given the fact that regional profiling is the most prevailing RIS3 method applied essentially by all regions, alongside with the fact that regions use a variety of sources to map out a comprehensive 'picture' of regional assets, *Regional assets mapping* tool is the main tool for integrating all relevant sources into a web-based dashboard. This application helps RIS3 stakeholders to access basic information in a quick manner.

The logical steps of the application, based on its methodological description are:

- *Step 1.* Selection of the **section, time period, regions** and **indicators** the that will be mapped.
- *Step 2.* Extraction of the selected data in **table** format.
- *Step 3.* Selection of the appropriate **visualisation** mode for the data.
- *Step 4.* Description and explanation of **results**.
- *Step 5.* **Report** synthesis and regional profile overview.

Following the application architecture described in previous steps, the information flows within the application are given in **Figure 2**, below. As it illustrated, the initial input coming from user defines the necessary parameters, regarding the region that needs to be described and the time period to which it refers to. By combining this information with the selected more relevant indicators, the corresponding data is pulled from the main database. The processing of these data, in terms of visualization, is based on table or graphic format, which can be sent to the final report. Individual tables or graphics can also be extracted through the application.

The main output of the application is the final report of Regional assets mapping exercise, which will give the user a comprehensive picture regarding his/her region for the chosen time period frame. Moreover, individual information that might be needed to some other phases of the RIS3 development can also be extracted through this application.
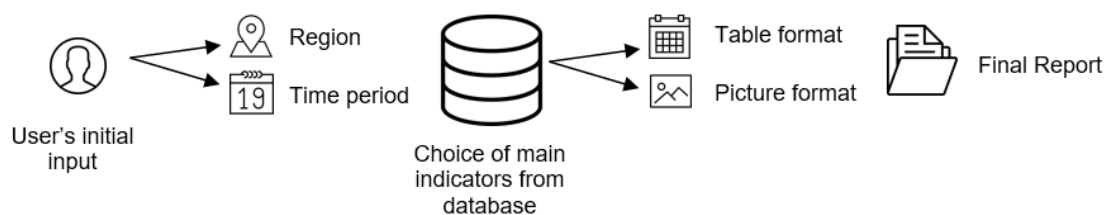


*Figure 2 Overview of the information flows within the Regional Assets Mapping application.*

## BENEFITS TO KEY ACTORS AND STAKEHOLDERS

Key actors using Regional Assets Mapping application include mostly RIS3 designers, aiming to reveal regional characteristics, which might be considered as important elements of the RIS3 design process. This fact is highly related to the main definition of regional profiling and assets mapping, which refers to "*the set of analyses that should be implemented and the associated evidence that should be collected in order to construct a source of knowledge to inform strategic choices and actions*" (Gianelle et al., 2014). Profiling indicators that are going to be used by policy-makers, refer to "*the set of statistical indicators covering demographic, socio-economic, institutional and connectivity features of territories with the purpose of shaping the relevant characteristics of regional economies in terms of smart growth*" (Martínez, 2013).

In the RIS3 Guide it is made clear that, although the assessment of existing regional assets implies looking 'inside' the region, for the development of a substantial smart specialisation strategy, it is essential to also gauge its position relative to other EU regions, for the purposes of maximizing complementarities, transferring know-how and avoiding 'blind' investments' duplication. This implies that the RIS3 approach requires looking beyond the regional administrative boundaries, accounting for the external context (national and international), paying attention to inter-regional and international cooperation in innovation policies and ultimately keeping a focus on what kinds of inter-regional cooperation frameworks can be established with the goal of enhancing regions' ability to compete in the global economy (Foray et al., 2012, Gianelle et al., 2014).

The *Regional Assets Mapping* application introduces three crucial benefits to the users, related to the abovementioned general principles of regional profiling. These include: i) the integrated environment for all relevant data sources into a web-based dashboard; ii) an easy way to provide an overall picture of the existing regional assets; and iii) an easy way to make regional comparisons through graphic representations (**Figure 3**).
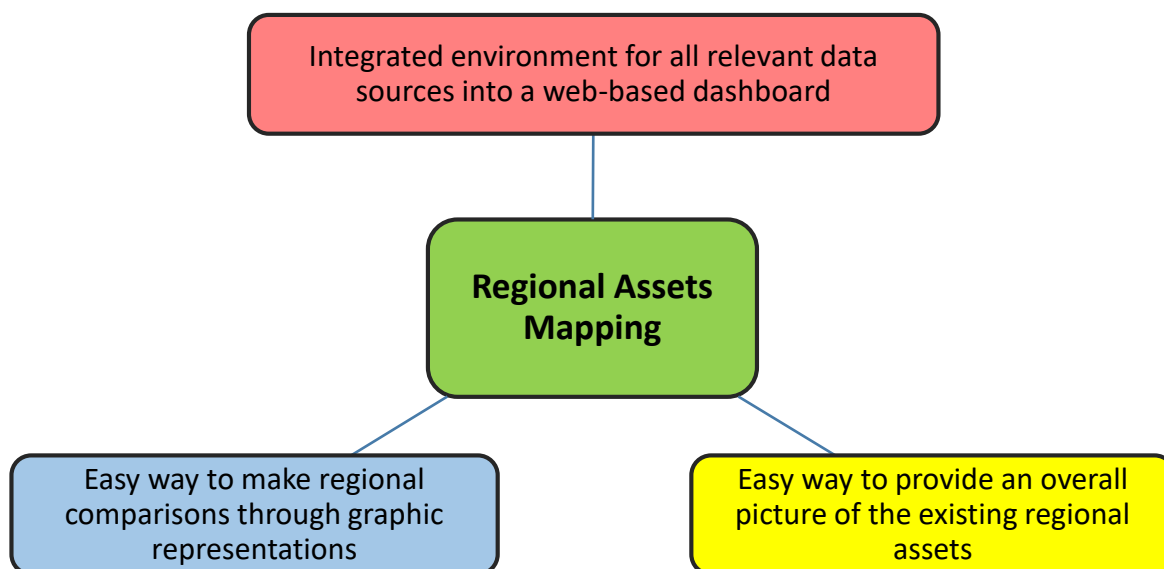


*Figure 3 Benefits to stakeholders when using the Regional Assets Mapping application.*

## KEY ISSUES AND REQUIREMENTS

For the appointment of the most relevant indicators within selected sections (see Step 2), data needs come down to the indicators that are required to describe a region's (i) Geography, (ii) Demography & Society, (iii) Economy & Labour, (iv) Sectoral structure, (v) Business Characteristics and (vi) Innovation System (NUTSII level). The foremost data sources include:

1. Eurostat's Regional Statistics indicators (http://ec.europa.eu/eurostat/web/regions/data/database)
2. the Regional Innovation Scoreboard 2016 indicators (http://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en)
3. the Regional Demographics Statistics of OECD (http://stats.oecd.org/Index.aspx?datasetcode=REG_DEMO_TL2)

For the description and explanation of the results in Step 3, data needs are region-specific. However, potential additional sources of information, that could further help in the interpretation of the results, include policy documents and other literature sources, as well as consultation with key stakeholders. This process will help the RIS3 designer (the user) to assess the analytical results of Step 2 and reach sensible and cohesive conclusions.

In general, the *Regional Assets Mapping* tool provides the results with respect to the selected indicators. Nonetheless, two important remarks that need to be made include first, the fact that the appointment of indicators depends on data availability, as some indicators may not be available for all regions, and second, although the majority of indicators are quantitative, some of them might be qualitative.

An outline illustrating the overall process of the Regional Assets Mapping tool is given in **Figure 4**, in order to present more clearly the steps that are included in this application.
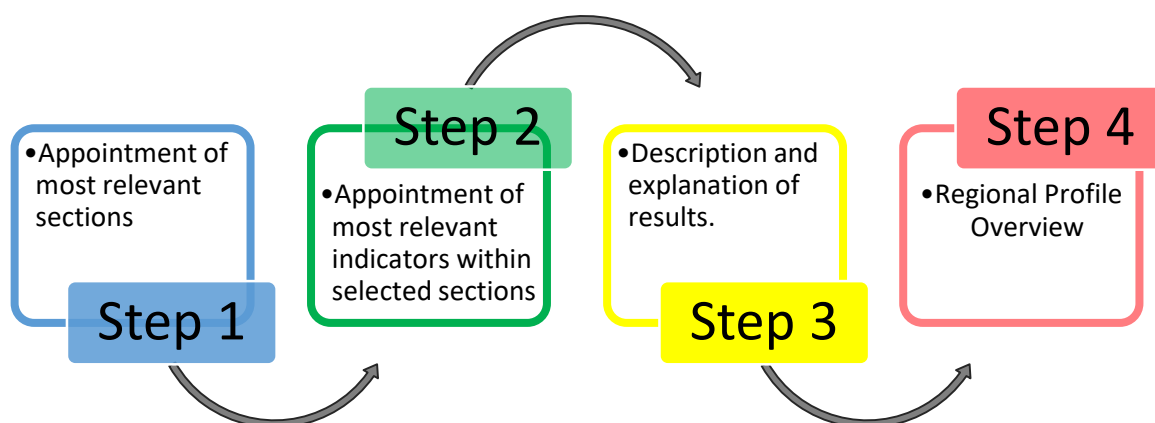


*Figure 4 Key steps when using this Regional Assets Mapping application.*
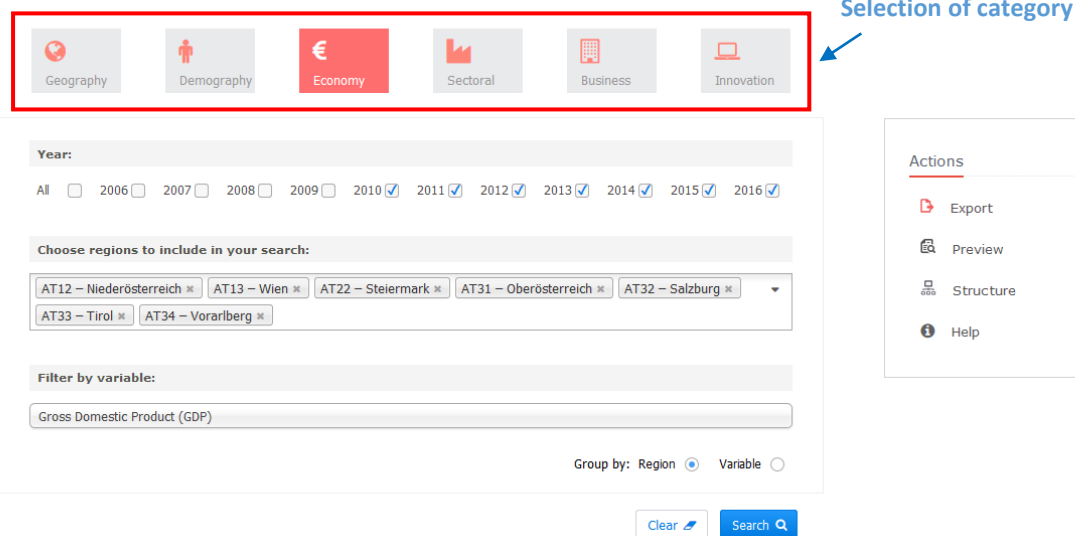
## A STEP-BY-STEP GUIDE

**How to use this application step-by-step?**

**Step 1 - Selection of the main filters for the analysis**

During the first step of the application, the user will have to choose the main filters for his analysis. These include:

**a)** main **category** (e.g. geography, demography & society, economy & labour, sectoral structure, business characteristics and innovation system)



*Figure 5a: Step 1 – Selection of category.*

**b) years** included in the analysis



*Figure 6b: Step 1 – Selection of years.*

**c) regions** that are going to be included
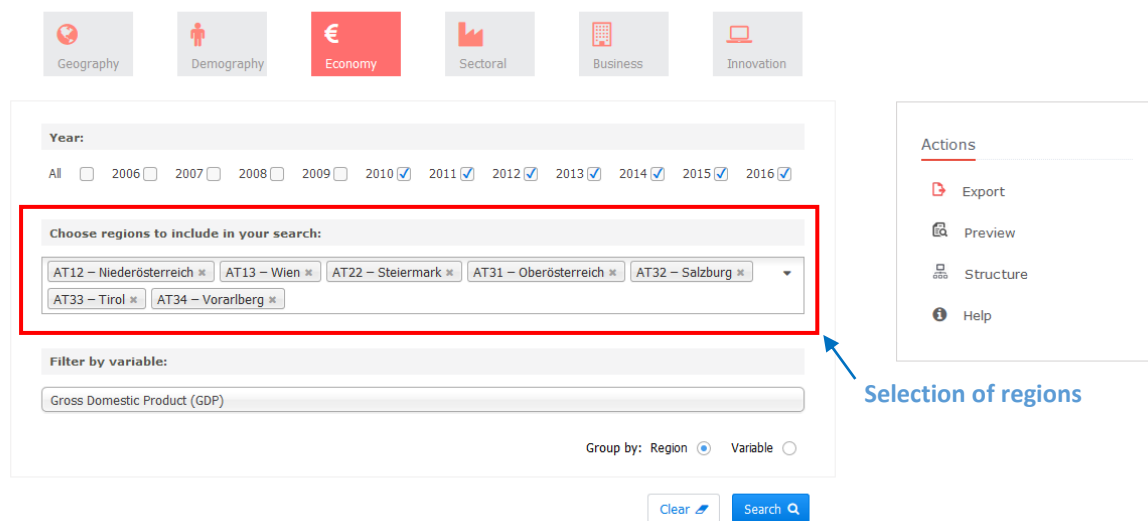


*Figure 7c: Step 1 – Selection of regions.*
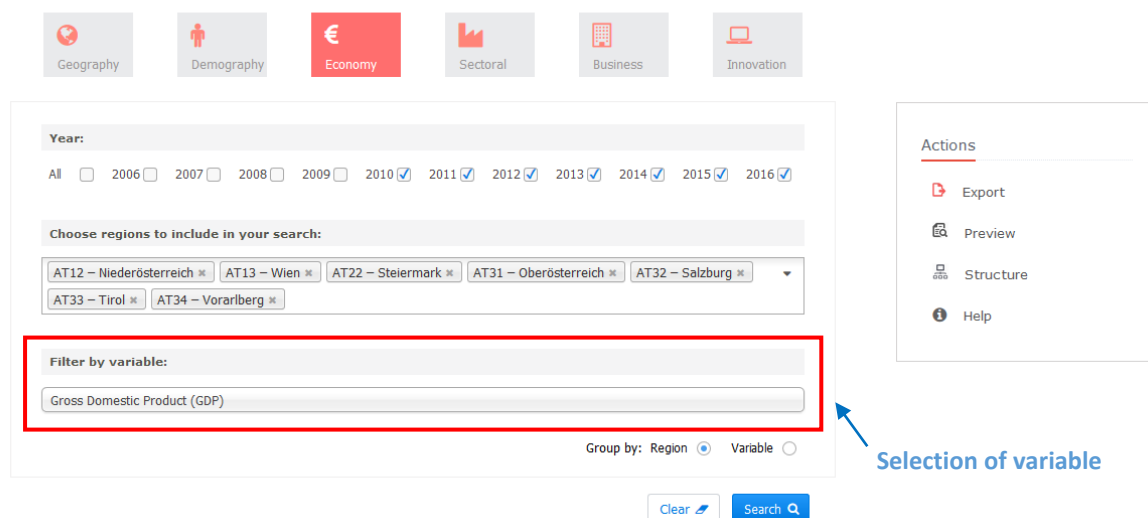
**d) variables** for the analysis



*Figure 8d: Step 1 – Selection of variable.*

It is important to notice that the application gives to users the opportunity to group their results either based on regions, or based on variables. Thus, we can obtain results in two forms: i) results for a specific variable for a number of regions; and ii) results for a number of different variables for a specific region. These two different option provide the opportunity to perform comparative analysis not only within a region, but also between different EU regions.

**Step 2 - Extraction of the selected data in table format**

In the second step of the application, the user will be able to see his/her selected indicators in a table format by pressing the *Search* button. He/she is also able to reset the selection criteria by pressing the *Clear* button (**Fig. 6a**).

*Figure 9a: Step 2 - Extraction of the data in table format.*

An additional functionality of the application offers the opportunity to download the selected data at an excel format (.xlsx). This can be done by pressing the *Download* button at the end of the table (**Fig. 6b**). The pop-up window gives the user the opportunity to open the .xlsx file or Save it in his/her computer.
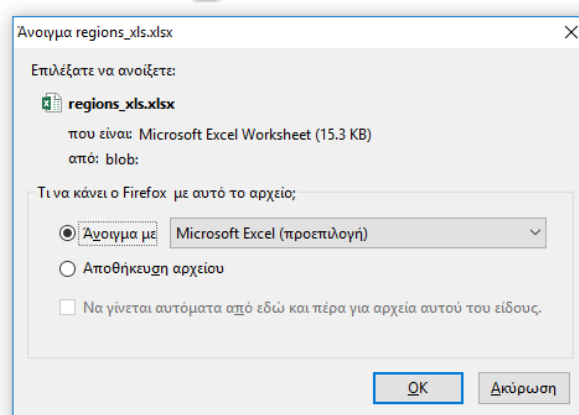


*Figure 10b: Pop-up window for downloading the data in a table format.*

**Step 3 - Selection of the appropriate visualisation mode for the data**

The third step of the application offers the opportunity to select the appropriate visualisation mode for the data by pressing the *Show Graph* button (**Fig. 7a**). The choice must be done between two different visualisation modes: line graphs and bar charts. In both cases, it is possible to export the produced graphs in an image format (.png) by pressing the *Export* button at the bottom of the graph.

**Gross Domestic Product (GDP)**

complementary description

| Region | 2010 | 2011 | 2012 |
|---|---|---|---|
| AT12 – Niederösterreich | 46,186 | 48,475 | 49,687 |
| AT13 – Wien | 77,518 | 80,022 | 81,343 |
| AT22 – Steiermark | 37,446 | 39,398 | 40,823 |
| AT31 – Oberösterreich | 49,574 | 52,466 | 53,907 |
| AT32 – Salzburg | 21,680 | 22,754 | 23,622 |
| AT33 – Tirol | 25,533 | 26,869 | 28,135 |
| AT34 – Vorarlberg | 13,486 | 14,199 | 14,547 |

Download    Show Graph    Insert to Report

**Selection of the visualization mode**

*Figure 11a: Step 3 Selection of the appropriate visualisation mode for the data.*
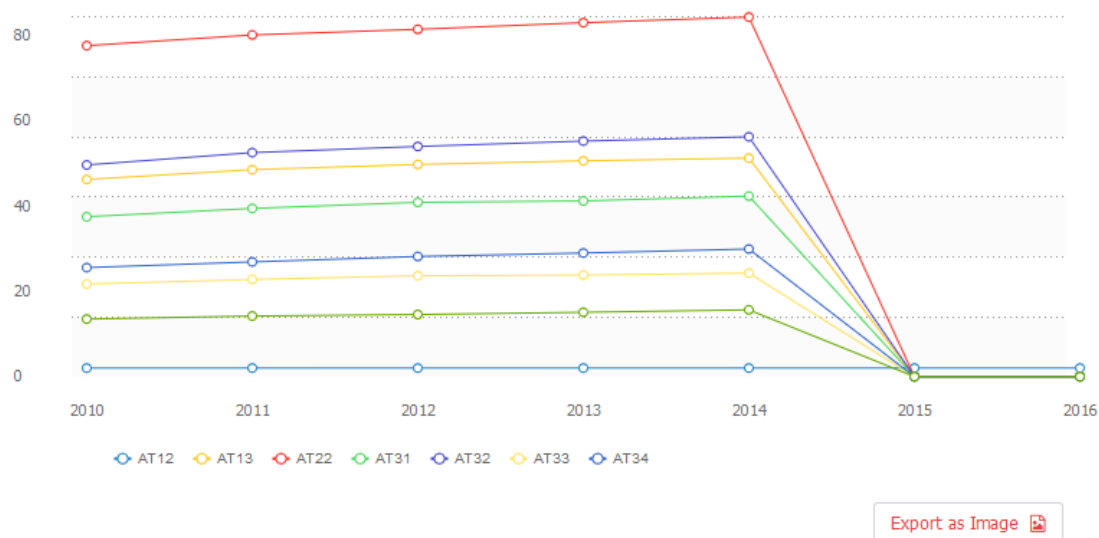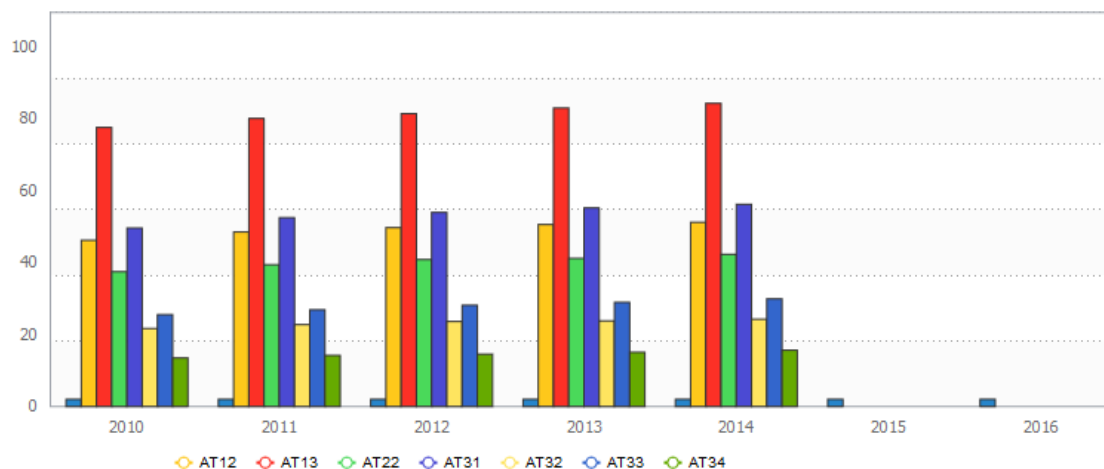
**Gross Domestic Product (GDP)**

complementary description



*Figure 12b: Line graph produced by the Regional Assets Mapping application.*

**Gross Domestic Product (GDP)**

*complementary description*



*Figure 13c: Bar chart produced by the Regional Assets Mapping application.*

## FURTHER INFORMATION

Further information regarding the description of the method can be found on the site of the Online-S3 project (www.onlines3.eu).

## REFERENCES

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