ESPON

DeTeC
Detecting Territorial Potentials and Challenges

Scientific Platform and Tools Project 2013/3/6

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This report presents the interim results of a “Scientific Platform and Tools” Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

The partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

This report does not necessarily reflect the opinion of the members of the Monitoring Committee.

Information on the ESPON Programme and projects can be found on www.espon.eu

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This basic report exists only in an electronic version.

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Table of contents

Executive summary **5**

1 Introduction **8**

2 Outline of methodology **9**

A practice oriented perspective 9

Territorial cohesion and ESPON knowledge 11

Reviewing ESPON projects and identifying methods 13

3 Territorial approaches and methods **16**

Detecting global and future challenges and potentials 16

Detecting territorial characteristics and comparing the performance 17

Detecting functional areas and internal coherence 18

Detecting current and potential external linkages 18

Detecting opportunities for territorial governance 19

4 An outline for utilising ESPON knowledge **21**

Conceptual framework 21

Form and content 23

Interactive handbook 26

Illustrative examples 29

5 Regional laboratories **31**

Regional application 31

Regional laboratories 32

Regional profiling 35

6 Future work plan **38**

References **39**

Annex 1. Method reviews 41

Annex 2. Regional statistics 63

Executive summary

Detecting Territorial Potentials and Challenges (DeTeC) is a project that contributes to the access and use of ESPON knowledge and provides guidance for evidence based urban and regional development. The objective of the project is to develop a guide for detecting territorial approaches and challenges of a region from a European perspective using ESPON-knowledge. The guide is grounded in an inventory and systematic review of analytical approaches as well as qualitative and quantitative methods used and developed within ESPON research projects. Based on the inventory a conceptual framework to utilise ESPON knowledge is created including territorial approaches, innovative methods, themes of indicators and concepts. The territorial applicability of the conceptual framework is assessed through regional laboratories with focus on both the transferability of ESPON knowledge and the practical applicability. After this the conceptual framework is re-designed and redeveloped into a practical guide in form of an interactive handbook.

In order to understand how ESPON knowledge can be utilized to detect territorial potentials and challenges it is crucial to link general approaches and methods developed within ESPON to regions and their territorial development. The report from the ESPON seminar in Malmö 2009 'Regional Use of ESPON Knowledge' (ESPON 2010) provides an initial outline of how this can be done. The report is structured around six approaches of revealing territorial potentials identified within ESPON Priority 2 Targeted Analysis projects. Based on this, and the inventory and systematic review, five distinct territorial approaches has been identified for detecting territorial potentials and challenges of a region from a European perspective using ESPON-knowledge:

- Detecting global and future challenges and potentials
- Detecting territorial characteristics and comparing the performance
- Detecting functional areas and internal coherence
- Detecting current and potential external linkages
- Detecting opportunities for territorial governance

The territorial approaches are based on knowledge and approaches developed within ESPON and contain different methods, which include indicators that can be further utilized. Each territorial approach contains references to concrete examples of how these methods have been used in different ESPON projects. In coordination with the development of territorial approaches interesting and innovative methods has been identified through the inventory and systematic review. The focus in the method reviews has been the innovative aspect of the ESPON projects, and their relevance for detecting territorial potentials and challenges. For example if the project developed a new and/or revised method (i.e. EATIA, TPM, SS-LR), or the project used or combined existing methods in innovative ways (i.e. METROBORDER, POLYCE). All in all twelve methods has (so far) been identified:

1. Assessing functional integration
2. Assessing polycentric development
3. Attractiveness indexes
4. Cross-border institutional mapping
5. Econometric analysis of agglomerations
6. Multilevel governance analysis
7. Spatial scenarios
8. Territorial impact assessment
9. Territorial performance monitoring
10. Territorial profiling and performance
11. Understanding differential growth
12. Urban growth modelling

A crucial part of the link between European experiences and ESPON knowledge supply on the one hand with practical regional challenges (and potentials) and knowledge demand on the other hand is the conceptual framework. It is also the link between the research-oriented systematisation of analytical approaches and methods, the regional application and laboratories, and the synthesising and knowledge transfer. The conceptual framework combines territorial approaches, concepts, themes and methods multi-directionally, allowing different paths to generate knowledge on territorial potentials and challenges. In order to display the multiple interlinkages between the different layers and types of information and to enhance usability the conceptual framework is designed and presented in a flexible and interactive way.

A key issue in developing the conceptual framework (and the guide) has been to identify the main target groups and potential usage of the guide. The main target group and potential usage is defined as:

- Policy makers and practitioners in the field of regional development or spatial planning, who are in an executive, leading position, making strategic decisions at regional level.
- The guide is most likely to be used in long-term strategic development, e.g. to support the design or evaluation of regional development plans and programmes.

In order to meet the requirements of the diverse knowledge demand of these regional stakeholders and the complexity of approaches and methods, the framework (and eventually the interactive handbook) will present information in a structured way, at the same time offering different paths to knowledge generation. The linkages between territorial approaches, concepts, themes, methods and concepts will be

shown in a clear and graphic way, offering the user to navigate along logical chains. The interactivity allows the user to “jump” between different information outputs and levels of information, which enhances applicability and fosters the readability.

Regional laboratories for assessing the regional applicability of the conceptual framework are being set up across Europe in six regions of various size and characteristic:

1. Danube-Kris-Mures-Tisa Euroregion
2. Scotland
3. Malta
4. Podlasie
5. Skåne
6. Styria

The regional application will be conducted in three steps. 1. Target group meeting (half a day) in which ESPON in general and the conceptual framework as well as the regional profiles are presented to a focus group of key regional stakeholders. 2. Internal working procedure during which the conceptual framework will be elaborated in relation the research questions/issues/problems agreed upon during the target group meeting (fitting ESPON method(s) for the specific regional knowledge demand). 3. Stakeholder workshop (one day) organised in collaboration with the regional stakeholders will be set up. During the workshop a revised guide for detecting territorial potentials and challenges, adapted to the specific regional questions will be presented and its regional applicability will be examined.

Based on this the conceptual framework will be re-designed and redeveloped into a practical guide in form of an interactive handbook. The aim of the guide is to show practitioners different options of methods and approaches derived from ESPON knowledge. The handbook includes illustrative examples and practices that serve as clues to support practitioners with the selection of the appropriate method on detecting territorial potentials and challenges.

1 Introduction

The utilisation of knowledge and experience from ESPON projects is the overarching aim of the **Detecting Territorial Potentials and Challenges** (DeTeC) project, in accordance with the general objectives of ESPON Priority 3 Scientific Platform. In recent years, ESPON has contributed to a specific knowledge base, which includes various methods, data sets and in-depth analysis regarding regional challenges and potentials from a territorial perspective. Based on these foundations, in particular achieved within this programming period (ESPON 2013), the objectives for the DeTeC project are:

1. To develop practical guidance of how practitioners and policy makers can utilize ESPON knowledge for detecting territorial potentials and how to turn challenges into potentials deriving from their local specificities and larger territorial context
2. To provide concrete examples of good practices in utilising territorial potentials and/or deal with particular challenges including a European outlook and combining ESPON results with local and regional knowledge.

The project meets the increased demand for evidence-based analytical approaches and methods supporting practitioners and policy makers. It contributes with both place-specific and general knowledge on how territorial potentials and challenges can be detected and utilised by using ESPON knowledge.

In order to understand how ESPON knowledge can be utilized to detect territorial potentials and challenges it is crucial to link general approaches and methods developed within ESPON to regions and their territorial development. The report from the ESPON seminar in Malmö 2009 “Regional Use of ESPON Knowledge” (ESPON 2010) provides an initial outline of how this can be done. The report is structured around six approaches of revealing territorial potentials identified within ESPON Priority 2 Targeted Analysis projects. In the DeTeC project this is used as the departure in order to develop the outlined approaches into a coherent conceptual framework and eventually a guide in form of an interactive handbook for detecting territorial potentials and challenges.

Within the project a concrete and practical guide for detecting territorial approaches and challenges of a region from a European perspective using ESPON-knowledge is created. The guide is grounded in an inventory and systematic review of analytical approaches as well as qualitative and quantitative methods used and developed within ESPON research projects. Based on this a conceptual framework to utilise ESPON knowledge is being created including territorial approaches, innovative methods, themes of indicators and concepts. The territorial applicability of the conceptual framework will be assessed through regional laboratories with focus on both the transferability of ESPON knowledge and the practical applicability of the guide. Based on this the conceptual framework will be re-designed and redeveloped into a guide in form of an interactive handbook including illustrative examples.

2 Outline of methodology

The key methodological challenges of the DeTeC project are to transfer and connect European experiences and knowledge supply with regional challenges and potentials as well as knowledge demand (see figure 1). It is thus important to consider both what policy makers and practitioners demand and what ESPON can supply. As an applied project under Priority 3 the project contributes with making ESPON knowledge useful for policy makers and practitioners as well as support concrete application and use of data. The project covers economic, social, cultural, environmental and institutional aspects of territorial potentials and challenges. It has a multi-scalar and context- sensitive perspective, i.e. it is recognizing the importance of integrated analysis on the European level, the transnational/national level, as well as the regional/local level. Methodologically a crucial issue is to determine and identify which context is of importance for which actors and practices.

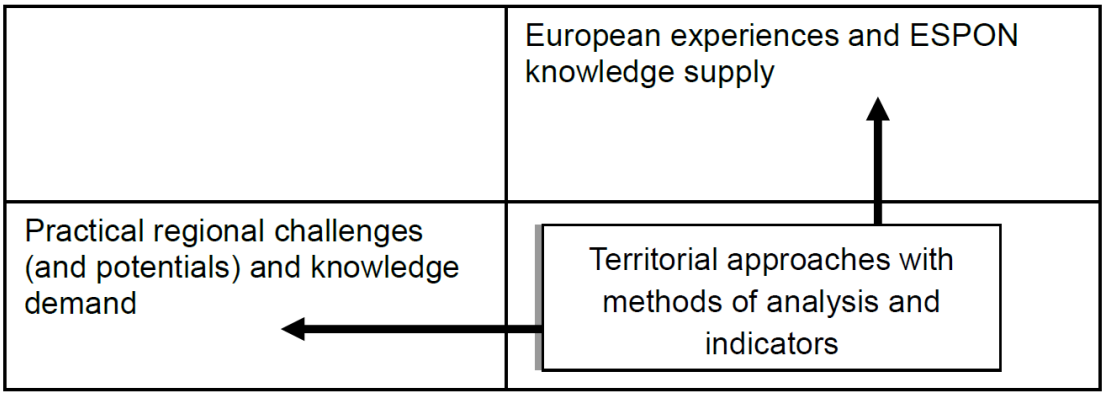


Figure 1. Transferring and connecting ESPON knowledge and regional challenges

A practice oriented perspective

A practice oriented perspective is applied in the project which means that the context is defined through practices of the stakeholders, and not priori from a given single theoretical framework. This perspective is inspired by the 'practice turn' in social sciences, which is a family of theories – 'theories of practices', that generally offer inspiring approaches of going beyond dichotomies such as theory/practice, science/politics, discourse/action, global/local. Theories of practices are in this project especially relevant and interesting since they directly and strategically engage with the relations between academia and politics, researchers and practitioners:

> The strategy is to give the practitioners much more voice in the conduct of research, and to let them speak for themselves. Such an understanding also assists in identifying what is problematic for the practitioners. Taking the problems of practitioners as the puzzles of research, rather than deriving the

puzzles from a disciplinary community, is understood as a strategy which is more likely to lead to practical alternatives for coping with problems. In striving for alternative forms of coping with problems, researchers relying on theories of practice usually do not imply “to tell practitioners what to do”. Instead the role of the researcher is understood as a facilitator opening the space for the consideration of alternative courses of action (Bueger 2009).

In line with this the DeTeC project integrates a clear focus on practices, utilisation of knowledge and on synthetic research as outlined in Figure 2. The project departs from an extensive systematisation of approaches and methods through a review of ESPON projects. This inventory and systematic review is the foundation for the construction of a conceptual framework including territorial approaches with methods of analysis and indicators. The practical applicability of the conceptual framework is assessed through regional laboratories, directly engaging local and regional practitioners and policy makers. Eventually the conceptual framework is be re-designed and redeveloped and translated into a guide in the form of a interactive handbook on detecting and utilising territorial potentials which will provide synthesised and transferrable knowledge and experiences.

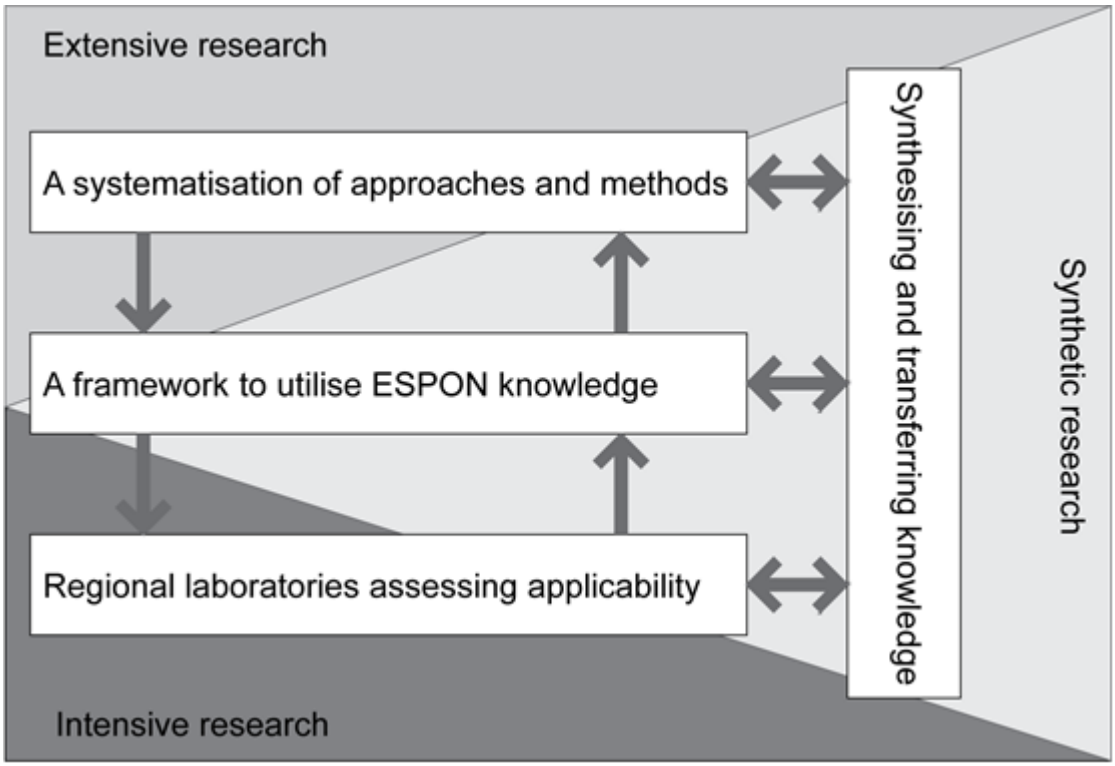


Figure 2 The scientific and methodological approach of ESPON DeTeC

A key feature in this practice-oriented project is the regional laboratories through which the regional applicability of the conceptual framework will be assessed and from which the guide is developed. In practice this implies exploration of how territorial potentials and challenges can be identified and detected in collaboration

with practitioners and policymakers. Regional laboratories can be seen as case studies or examples but are more accurately compared to and inspired by the notion of (urban) living labs. Urban living labs are based on users and other stakeholders being systematic co-creators in the research process (see http://en.wikipedia.org/wiki/Living_lab). The regional laboratories are located right where the process takes place, in real time and in the real context.

Territorial cohesion and ESPON knowledge

Territorial cohesion was introduced as third dimension in the EU's cohesion policy, alongside economic and social cohesion, with the Lisbon Treaty introduced a: territorial cohesion. It is now an integral part of the EU's overarching strategy Europe 2020 (EC 2012). However, the topic has been discussed since the early 1990's (e.g. in the European Spatial Development Perspective (ESDP) (EC 1999), but has become even more acute with the expansion of the European territory and the inclusion of new member states in the 2000's.

Territorial cohesion was explicitly addressed in the 'Territorial Agenda' (TA 2007), or, as it is named in the sub-title, 'Towards a more competitive and sustainable Europe of diverse regions'. In the agenda the normative notion of territorial cohesion is declared as the most prominent task of territorial policies in Europe, whilst a central motivation lies in better exploiting the existing territorial diversity within the EU. This was further pronounced in the "Green Paper on Territorial Cohesion" issued by the European Commission (DG Regio) in 2008 (CEC, 2008). A central objective has been to further develop a common mind-set on what territorial cohesion is and what it means in terms of the coordination of the programming of several EU policies and regarding other territorial policies within the member states. Here in particular the ESPON Programme has become a nucleus of developing scientifically robust knowledge in terms of territorial analysis, but also regarding the applicability and identification of policy options that shall help to better address the territorial dimension.

The recent "Territorial Agenda", the TA 2020, has been adapted to the Europe 2020 strategy, the general road map of EU policy targets within this decade in regards to central policy fields (employment, energy, education and innovation). It will also be central in the future alignment of EU cohesion policies between 2014 and 2020 as argued in the Commission Staff Working Document regarding the "Elements for a Common strategic Framework 2014 to 2020" (EC, 2012b).

The TA 2020 takes up the "policy triad" proposed by the Europe 2020 (EC 2012a) strategy—namely, smart, sustainable and inclusive growth—and rephrases it in its sub-title "Towards an Inclusive, Smart and Sustainable Europe of Diverse Regions". Undoubtedly, the authors of the TA 2020, the ministers responsible for spatial planning and development of the member states of the European Union, are exploiting a window of opportunity as territorial cohesion has become a shared

competence of the EU and its member states in the “Treaty on the Functioning of the European Union” of December, 2009. In other words, they claim in a very pronounced way to incorporate the territorial dimension as an integral part of economic and social cohesion policy undertaken by the EU (Schmitt 2011).

Also, and maybe most important in view of this project the ministers responsible for spatial planning and development of the member states of the European Union also assert that the diversity of territories is a potential for development. In doing so, the place-based approach to policy making, as elucidated in the ‘Barca-Report’ from 2009, is identified as a central plank, which requires evidence-informed policy making and integrated functional area development.

The ESPON Programme 2013, the European Observation Network for Territorial Development and Cohesion has since it was adopted by the European Commission in 2007, contributed with pan-European evidence and knowledge about European territorial structures, trends, perspectives and policy impacts enabling comparisons amongst regions and cities. The programme is being implemented through for types of projects. All projects have been contracted; some are still on-going while others have already delivered final results (for on overview of the projects see ESPON 2012).

- Priority 1: 25 Applied Research projects on a variety of cross-thematic and thematic issues that together provide a substantial amount of new evidence on European territorial trends, perspectives and policy impacts.
- Priority 2: 23 Targeted Analysis projects using ESPON evidence in analyses meeting demand from national, regional and local stakeholders in understanding better the European perspective and position of their territories.
- Priority 3: 10 larger projects related to the Scientific Platform and Tools for territorial analyses which contribute to the access and use of the ESPON knowledge base and provide new tools and evidence for other Programmes on European Territorial Cooperation as well as regional and urban actors.
- Priority 4: 7 Transnational Networking Activities projects that in different ways implement capitalisation and awareness-raising of ESPON results at the transnational level as a complement to the pan-European capitalisation done within the programme as such. (ESPON 2012b, Forword)

Reviewing ESPON projects and identifying methods

The DeTeC project is systematically reviewing ESPON projects, in order to identify useable and innovative ways for detecting territorial potentials and challenges, and to create an inventory of ESPON knowledge and European experiences. The review and identification is done in a three steps process: 1) project reviews, 2) project matrixes, and 3) method reviews. The final output of the review is a descriptive list of method reviews (see annex 1), connected to the territorial approaches developed and presented in the next section.

Project reviews: connecting concepts, indicators and empirical data

The starting point of the review process is the Priority 2 Targeted Analysis Projects (outlined in the Inception report). The project reviews has focused on the analytical and methodological approaches of these projects inquiring the relations between concepts – indicators/sources – analysis/presentation, through a set of critical questions (for a hypothetical example see box 1):

- What is the key concept (or: are the key concepts) that are being operationalized in the project (e.g. polycentricity, regional integration, territorial capital, territorial cohesion, multi-level governance, institutional capacity)?
- How are the key concepts operationalized (e.g. expressed by a number of related analytical sub-concepts such as functional urban areas, cross boarder integration, territorial assets, regional innovations, network connectivity)?
- What indicators, criteria and/or principles (e.g. GDP, commuting patterns, firm locations, leadership, patents) are being applied to assess/measure the related analytical concepts?
- How are the indicators analysed and used (e.g. benchmarking, SWOT analysis, flow analysis)?
- How are the indicators being informed? What are the empirical sources (e.g. statistics, case studies, surveys)?
- How are the findings presented/illustrated (e.g. maps, flow charts, schemes, models)?

Box 1. Hypothetical example of the relation between concepts – indicators - analysis

The key concept polycentricity can be conceptually operationalized in terms of functional urban areas which can be measured through commuting patterns with statistics derived from Eurostat. The indicator “commuting patterns” can be analysed through flow analysis and illustrated in maps.

Project matrixes: connecting concepts with indicators, themes and methods

In the intermediated step concepts (and operationalized concepts) are connected to specific indicators grouped in themes linked to general methods. The connections has been illustrated and structured in matrixes, one for each relevant ESPON project, identified in the project reviews (outlined above). In the process both general methods and themes of indicators has been identified. Most ESPON projects adopt several analytical concepts, different more or less innovative methods and use wide range of indicators. The methodological approaches used within ESPON can be categorised into six main groups:

- Territorial profiling: benchmarking, indexing (quantitative) etc.
- Stakeholder interaction: questionnaire, interviews, workshops, Delphi etc.
- Statistical analysis: econometrics, regression analysis, etc.
- Evaluation: impact assessment, SWOT (qualitative) etc.
- Foresight: scenarios etc.
- Others: desk research, literature review, policy analysis etc.

Various ESPON projects have developed, expanded and enhanced these methods further in different directions. A key task of the DeTeC Project is to illustrate and modify their applicability in other regional contexts as regards territorial analysis and policy development. Furthermore, each method contains a range of indicators, which can be grouped in six key themes:

- Economy and innovation
- People and labour
- Land-use and settlement patterns,
- Energy and environment,
- Transport and mobility
- Governance and policy

The indicators are both qualitative and quantitative and can be analysed through different methods (e.g. regression analysis, impact assessment, indexing as listed above) and illustrated in various formats (e.g. maps, tables, figures, texts).

Method reviews: connecting and re-developing methods and approaches

Finally based on the project reviews and through project matrixes, and in coordination with the development of territorial approaches (see below) interesting and innovative ESPON methods has been identified. A focus in the method reviews (see annex 1) is thus the innovative aspect of the projects, and their relevance for detecting territorial potentials and challenges. For example if the ESPON project

developed a new and/or revised method (i.e. EATIA, TPM, SS-LR), or the project used or combined existing methods in innovative ways (i.e. METROBORDER, POLYCE). So far, twelve interesting and innovative ESPON methods has been identified:

1. Assessing functional integration
2. Assessing polycentric development
3. Attractiveness indexes
4. Cross-border institutional mapping
5. Econometric analysis of agglomerations
6. Multilevel governance analysis
7. Spatial scenarios
8. Territorial impact assessment
9. Territorial performance monitoring
10. Territorial profiling and performance
11. Understanding differential growth
12. Urban growth modelling

Each method is shortly described in annex 1: Method reviews. Apart from a short presentation of the methods including indicators and type of data the descriptions also indicates the usage of the methods. The usage of the methods is indicated in two ways, by relating the results to different territorial approaches and by highlighting the connected concepts such as functional integration, polycentric development and multilevel governance. The method reviews is being circulated to the project leaders of each projects in order to assure the accuracy of the reviews, and give opportunities for insight comments from the project leaders. An additional benefit from this exercise is to facilitate interactions within the ESPON community and connect various projects. The method reviews has been done in conjunction with development of different territorial approaches.

3 Territorial approaches and methods

Five distinct territorial approaches for detecting territorial potentials and challenges of a region from a European perspective using ESPON knowledge has been identified:

- Detecting global and future challenges and potentials
- Detecting territorial characteristics and comparing the performance
- Detecting functional areas and internal coherence
- Detecting current and potential external linkages
- Detecting opportunities for territorial governance

The territorial approaches are based on knowledge and approaches developed within ESPON and contain different methods including indicators. Each territorial approach contains references to concrete examples of how these methods have been used in different ESPON projects.

Each indicator is further more connected to a key concept. This means that if the focus is on detecting territorial potentials and challenges for e.g. polycentric development this can be explored through specific indicators using certain methods of analysis. And vice versa, analysing specific indicators with certain methods can for example help to detect the potentials for agglomeration economies or the functional area of a region.

The key concepts that are being identified are both policy oriented and of more analytical character. Some concepts are meta-concepts while others indicate a high degree of operability (operationalized concepts). It is occasionally difficult to distinguish between key themes of indicators and concepts as in the case of governance and demography. The definition and usage of concepts are to a large degree dependent on the general character (i.e. micro, meso or macro concepts) and the territorial scale of their applicability (e.g. European, national, regional or local).

Detecting global and future challenges and potentials

The first territorial approach “Detecting global and future challenges and potentials” is based on the idea that external processes influence territorial development of a region or a city. It is therefore important to do comprehensive analysis for identifying macro-challenges and global changes that directly or indirectly influence and effect the territorial development of the region. The approach also includes creating spatial scenarios and regional forecasts to approximate the future situation of a region. It is also important to familiarise and understand key policy (meta-) concepts such as territorial cohesion, sustainable development, territorial capital, and smart specialisation as well as what these concepts mean in terms of regional development in the region at hand.

A number of ESPON projects directly address the issues detecting global and future challenges and potentials. The TPM project, for example has identified four macro-challenges that can be analysed through different indicators. The SS-LR project has used six themes of long-term challenges: demography, economy, energy, transport, urban systems, rural areas and rural development to develop different spatial scenarios. The project has also developed spatial scenarios based on econometric models using macro-economic indicators combined with regional structure elements. Key concepts for related to detecting global and future challenges and potentials include territorial cohesion, sustainable development, territorial capital, and smart specialisation.

Innovative ESPON methods that have specific potentials for detecting global and future challenges and potentials include **Spatial scenarios.** Other methods with potentials for this are **Territorial impact assessment** and **Territorial performance monitoring**

Detecting territorial characteristics and comparing the performance

The second territorial approach "Detecting and comparing the characteristics and performance" is based on the idea that every region and city is unique and strives to improve their performance. To detect and expose the territorial characteristics and compare the region's performance it is essential to contextualise it in relation to other spatial entities. Initially the typologies developed within ESPON might be used to identify the type of region and other comparable regions (see ESPON Typology Compilation 2009). The characteristics of a region can be distinguished through a number of themes and there are numerous methods used in various EPSON-projects. The performance of a region relates to its comparative advantage potential for agglomeration economies and endogenous growth. Key concepts related to the detection of the territorial characteristics of a region include: comparative advantage, agglomeration economies, endogenous growth, and attractiveness.

A number of ESPON projects directly address the issues of detecting the territorial characteristics of a region and comparing the performance. For example, In the EUROISLAND project different attractiveness indexes (including ESPON'S multimodal accessibility index) have been developed to indicate the attractiveness of a region. The INSTED project has used structural variables in order to compare regions. In the SURE project economic drivers and economic enablers have been identified to indicate economic growth as well as factors relevant for an efficient allocation of resources to assess territorial cohesion and policy. The PURR project has used the EDORA typology to indicate regional performance combined with regional performance indicators. The TEDI project has applied flow indicators such as potential commuting area, standardised potential accessibility by air, total aircraft movements, freights handles by maritime port, multimodal standardised accessibility

to indicate the comparative advantage of a region. The CAEE project has investigated the agglomeration economies of regions through econometric analysis. The ULYSSES project has used territorial performance analysis to assess territorial cohesion based on territorial profile analysis: (a) net migration, (b) GDP per capita, (c) average annual change in GDP.

Innovative ESPON methods that have specific potentials for detecting the characteristics and comparing the performance of regions include **Territorial profiling and performance** and **Creating attractiveness indexes.** The method **Assessing functional integration** can also contribute to detecting territorial characteristics. Other methods with potential for this are **Econometric analysis of agglomerations, Understanding differential growth** and **Territorial performance monitoring**. **Multilevel governance analysis** can also be used to detect territorial characteristics and comparing the performance with other regions.

Detecting the functional areas and internal coherence

The third territorial approach “Detecting the functional areas and internal coherence” is based on the idea that every region is internally diverse and that each administrative region or city is part of multiple functional areas. To detect the challenges and potentials of a region it is important to identify and understand the internal coherence and functional areas of a region. Key concepts related to detecting the functional areas and internal coherence include metropolisation, polycentricity, urban-rural interaction, cross-border development, urban systems, and functional urban areas.

A number of ESPON projects directly address the issues of detecting the functional areas and internal coherence. The POLYCE project has, for example used various forms of indicators for polycentric development both morphological and relational indicators and functional metropolitian areas. The CAEE project has applied multi-level governance analysis with indicators of administrative fragmentation to detect institutional capacity.

Innovative ESPON methods, which have specific potentials for detecting functional area of a region include **Assessing functional integration** and **Assessing polycentric development** which might also be used for detecting internal coherence of a region. The method of **Cross-border institutional mapping** can be used to explore the functional (governance) area of a region, as can the method **Urban growth modelling.**

Detecting current and potential external linkages

The fourth territorial approach ”Detecting current and potential external linkages” is based on the idea that external flows and relational networks that are for instance expressed through international relations and cross-border interactions increasingly

influence regions. It is thus important to analyse the current and future potentials of such linkages spanning across regional, national and international borders. The connectivity and accessibility of a region is dependent on various networks and flows; transport linkages, ICT, business networks and so on, but also on the spatial position of the region at hand in the European urban and regional system. Key concepts related to detecting current and potential external linkages include urban systems, polycentricity, accessibility, connectivity, and cross-border development

A number of ESPON projects directly address the issues of detecting current and potential external linkages. For example, The METROBORDER project has used institutional mapping to indicate cross-border development but also used indicators such as frequency and average speed of cross border transportation lines to indicate cross-border polycentric development and cross-border metropolisation. The BEST METROPOLISES project has investigated urban systems and the position within European and national urban systems to detect metropolisation. The POLYCE project has also used positioning within European urban systems to assess polycentric development and metropolisation. The ULYSSES project has applied a two dimensional institutional analysis of cross-border cooperation. TEDI project has used flow indicators such as potential commuting area, standardised potential accessibility by air, total aircraft movements, freights handles by maritime port, multimodal standardised accessibility.

Innovative ESPON methods that have specific potentials for detecting current and potential external include **Assessing polycentric development**. Another method with potentials for detecting linkages is **Urban growth modelling.** The method of **Cross-border institutional mapping** can be used to explore cross-border development and governance.

Detecting opportunities for territorial governance

The fifth territorial approach “Detecting opportunities for territorial governance” is based on the idea that the territorial organisation, institutional arrangements and practices are crucial for regional development. To detect territorial challenges and potentials it is therefore imperative to analyse the territorial governance and government structure and practices within a region. Key concepts related to detecting opportunities for territorial governance include policy integration, collaborative planning, cross-border cooperation, and institutional capacity.

A number of ESPON projects directly address the issues of detecting opportunities for territorial governance. The CAEE project has, for example, used multi-level governance analysis with indicators of administrative fragmentation to detect institutional capacity. The METROBORDER project has analysed policy integration in metropolitan areas through levels of horizontal and vertical cooperation, and levels of inhabitants participation. The RISE project has developed a policy toolkit for analysing the regions integration and strategies.

Innovative ESPON methods that have specific potentials for detecting opportunities for territorial governance include **Cross-border institutional mapping**. Another method with potentials for this is **Multilevel governance analysis.** And also **Territorial impact assessment** and **Territorial performance monitoring** have potentials for detecting opportunities for territorial governance.

4 An outline for utilising ESPON knowledge

In order to provide practical guidance of how practitioners and policy makers can utilize ESPON knowledge for detecting territorial potentials with illustrative examples a conceptual framework is being developed based on the inventory and systematic review. The conceptual framework is the embryo of the guide for detecting territorial potentials and challenges of a region from a European perspective. The guide will eventually be developed into an interactive handbook, after the regional applicability of the framework has been assessed through regional laboratories.

Conceptual framework

The conceptual framework is a crucial part of the link between European experiences and ESPON knowledge supply on the one hand with practical regional challenges (and potentials) and knowledge demand on the other hand (see Figure 1). It is also the link between the research-oriented systematisation of analytical approaches and methods, the regional application and laboratories, and the synthesising and knowledge transfer (see figure 2). The conceptual framework contains four main layers of information (see figure 3) that follow a top down hierarchy, but are characterised by strong inter-linkages, as explained below.

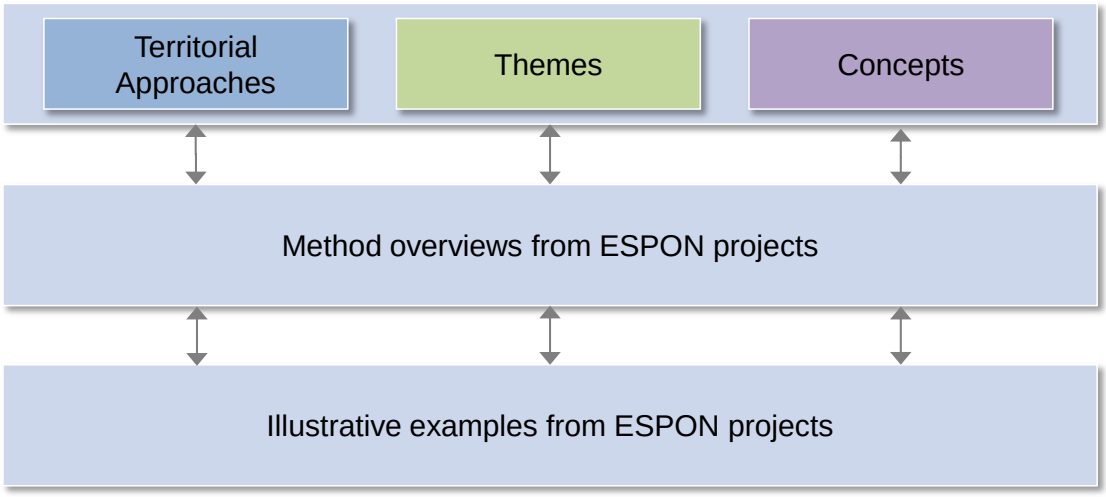


Figure 3 Four layers of information in the conceptual framework for detecting territorial potentials and challenges

Territorial approaches, concepts and themes are categories, under which the information outputs are subsumed; the information output can illustrate territorial approaches as well as methods for detecting territorial potentials and challenges and illustrative examples. One method may apply to several territorial approaches or themes as well as one concept may be approached by different methods. Also, concepts are interlinked with territorial approaches and themes and vice versa.

The structure of the conceptual framework takes into account the abovementioned inter-linkages as well as the knowledge demand of the stakeholders and their different angles to approach certain regional issues (see Figure 4). The user of the guide will be able to access the information he/she is interested in from three generalized entry points (territorial approaches, concepts, themes), or directly (methods), if he/she wishes to do so. Therefore, the conceptual framework contains four entry points for the question of detecting territorial potentials and challenges with help of ESPON knowledge:

1) **Territorial approaches**: e.g. detecting global and future challenges and potentials, detecting and comparing characteristics and performance, etc.

2) **Themes**: e.g. economy and innovation; people and labour; land-use and settlement patterns, etc. Themes are derived from indicators used in ESPON methods.

3) **Concepts:** e.g. polycentric development; functional integration; territorial cohesion; etc. Concepts are derived from ESPON projects.

4) **Methods**: e.g. territorial impact assessment, multilevel governance analysis, urban growth modelling, etc.

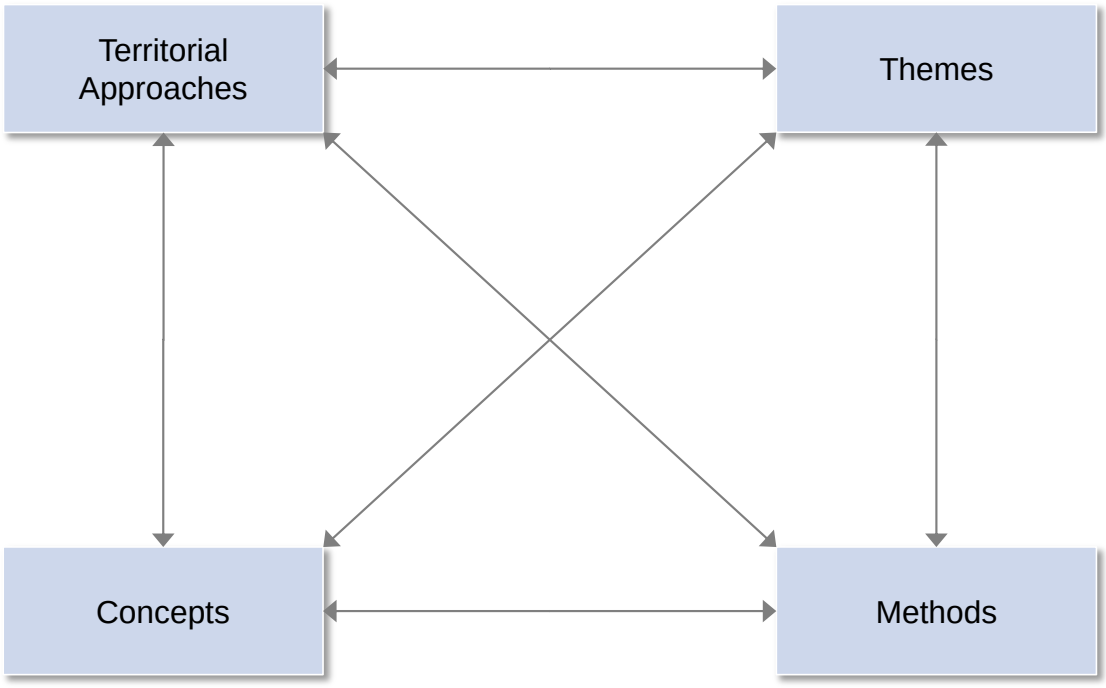


Figure 4 Structure of the conceptual framework for detecting territorial potentials and challenges

The framework combines territorial approaches, concepts, themes and methods multi-directionally, allowing different paths to generate knowledge on territorial potentials and challenges. In order to display the multiple inter-linkages between the

different layers and types of information and to enhance usability the conceptual framework is designed and presented in a flexible and interactive way.

A key issue in developing the conceptual framework (and the guide) has been to identify the main target groups and potential usage of the guide. Based on an internal workshop exercise the main target group (but not exclusive) and potential usage is defined as:

- Policy makers and practitioners in the field of regional development or spatial planning, who are in an executive, leading position, making strategic decisions at regional level.
- The guide is most likely to be used in long-term strategic development, e.g. to support the design or evaluation of regional development plans and programmes.

Form and content

The framework will be presented to stakeholders during the regional laboratories and eventually further developed into a tangible guide, i.e. an interactive handbook. It is crucial that the conceptual framework is presented to practitioners and stakeholders in an illustrative and accessible format as outlined in Figures 6 to 8. The presentation for detecting territorial potentials and challenges is based on the list of territorial approaches, including methods of analysis, themes of indicators, key concepts and illustrative examples (outlined above) and structured following the logic of the conceptual framework. It will be used in the regional laboratories to show practitioners and stakeholders different angles on how to utilise ESPON knowledge and how to answer specific research questions in the field of regional development. Additionally, the regional laboratories will serve as testing grounds for the applicability of the conceptual framework and evaluate which components of ESPON knowledge are transferable.

Figure 5 shows the cover page of the presentation, which offers the user the four different entry points with the associated categories[1]. The user can start his/her query either from territorial approaches with 5 categories, themes with 6 categories, concepts with numerous categories (under development) or directly by clicking on the methods field, where he/she will obtain a list of both the 12 innovative ESPON methods as well as more general methods used in ESPON projects.

[1] Concepts and Methods not yet fully implemented, as they are still under development.

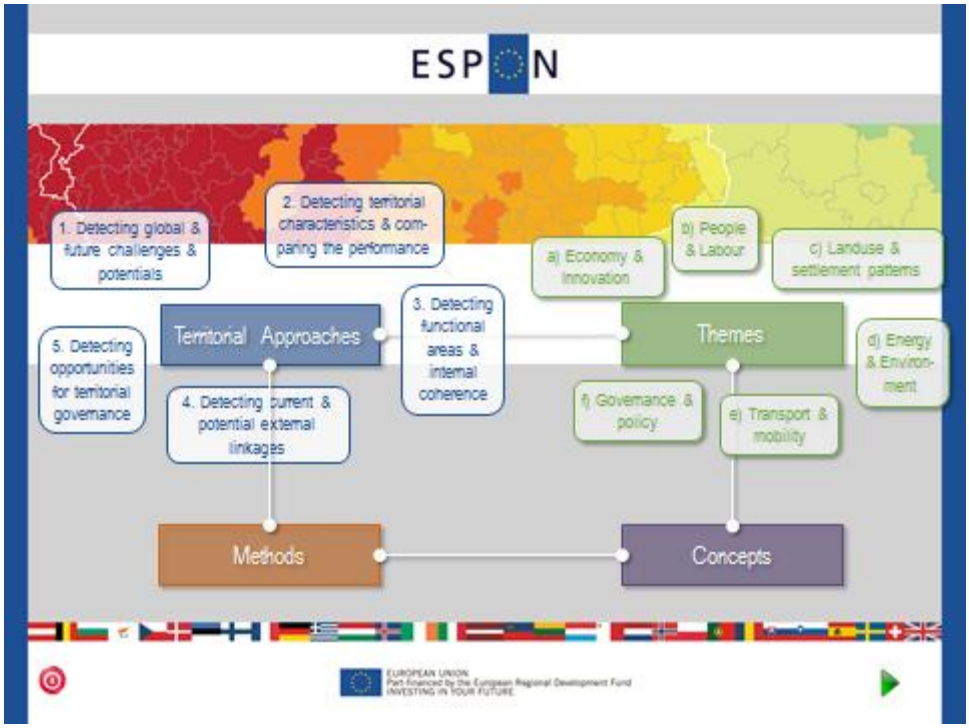


Figure 5 Cover page of the presentation for detecting territorial potentials and challenges

Figure 6 Page of the draft guide showing an overview of the selected Territorial Approach

When the user has for example decided on starting his/her query with territorial approaches by clicking on the respective category field, the next page of the presentation will provide him/her with some basic information on the theoretical and methodological background of the approach, as well as a list of associated innovative ESPON methods (see Figure 6). Each territorial approach has an attached symbol (displayed on the top right), which will serve as a guiding system for the user: All the methods, which are associated with a specific territorial approach, will also display this symbol on the top right. One method may display numerous symbols, as it can be associated to more than one approach. The user may click on the symbols as well as on the buttons displayed on the bottom of the page to navigate vertically or horizontally between the categories In our example, the user has now reduced the selection of methods to three, according to his/her choice of a territorial approach (see Figure 6). He/she can now choose one of the suggestions, to obtain more information.

The next page gives the user an overview on the theoretical and methodological background of the selected method (See Figure 7). The symbols on the top right indicate, that the selected method is associated with two territorial approaches. If the method description fits the purpose of the user or if he/she is in need of additional information explaining the field of application of the method, he/she can click on the button on the bottom right to obtain an illustrative example on how the method has been used in an example case (taken from ESPON projects).

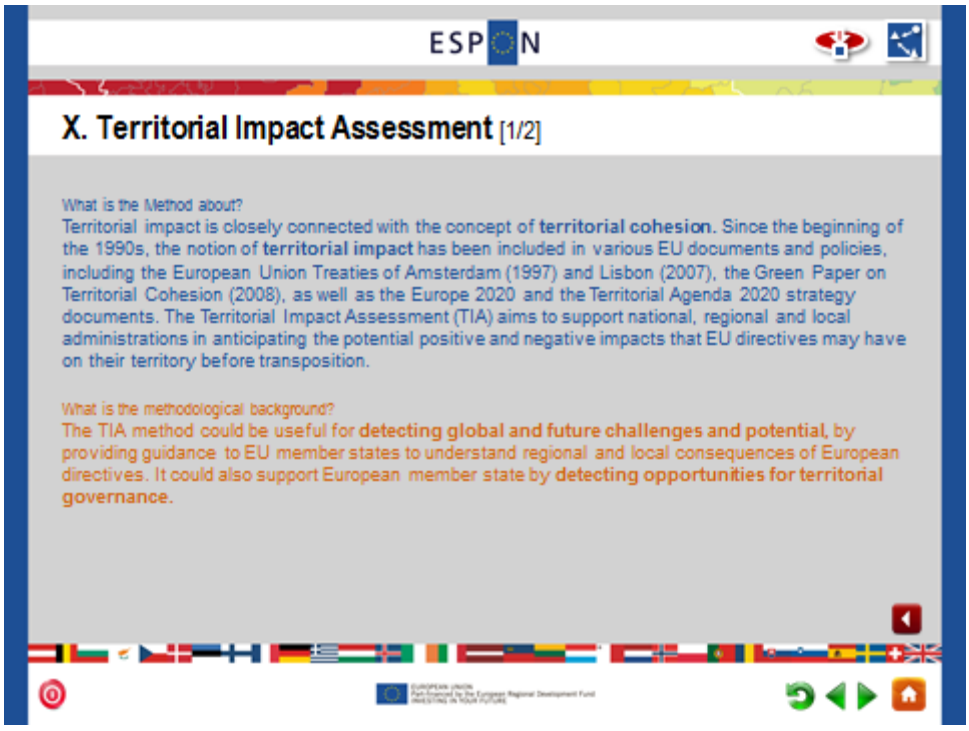


Figure 7 Page of the presentation showing an overview of the selected ESPON method

As a last step, if the user has decided on a fitting innovative ESPON method, the presentation will finally provide guidance towards in-depth description of the respective method, i.e. towards the scientific report of the ESPON project, which elaborated the method.

As the close collaboration with and the input of practitioners and stakeholders is crucial to the success of the project and the usability of the interactive handbook, the guide is aligned with the specific research questions, issues and problems of the stakeholders taking part in the regional laboratories (see Chapter 5). On the basis of these specific regional questions, the fitting ESPON method will be elaborated and presented in an interactive way, reflecting on the structure of the conceptual framework. Following this methodology, the practical regional challenges (and potentials) and knowledge demand of the stakeholders taking part in the regional laboratories will be combined with European experiences and ESPON knowledge supply (see figure 1). The feedback of the participants on the applicability of the guide will help to further elaborate the structure of the conceptual framework.

A guide for detecting territorial challenges and potentials of a region from a European perspective will be the main tangible outcome of the project. The main objective of the guide is to provide guidance and practical examples, and also an introduction to ESPON. It is expected to be a source of inspiration for both practitioners and policy makers performing their activities at different territorial levels (from the local to EU). A focus will be to integrate a larger European perspective in practice and policy making of all European regions and cities.

Interactive handbook

The interactive handbook, which on the one hand contains an introduction to the ESPON programme and its mission and actions and on the other hand provides a structured overview of analytical approaches and methods with illustrative examples for detecting territorial potentials and challenges (see table 1). In order to meet the requirements of the diverse knowledge demand of regional stakeholders and the complexity of approaches and methods, the interactive handbook will present information in a structured way, at the same time offering different paths to knowledge generation. The linkages between territorial approaches, concepts, themes, methods and territorial contexts will be shown in a clear and graphic way, offering the user to navigate along logical chains. The interactive handbook allows the user to “jump” between different information outputs and levels of information, which enhances applicability and fosters the readability.

Figure 8 shows an example of how the interactive handbook could be designed as an interactive PDF document (created by ÖIR (2007) for the LEADER Observatory Network,) combining text parts with a graphical guiding system. In the frame on the left side of the document, hyperlinks allow for a swift navigation through the contents. Symbols with specific colour/pattern codes indicate the position in different pre-

defined hierarchies and facilitate navigation. The conceptual framework of ESPON DeTeC could be implemented in a similar way.

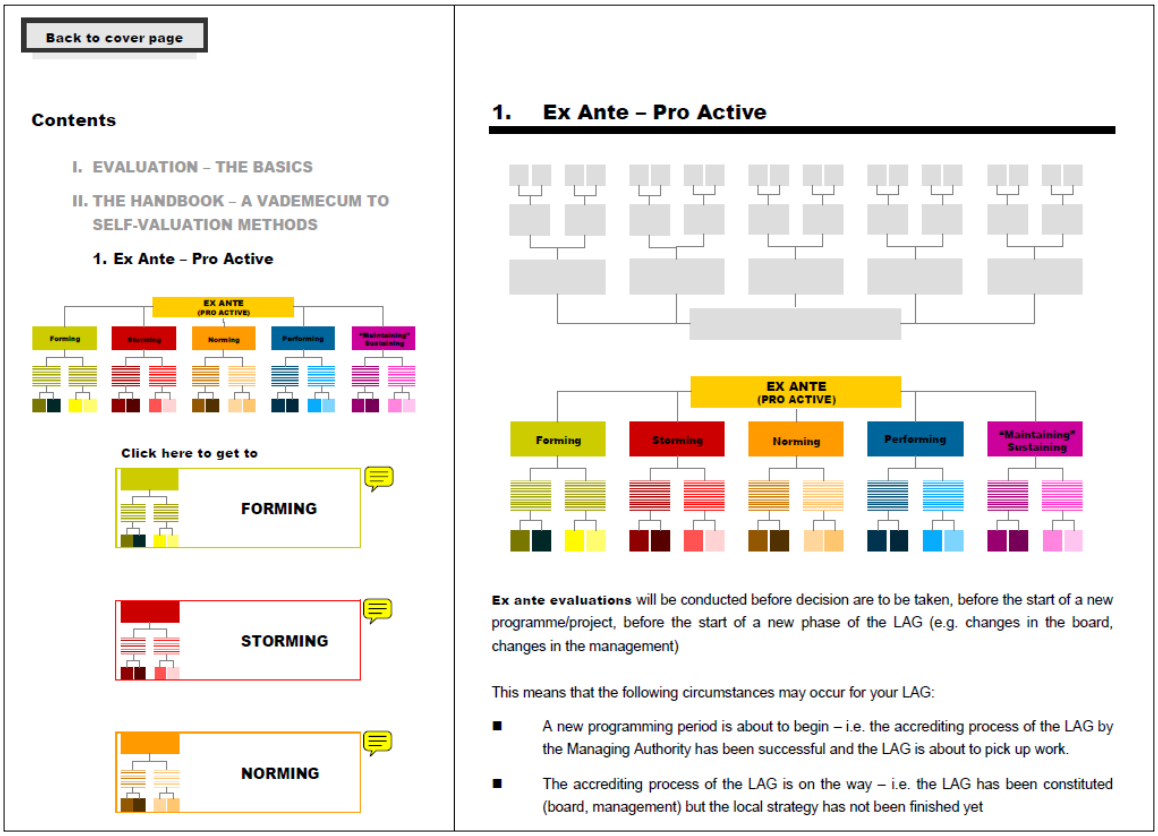


Figure 8 Possible design of the interactive handbook (ÖIR, 2007)

Because of the integrated guiding system and clear structure of the document, huge amounts of information, texts, graphics etc. can be implemented without confusing the user. Table 1 shows the draft table of contents of the guiding document, which reflects on the elements of the conceptual framework. However a static table of the content is partly a misrepresentation since the final guide will be an interactive handbook.

To further enhance the applicability of the guide, various formats could be developed although it is important to have a platform neutral base (i.e. the interactive handbook in pdf.-format) so that it can be used and applied in various settings. The guide could then, using for example a publishing tool such as iBook Author, be developed into for example an electronic guide on utilising ESPON knowledge for detecting territorial potentials and challenges. The interactive handbook could then also be implemented as a type of animated website, e.g. in form of an e-book, making it available on tablet pc's and other mobile devices. Adding dynamic, multi-touch elements or even movies or dynamic 3D images in this case could enhance navigation through the document and readability of inter-linkages.

1.	**Detecting territorial potential and challenges – the basics**
1.1	How to detect territorial potential and challenges? – Some terminology
1.2	ESPON-Programme: Mission and Actions, Projects, knowledge base
1.3	How to choose the right method? – Explanation of the Conceptual framework
2.	**Guidance on detecting territorial potential and challenges**
2.1	**Territorial approaches**
2.1.1	Territorial approach 1
2.1.2	Territorial approach 2
2.1.3	…
2.2	**Themes**
2.2.1	Theme 1
2.2.2	Theme 2
2.2.3	…
2.3	**Concepts**
2.3.1	Concept 1
2.3.2	Concept 2
2.3.3	…
2.4	**Methods**
2.4.1	Method overview 1
2.4.2	Method overview 2
2.4.3	…
2.5	**Illustrative examples from ESPON projects**
2.5.1	Illustrative example 1
2.5.2	Illustrative example 2
2.5.3	**…**
2.6	**Practical examples from Regional Laboratories**
2.6.1	Practice example 1
2.6.2	Practical example 2
2.6.3	**…**
3	**Resources**
3.1	ESPON Tools and Maps
3.2	Scientific method descriptions
3.3	Relevant policy documents

Table 1. Draft table of content of the interactive handbook

A presentation of the conceptual framework presents the inventory of territorial approaches and methods in a structured way and because of the complex and context dependent nature of regional knowledge demand and the limited transferability of methods, techniques, know-how and operating rules from one territorial level to the other or between regions, the guide has to present information in a generalized manner, while at the same time maintaining applicability in regional contexts. Therefore, the aim of the guide is not to give a qualitative statement about the applicability of methods in specific regional contexts (i.e. providing the "best solution" for a specific situation), but rather show practitioners different options of methods and approaches derived from ESPON knowledge. Illustrative examples shall serve as clues to support practitioners with the selection of the appropriate method on detecting territorial potentials and challenges.

Illustrative examples

One of the objectives of the DeTeC project is to provide concrete examples of good practices in utilising territorial potentials and/or deal with particular challenges including a European outlook and combining ESPON results with local and regional knowledge. This is done in a two-step process:

(1) Illustrative examples are identified within ESPON projects for each of the twelve methods (see annex 1). The illustrative examples show how methods and indicators have been implemented respectively applied in European regions. Thus the illustrative examples add the territorial dimension to the method reviews.

(2) Following the structure of the illustrative examples (as described above), examples of (good) practices will be identified in terms of transferability and applicability. This will be done during the regional laboratories (see below).

Example of an illustrative example:

Functional integration has been measured in Malmö-Copenhagen - a cross-border polycentric metropolitan region. Different functionalities have been assessed and measured using different kinds of indicators. The example illustrates – among other things - the functional score for metropolitan quality by applying indicators such as importance in economic and political decision making, presence of knowledge intensive services, transport connectivity, etc.

Detecting and utilising territorial potentials is a highly context dependent issue as it involves the specificities and uniqueness of a region. The development of a conceptual framework and the identification of illustrative examples are therefore centred on questions to identify transferable components. This implies i) identification of the components of illustrative examples for detecting and utilising territorial potentials and challenges; ii) how various components are used and how they shape

the practices; iii) which procedures are feasible for detecting and utilising territorial potentials, and, iv) how illustrative examples may constitute a trigger for learning and be transferred to other territorial and institutional contexts.

Different components of illustrative and practical examples are characterised by different possibilities for transferability (see OECD 2001). Ideas, principles for action and philosophies of practices are in general relatively easy to transfer. Methods, techniques, know-how and operating rules have a medium transferability whilst programmes, institutions, modes of organisation, practitioners and joint projects have a rather low transferability.

In order to test the transferability of analytical approaches and methods derived from ESPON projects to regional and local level, stakeholder consultation is necessary. A crucial methodological issue is thus to conduct the project in close collaboration with practitioners and stakeholders, and consequently meet the increased demand for evidence-based analytical approaches and methods supporting practitioners and policy makers. The regional applicability of the conceptual framework will be developed and assessed through regional laboratories (see below).

5 Regional laboratories

Regional laboratories' is a key feature of this practice-oriented project through which the regional applicability of the conceptual framework will be assessed and from which the guide is developed. The regional laboratories will include both research and policy activities, but more importantly direct engagement with policymakers, members of local authorities, non-governmental actors and other practitioners. The regional laboratories will also be important dissemination channels for the project and for transferring ESPON knowledge. ESPON knowledge and experiences are furthermore been used to set up the regional laboratories, i.e. ESPON typologies have been used in the selection of regions (see figure 9) and inspiration for the regional profiling comes from ESPON projects.

Regional application

The process of testing the regional application will be conducted in closely monitored and documented three-step procedure:

1. **Target group meeting** (half a day) in which ESPON in general and the conceptual framework through the presentation guide as well as the regional profiles are presented to a focus group of key regional stakeholders. The meeting will function as an eye-opener what ESPON useful for and clarifies what the regional stakeholders can expect from the DeTeC project. It is also an opportunity to collect input on the structure and form of the conceptual Framework. In a second step, the specific research questions, issues and problems of the stakeholders taking part in the regional laboratories that may be tackled with help of the conceptual Framework are discussed and established.

a) Presentation and discussion of the guide and ESPON knowledge supply

b) Presentation of regional profiles as examples of the contribution of a pan-European perspective

c) Discussion on what is of interest to the regional stakeholders to include in the conceptual framework and agreement on some specific questions/issues/ problems that can be further explored

d) Preparation of the stakeholder workshop

2. **Internal working procedure** during which results of the conceptual framework will be elaborate based on the agreed upon research questions/issues/problems (fitting ESPON method(s) for the specific regional knowledge demand).

3. **Stakeholder workshop** (one day) organised in collaboration with the regional stakeholders will be set up. During the workshop a revised guide for detecting territorial potentials and challenges, adapted to the specific regional questions will be presented and its regional applicability will be examined. A key issue will be to receive input on how to develop the guide into a more applicable, concrete and

usable illustrative handbook. The workshop will also function as a way of disseminating ESPON experiences more generally by showing how ESPON-knowledge could be used for regional development as well as to identify and assess good practices in this respect. The TPG will contribute with a European perspective on the territorial potentials and challenges of the regions, departing from the regional profiling initiated in the selection phase.

Regional laboratories

Regional laboratories for assessing the regional applicability of the conceptual framework are set up across Europe in six regions (see annex 2):

1. Danube-Kris-Mures-Tisa Euroregion
2. Scotland
3. Malta
4. Podlasie
5. Skåne
6. Styria

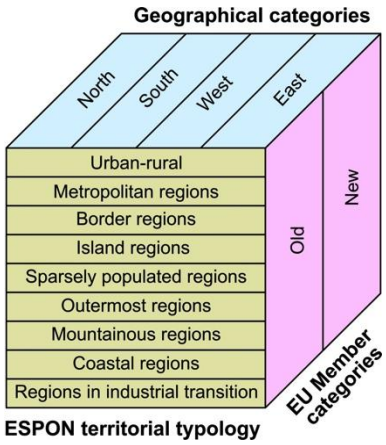


Figure 9 Territorial categories diversity cube

All the regions (or part of the regions), except Styria (Steiermark), are or have been involved in ESPON projects previously. Styria is used as an external reference point in order to assure the transferability to regions that have previously not directly been involved in ESPON-projects. All regions have confirmed their participation in the DeTeC project. The delamination of the study area if for example all of Scotland or if only a part it should be included is being discussed with the regional stakeholders and will be exactly determined during the target group meeting.

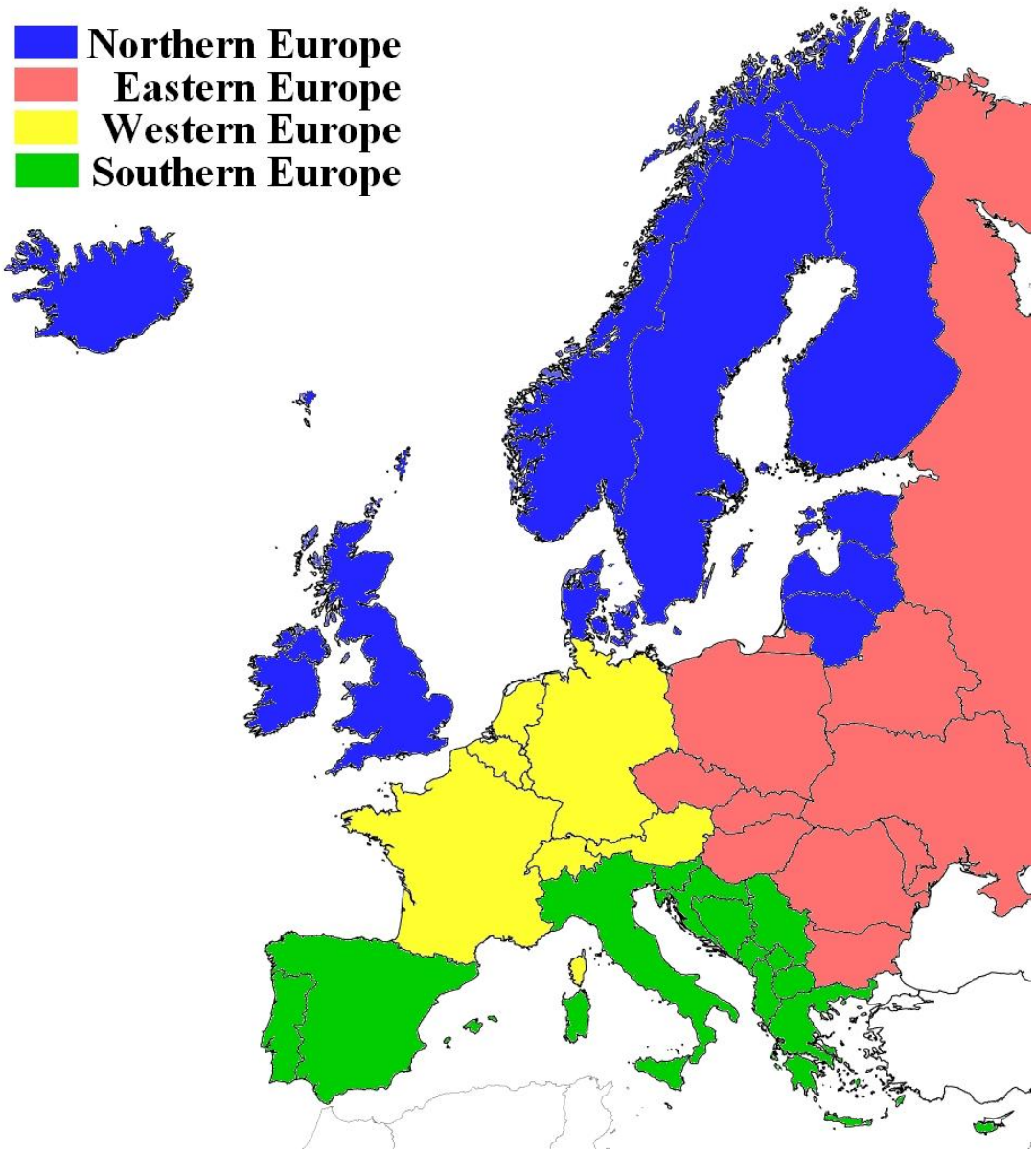
The regions are very different in size and shape as well as in terms of administrative structure and characteristics (see annex 2). Danube-Kris-Mures-Tisa is for example a border region of more than 3.4 million inhabitants including two Hungarian counties (Bács-Kiskun County, Csongrád County), three Romanian counties (Arad County, Caras-Severin County, Timis County) and the Autonomous Province of Vojvodina. Malmö is one unitary region with 33 municipalities and a population of 1.2 million, Podlaise is of similar population size but consists of 118 municipalities and is located at the border of ESPON territory. The republic of Malta is a densely populated island while sparsely Scotland, a part of the United Kingdom (UK), is a sparsely populated mountainous region and divided into 32 council areas. Styria

The diversity of the regions is a strategic and a consequence of using the following nine ESPON regional typologies in the selection phase. Each region is representing at least one type, and all together they cover all the different types of territories (see Figure 9:

- Urban-rural. Its classification is based on the share of population living in rural areas, the presence of large urban centres, and the accessibility of cities with at least 50000 inhabitants (remoteness dimension). Five types of regions are distinguished (predominantly urban; intermediate, close to a city; intermediate, remote; predominantly rural, close to a city; predominantly rural, remote). For the purpose of this project, the focus was on the intermediate areas, and on the predominantly rural areas close to a city.
- Metropolitan regions. Its classification is based on the Larger Urban Zones as used in the Urban Audit. The classification covers all metro regions with at least 250 000 inhabitants.
- Border regions. The selection of the border regions refers to the regions participating in the core areas of cross-border cooperation programmes on the internal and external borders of the EU and/or EFTA.
- Islands regions. Island regions are defined as territories having at least 1 km2 surface area, more than 50 inhabitants and at least 1 km distance between the island and the mainland with no fixed link (tunnel bridge, dyke) between them.
- Sparsely populated regions. Sparsely populated areas defined as regions with a population density of fewer than 12.5 inhabitants per km2.
- Outermost regions. The outermost regions category originally refers to the overseas regions of the EU. However, for the purpose of this ESPON project, the most peripheral regions have also been included in this category during the selection.
- Mountainous regions. The classification involved regions with more than 50% of their surface covered by mountain areas and/or more than 50% of their population lives in mountain areas.
- Coastal regions. Coastal regions are classified based on their share of coastal population.
- Regions in industrial transition. Three region types are covered by this typology (region with industrial branches losing importance, region with industrial branches gaining importance, region with internal industrial structural change).

The geographical location of the regions is dispersed across Europe with a balanced geographical coverage according to the United Nations geographic classification

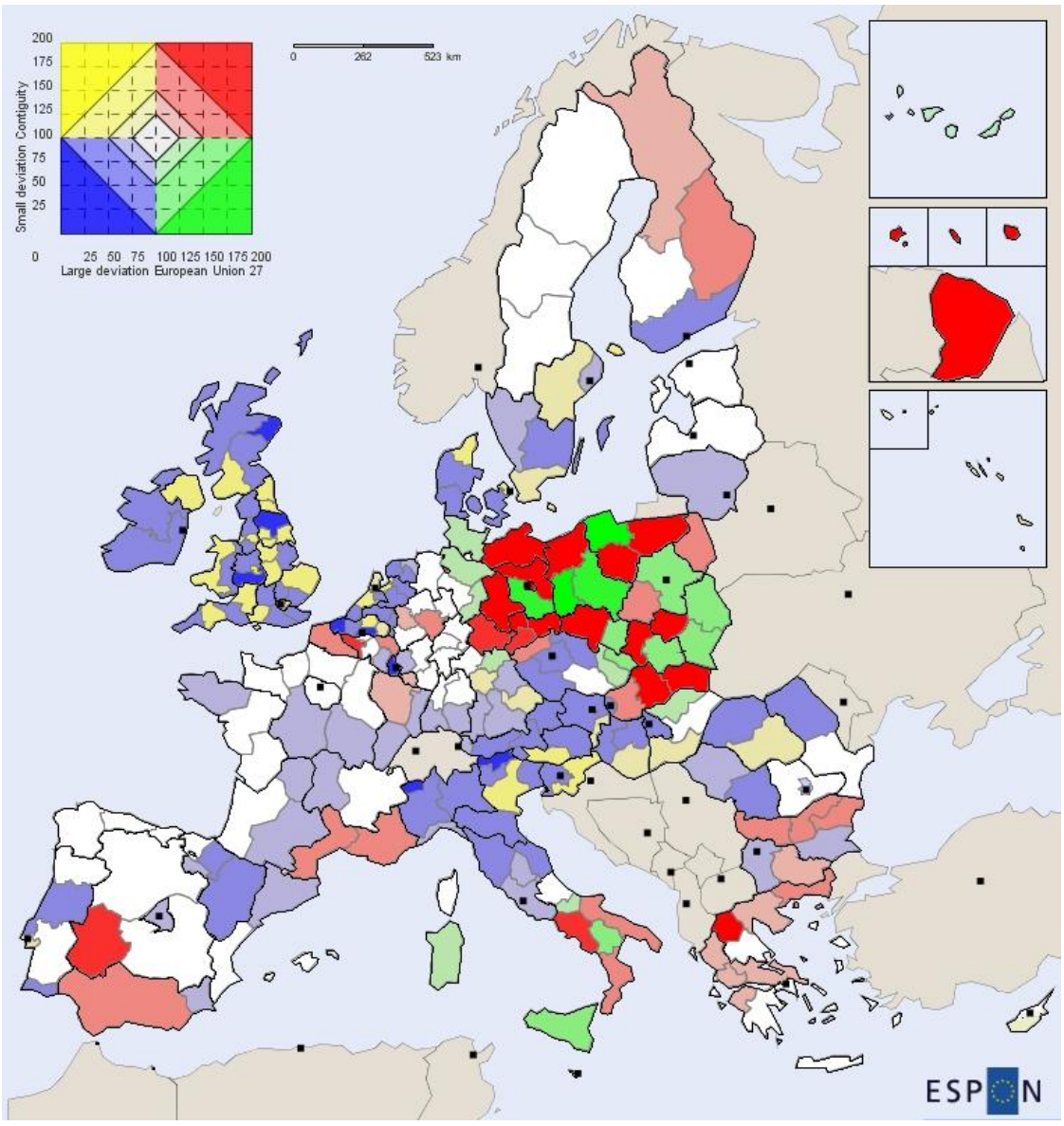
scheme, i.e. Northern, Western, Southern and Eastern Europe (see Map 1). And they also represent both old member states (EU-15) and new member states (joined in 2004 or later) (see figure 9).



Map 1 Geographical regions of Europe

Regional profiling

Regional profiling is an approach of exposing regional characteristics and indicating the performance of a region, which was used in for example the RISE project. It is also a starting point for detecting network relations of a region and the larger functional area of the region. It might also contribute to detecting the influence imposed on the region and the influences the region imposes on its surroundings. The regional profiles will mainly be based on existing ESPON knowledge, but also on other basic statics of the region (see annex 2). A region can for example be described in relation to the country it is situated in or the European Union as a whole. For example, Podlasie (Poland) is in a group of regions, where unemployment is greater than average in a country and in the European Union (see map 2).



Map 2 Unemployment in 2005 according to the European and National averages
Source: http://hypercarte.espon.eu/

Regional profiles will be used in the regional laboratories as material for the initial discussion. They can an eye-opener for what ESPON is useful for and initiate a discussion on how stakeholders can more efficiently assess the development potential of the region and more realistically evaluate the challenges particular region is facing.

Inspired by the RISE project (and by Regional Innovation Monitor), the regional profile will be structured in a similar manner, i.e. introducing regions from different perspectives, e.g. physical structure and socio-economic dynamics by elucidating key trends and processes occurring over Europe (including ESPON maps and tables with statistics showing regional differences in regions where regional laboratories are to be conducted including the mean value for EU27 as a point of reference). This is followed by qualitative analysis, wherein all regions are analysed individually and key challenges and opportunities to be discussed during the regional laboratories are highlighted.

The regional profiles will be divided into the following subsections, including analytical questions (Maximum 2-3 pages per region excluding maps and graphs):

1. The region in the EU system

What type of European policies and strategies influence the region?

- ERDF, Macro-regional strategies, European Cooperation programmes, Operational Programmes.

2. Physical structure and accessibility dynamics

How the region is geographically positioned in Europe and how is region physically structure?

- Land-use characteristic (CORINE)
- ESPON Typologies
- Accessibility and infrastructure

3. Socio (demographic) dynamics

What are the major socio-economic trends?

- Population dynamics (density, growth, fertility rate etc)
- Unemployment and education

4. Economic and innovation dynamics

What is the economic status of the region, and how has the economy changed over time? What is the regional business and innovation structure?

- Economic dynamics
- Business structure and Innovation

- Regional Innovation Monitor:
- Regional Innovation Profile Scotland (http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/index.cfm?q=p.baseline&r=UKM)
- Regional Innovation Profile Styria (http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/index.cfm?q=p.baseline&r=AT22)
- Regional Innovation Profile Skåne (Sydsverige) (http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/index.cfm?q=p.baseline&r=SE22)
- Regional Innovation Profile Podlaskie (http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/index.cfm?q=p.baseline&r=PL34)

5. Regional profile of the region (in a European perspective)

Synthesised profile of the region describing key trends and challenges from European perspective.

6 Work plan towards the Draft Final Report

So far, the project has mainly focused on systematisation of approaches and methods as well as the development of a framework for utilising ESPON-knowledge (i.e. extensive and conceptual forms of research). The next steps will include more interactive forms of research activities in line with the practices oriented perspective, and more intensive and synthetic forms of research. Regional laboratories assessing applicability and synthesising and transferring knowledge will be in focus in the process towards the Draft Final Report.

July-August

Finalisation of presentation package and preparation of regional laboratories

The final part of the preparation phase for the regional laboratories will be the third partner meeting in Warsaw in **29-30 September 2013**. For the meeting the regional profiles for each regional laboratory will be finalised and also the presentation of the conceptual framework. During the meeting the practicalities of the regional laboratories will be discussed and confirmed in order to ensure comparability, and possibilities for transferability. The format and content of the guide (and interactive handbook) will also be discussed during the meeting to ensure that the creation of the interactive handbook can start parallel with the regional laboratories.

September-November

Regional laboratories and construction of a detection guide

The initial target group meeting of the regional laboratories will be done during **mid-September**, partly depending on the regional contexts and the possibilities of the regional partners. During the initial target group meeting the stakeholder workshop will be discussed and confirmed. The stakeholder workshops are planned to take place in the later part of **October**, depending on the regional situation. The regional laboratories shall be finalised and documented by the end of **November**. The documentation will be done in accordance with a common template in order to extract lessons/feedback for the conceptual framework and the guide. During the fall the practical work with constructing the interactive handbook for detecting regional potentials and challenges of a region from a European perspective will begin.

December-January

Draft final report and further dissemination activities

The draft final report will then be submitted by **31January 2014**, followed by a policy seminar in Brussels during the beginning of February 2014, in order to confirm transferability, fine-tune the interactive handbook and further disseminate ESPON-knowledge.

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Annex 1. Method reviews

1.1. Assessing functional integration

1.2. Assessing polycentric development

1.3. Attractiveness indexes

1.4. Cross-border institutional mapping

1.5. Econometric analysis of agglomerations

1.6. Multilevel governance analysis

1.7. Spatial scenarios

1.8. Territorial impact assessment

1.9. Territorial performance monitoring

1.10. Territorial profiling and performance

1.11. Understanding differential growth

1.12. Urban growth modelling

Assessing Functional Integration

Functional integration within and between regions are key issue for territorial cohesion. The functional integration of (cross-border) regions can be analysed in terms of interaction and convergence, and is important for both metropolitanisation and polycentricity. Morphological urban areas (i.e. the built environment) and functional urban areas (i.e. commuting areas) are important tools of spatial analysis developed within the ESPON programme, which can also be used as the basis for analysing the functional integration.

Method

Functional integration can be understood in terms of both interaction and convergence of areas. Integration of functional areas have been measured according to demographic, transports and economic indicators.

Indicators of interaction between territories focusing on flows and barriers effects:

1. Indicator: Cross-border commuting (intensity, asymmetry and change)
2. Indicator: Cross-border transportation lines (all public transportation connections)

Indicators of convergence of spatial characteristics focusing homogeneity and discontinuities:

3. Indicator: Population density and growth (including residents' citizenship)
4. Indicator: GDP growth

Each indicator can be analysed in itself and compared with other regions but the indicators might also be synthesised and classified in order to assess cross-border interaction and convergence of a cross-border development (see Decoville et al. 2013).

Data

Assessing functional integration requires regional and national statistical demographic and economic data but also specific qualitative and quantitative data regarding cross-border transportation lines and commuting patterns.

Results

Assessment of functional integration has shown that there is a high diversity of integration processes in cross-border polycentric metropolitan regions. The method can contribute to **detecting the functional area of a region** but also to **detect the characteristics of a region**.

References

METROBORDER – Cross-Border Polycentric Metropolitan Regions
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/metroborder.html

Decoville A., Durand F., Sohn C. Walther O. (forthcoming 2013) Comparing cross-border metropolitan integration in Europe: Towards a functional typology, Journal of Borderlands Studies, 28(2).

Assessing polycentric development

The concept of polycentric development has emerged as an important notion within European spatial development agenda. Polycentric development refers to functional integration and consists of multiple urban nodes that are linked through multidirectional relations, a type of multi-scalar urban network. A polycentric urban structure can support territorial cohesion and sustainable development, and potentially mitigate costs of agglomeration, such as congestion and socio-economic disparities.

Method

Three different types of polycentricity can be identified: morphological polycentricity; relational polycentricity; and polycentricity in governance.

Morphological polycentricity can be analysed by measuring population size and number of jobs in functional metropolitan areas[2] and the metropolitan region centres. A regression coefficient can be used to generate an overview of size and territorial distribution of urban centres across a territory.

Relational polycentricity can used analysed through evaluating functional linkages between centers within functional metropolitan areas and metropolitan regions, considering the strengths of the interaction and flows between cities, and measuring commuter flows between job centers, physical distance and travel time.

Polycentricity in governance refers to the mutual interest and collaboration between nodes in the network. It can be measured through the level of interaction by analysing ethnic and historic relations, service firm networks, research cooperation and analysis of web search queries.

Data

Assessing polycentric development requires data from for example CORDIS, GaWC Research Network, EUROSTAT.

Results

By assessing polycentric development, regions can map **current and potential external linkages** as well as **detect functional areas and internal coherence**. By this meaning it can help regions to identify strategic alliances within the region as well as with other metropolitan areas, and improve their understanding of relation in urban networks. It can also serve as of identify firm networks and research collaboration.

[2] For studying polycentric development it is important to distinguish between different types of delimitation of urban areas. This include three types delimitations: Core City (capital cities in their administrative delimitation), Functional Metropolitan Area (daily urban system at micro- regional level delimited as areas of intensive commuting to work), and Metropolitan Region (wider economic mezzo- region reflecting the territorial networks of a city's economy).

References

POLYCE - Metropolisation and Polycentric Development in Central Europe: Evidence Based Strategic Options
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/polyce.html

Davoudi, S. (2003): “Polycentricity in European Spatial Planning: From an Analytical Tool to a Normative Agenda”, in: European Planning Studies, 11 (8): pp. 979 – 999.

Attractiveness indexes

In recent years great consideration has been given to geographical particularities within the EU of regional and intraregional inequalities. The territorial dimension has been included in the recent cohesion reports, lending a particular dynamic in the search of more specialized and integrated policies focusing on contributing to create attractive regions. Three indexes, Direct attractiveness index, Indirect attractiveness index and Attractiveness assets index, can be used to asses attractiveness of a region.

Method

The direct attractiveness index comprises of accessibility and agglomeration economies parameters.

1. For accessibility, the ESPON's Multimodal Accessibility Index as it is the only one covering the whole Europe at NUTS 3 level

2. For urban dynamism the Functional Urban Areas (FUA) concept was used, where data are available only at NUTS 3 level

These two indicators are selected among all attractiveness parameters as the most representative indicators of insularity influencing directly their attractiveness: the first records the differences of dynamism between cities based on their population size and their functions; the second records the difference of accessibility between the European territories, islands included.

The Indirect attractiveness index is related to "Lisbon Strategy" and consists of the following indicators:

1. The percentage of population with low education level of the total population in 2007 for labour qualification
2. The Research and Development expenditure as percentage of the GDP (2008);
3. The percentage of households with broadband access % of the total number of households for ICT evolvement
4. The unemployment % of young people (15-24 years old) for jobs opportunities;
5. The Governance indicator (qualitative approach from ESPON 2006.

These five indicators are selected among the attractiveness parameters that are. Data are available typically at NUTS 2 level and therefore the index is calculated only for this level.

The Attractiveness assets index is calculated with the use of the following indicators:

1. for natural assets, the percentage of NATURA 2000 area;
2. for cultural assets, the concentration of monuments in an area.

Data

As described above some of the indicators derive from other ESPON projects, data base and atlas projects. Other indicators especially related to the Indirect attractiveness index and the Attractiveness assets indicator can be found EUROSTAT web data base

Results

Creating attractiveness indexes contributes to finding territorial opportunities and strength. The method presented in this paper contributes to **detecting territorial characteristics and comparing the performance** of a region with others. The method and the indicators have been applied to Island regions in Europe (see illustrative example). Applying the method to other regions might imply that the use of indicators is revised.

References/sources

EUROISLANDS - The Development of the Islands – European Islands and Cohesion Policy. http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/EUROISLANDS.html

Cross-border Institutional Mapping

Governance and institutional capacity of a region is a complex process especially in cross-border contexts. Political representatives have asymmetric competences and spatial units are heterogeneous. Cross-border institutional mapping can be used in order to analyse cross-border development, and possibilities and challenges for multi-level institutional governance and multi-scalar geographical governance.

Method

Institutional mapping combines visualisation techniques and categorisation of complex political matters. The method focuses on the territorial scope, mandate and organisation of the cooperation through three step process:

The first step, multilevel mapping of cross-border institutions, is a systematic inventory of the geographical scope and scale and formal territorial level and mandates, i.e. local, regional, national and supranational authorities and other relevant governance institutions. It provides a geographical visualisation of the physical territories formally involved – a so called 'pooled' territory in three-dimensional cartography.

The second step is multi-level mapping of relevant domestic actors no matter if they are formally involved or not in the cross-border cooperation based on concrete policies, action arenas, political projects etc. It provides a more concrete picture of actual and potential governance patterns and might add additional scalar levels.

The third step, political topography mapping, adds a third governance dimension and provides a thorough analysis of the actual governance mechanisms in a concrete context and its territorial implications. Depending on the research question, a variety of objectives can be addressed through this, for example evaluation of actual power relations of the enrolled actors and hidden territorial agendas etc.

Data

Cross-border institutional mapping requires regional specific qualitative (and quantitative) data.

Results

Cross-border institutional mapping can be used to compare governance collaborations in terms for example of legal status, thematic scope, geographic scope and type of actors involved. The mapping method could be used to explore **the functional (governance) area of a region** but also for **detecting opportunities for territorial governance**. The method has been used and developed focusing on cross-border metropolitan regions (see illustrative example X).

Reference/sources

METROBORDER: Cross-border Polycentric Metropolitan Regions
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/metroborder.html

CHILLA, T.; EVRARD, E.; SCHULZ, C. (2012): On the territoriality of cross-border cooperation: “Institutional Mapping” in a multi-level context, European Planning Studies, vol. 20:6, p. 961-980 http://www.tandfonline.com/doi/abs/10.1080/09654313.2012.673563#.Ub7Z7djGC8w

Econometric analysis of agglomerations

Understanding the role of agglomeration economies in a region can be done through econometric analysis. Agglomeration economies can be conceptualized as either localization economies or urbanization economies. Localisation economies is based on a situation "…whereby firms are argued to benefit from localised supply chains, technological and knowledge 'spill-over' effects and the creation of pools of specialised labour skills whose attributes are well matched to the needs of a particular industry or set of related industries." (Final report, p 21). Theories on urbanisation economies make "…claims about the advantages gained by households as well as firms, regardless of sector, from intense concentrations of economic activity. Urbanisation economies are partially based on economies of scope which offer agents located in densely populated markets the opportunity to take advantage of positive externalities, such as those associated with knowledge spillovers across as well as within industries, the presence of a more extensive division of labour or increasing returns owing to firm-level economies of scale and improved firm-worker matching." (Final report, p 21)

Method

Through econometric analysis the importance of both forms of agglomeration economies can be assessed. One possibility is investigate the relationship between the two indicators employment density (i.e. jobs per land area within manufacturing and services activities) and labour productivity (GVA per job within manufacturing and services activities)within manufacturing and service activities. An analyses assessing elasticities related to the presence of similar or other sectors, thereby indicating whether localisation or urbanisation economies appear to be more important within more general agglomeration patterns.

Data

Data for calculating the indicators can for instance be accessed from Eurostat.

Results

The value of looking at agglomeration economies and governance has the potential to link together two largely independent debates that have taken place, in academia and policy-making circles, in recent years. The method contributes to **detecting territorial characteristics and comparing the performance with other regions**.

References

CAEE - The Case for Agglomeration Economies in Europe
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/CAEE.html

Multilevel governance analysis

For effective multilevel governance arrangements a low level of fragmentation at municipal level and where municipalities have enough autonomy to deliver their responsibilities in relation to agreed city-regional activities is important. It is also important that city-regional governance is institutionalised and can take on effective leadership in policy that can influence economic development. Furthermore that the economic importance of city-regions is formally recognised at higher governance levels, such as national level.

Method

Understanding the role of governance arrangements in a region can be done through a multilevel governance analysis. Indicators for the analysis can be structured on three different administrative levels and assessed against each other. The indicators are based on qualitative narratives of the regions but quantified in order to be compared.

Municipal level:

- Degree of local administrative fragmentation
- Municipal autonomy.

Metropolitan/city-regional level

- Relevant institutions
- Autonomy
- Capacity
- Clarity/strength of leadership
- Economic development focus?

Regional-national level

- Recognition of city within formal spatial development plans/policies
- Informal influence on regional and national policy & investments

Data

The indicators are derived from interviews as well as reviews of published and unpublished publications.

Results

The method contributes to **detecting opportunities for territorial governance** and can also be used to **detect territorial characteristics and comparing the performance** with other regions.

References

CAEE - The Case for Agglomeration Economies in Europe
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/CAEE.html

Spatial Scenarios

The capacity to transfer methodologies of spatial scenarios to the local-regional scale is a subject of major relevance for regional development policy. Policy makers and the main stakeholders involved in strategic planning processes need territorial forecasting instruments to detect the critical factors for territorial capital.

Method

The scenario method is based on both qualitative and a quantitative method through econometric analysis (MASST). The qualitative scenario-building methodology is based on identification of the institutional, socio-demographic and economic driving forces of change, and their possible alternative trajectories. The scenarios are not classical trend scenarios, since it takes into account shifting driving forces such as globalization, energy paradigm, climate change, social orientation, recent economic crisis.

The qualitative scenarios might be translated into quantitative foresight for all Nuts-2 European (MASST) and into Nuts-3 (sub-model: MAN-3, Masst-at-Nuts-3). MASST is an *economic* model, which is a combination of two different and interactive parts: a pure macroeconomic regional growth model estimated on past-growth; and a simulation algorithm for inspection of the future. The MAN-3 (Masst At Nuts-3) model (a new econometric model at the province level) explains differential growth rates of provinces with respect to their regions according to territorial specificities (i.e. territorial capital).

Data

Data required for MAAST model (NUTS 2), include macroeconomic elements (e.g. GDP, interest rates, productivity, FDI stock, exchange rates), employment growth by sector, regional structure, population growth, unemployment rate, settlement structure. Data requirements for the MAN-3 sub-model (NUTS 2/3):

- GDP growth rates of province with respect to its region
- Differential of the share of service employment
- Differential of the share of craft and related trades workers
- Differential of the share of touristic structures
- Differential of the share of urban fabric
- Differential of the share of people with less than 20 years
- Differential of the share of migratory balance
- Differential of the growth of the electoral turnout growth rates in the European elections

Results

The scenario method is comprehensive approach for creating scenarios at NUTS 2 level as well as for fine-tuning foresights at NUTS 3 level. It can be used by European regions to **detect global and future challenges and potential,** and support policy maker in their strategic planning process. The method has been used to analyse future challenges and development trajectories (see illustrative example X).

References

Spatial Scenarios: New Tools for Local-Regional Territories
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/SS_LR.html

Territorial impact assessment

Territorial impact is closely connected with the concept of territorial cohesion. Since the beginning of the 1990s, the notion of territorial impact has been included in various EU documents and policies, including the European Union Treaties of Amsterdam (1997) and Lisbon (2007), the Green Paper on Territorial Cohesion (2008), as well as the Europe 2020 and the Territorial Agenda 2020 strategy documents. The Territorial Impact Assessment (TIA) aims to support national, regional and/or local administrations in anticipating the potential positive and negative impacts that EU directives may have on their territory before transposition.

Method

TIA is a framework consisting of three parts; process, methods and institutional set-up. The process includes four steps, including screening, scoping, assessment and evaluation.

The screening process should determine if a Territorial Impact Assessment (TIA) is necessary. This decision should be based on the potential impacts that could arise from the adoption of the policy proposal. This analysis should be conducted by national authorities, using checklists, representing European territorial cohesion and other important national sustainability objectives. If a decision is made to go ahead with conducting a TIA, the first task is to define its scope.

The scoping process aims to steer the entire TIA process by determining if major territorial impacts are likely to result from the proposed policy, what the nature of these impacts is; and where these impacts are likely to emerge geographically. Scoping is also to be done by national authorities.

Following scoping, an impact assessment should be conducted by regional and /or local authorities. The assessment should consider the impact of the policy proposal on regional and / or local scales, in terms of the territorial characteristics.

The final step of evaluation is done by national governments, based on the information provided by the regional and local authorities. The assessment should determine whether the potential policy impacts identified are significant and how undesirable impacts could be circumvented or mitigated.

Data

TIA method requires active involvement of national authorities (governments) and experts as well stakeholder involvement by regional and/or local levels.

Results

The TIA method could be useful for **detecting global and future challenges and potential**, by providing guidance to EU member states to understand regional and local consequences of European directives. It can support European member states by **detecting opportunities for territorial governance** and **inform national positions on EU policy proposals**.

References

EATIA - ESPON and Territorial Impact Assessment
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/EATIA.html

Territorial performance monitoring

Territorial development at the regional level is becoming increasingly important for effectively addressing local and regional transformations as well as challenges at the European level. However, knowledge on the specific regional consequences of macro-challenges (climate change, energy supply, demographic development and globalization) is limited and appropriate regional planning tools are rare. Through territorial performance monitoring a region can learn more about how macro-challenges can be translated at the regional level and how to deal with these challenges effectively.

Method

The territorial performance monitoring can be described in the following five steps

1. Five level approach to macro challenges of how of challenges potentially act out at each scale and what possible levers are at that scale. As sizes of units at each scale, as well as repartition of competencies vary within Europe, this should be seen as a broad approximation, not a definitive assignment of issues to scales
2. A qualitative description of how the region perceives its regional competences and possible responses to the macro challenges on regional level.
3. The general organization of governance and the resilience of regions to current or future challenges are analyzed. An analysis based on policy documents and interviews with relevant stakeholders.
4. The global challenges are translated into regional issues through a mind map. The mind map should be seen as the beginning, not the result, of a reflection process.
5. The elements identified as relevant in the mind map have to be translated into measurable quantitative or qualitative indicators in order to allow a permanent monitoring process. It is imperative to distinguish, at each level, between:
   - Indicators of a situation and its evolution of a region.
   - Indicators of supra-regional constraints

Data

The data related to the four first stages of the method is derived from stakeholder interviews, workshops and policy reviews. The quantitative benchmarking indicators from step 5 derive from several sources such as EU 2020 Strategy, 5th cohesion report, Eurostat as well as other ESPON projects.

Results

In general, the method presented above contributes to **detecting opportunities for territorial governance** in order to deal with **global and future challenges and potentials** as well as to **detect territorial characteristics and comparing the performance** of a region with others.

References

1. TPM - Territorial Performance Monitoring
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/TPM.html

Territorial profiling and performance

A territorial profile and performance analysis can be used to detect how a region is performing compared to other regions or compared to EU goals and visions such as the Lisbon/Gothenburg goals or the EU 2020 goals. The method and the indicators presented below have specifically been applied to cross border regions in the ULYSSESS project, with reference to concept such as polycentricity and cross-border development.

Method

The analysis consists of two steps: Profiling the region and then detecting the performance of the region.

The territorial profile refers to indicators of four major territorial themes (cross-border polycentric development, patterns of urban/rural relationship, levels of accessibility and connectivity, and effects of demographic change):

- Indicators for measuring demographic change in (cross-border) regions (e.g. population density, net migration, natural growth, total growth, demographic potential, commuters to other regions, fertility rate, young age dependency rate, old age dependency rate, ageing index and demographic potentials) can be used to analyse how borders affecting settlement patterns, allowing to make hypothesis on the extent to which border regions are growing faster or slower than non-border region and if the population ageing in cross-border areas is taking place with different intensity than in non-border areas.
- Indicators for measuring polycentricity (morphological and functional urban areas , slope of the rank size distribution GDP, primacy rate GDP, slope of the rank size distribution population, primacy rate population, % population in FUA, % effective FUA pop change, compactness (MUApop/FUApop), Gini coefficient thiessen polygons) can be used to analyze how dense the urban network is and how the amount and size of the urban centers of cross border areas deviate from the rank-size distribution of the ESPON space.
- Indicators for measuring urban-rural relationship (change in urban fabric, agricultural areas, urban-rural typology, urbanization of natural areas, GVA in forestry and fishing, employment in forestry and fishing) can be used to analyze how different population patterns and densities relate to land use, and if the urban-rural typology is capable of explaining different evolutions in land consumption.
- Indicators for measuring accessibility and connectivity (potential accessibility road, rail, air; Households with broadband connections; composite indicator on the internet infrastructure) can be used to analyze the general accessibility levels of the (cross-border) areas regarding different modes of transportation.

The territorial performance refers to the capacity of (cross-border) regions in achieving a set of pre-defined policy targets, such as the Lisbon/Gothenburg strategy goals and the Europe 2020 strategy goals. For analytical purposes the indicators can be divided into four areas: economy and employment, innovation and research, social cohesion and environment.

Furthermore, to assess the relationship between the profile of a region and the performance of a region, in-depth statistical analysis can be used:

- A catching-up analysis may evaluate the speed of catching-up (or lagging behind) process with leading regions through a standard logistic process.
- A principal components analysis can group the different profile and performance indicators by maximizing the amount of variance accounted for in the observed variables by a smaller group of variables called 'components'.
- A multiple regression analysis informs on explicit and hidden relations between profile and performance indicators, having as independent variables each factor of the performance indicators and as dependent variables all the factors of the territorial profile.

In combination, the profile/performance analysis produces synthetic indicators for the capacity of (cross-border) regions in achieving the strategic goals (expressed as policy targets).

Data

The data needed for this method is primarily quantitative and derives from Eurostat, other ESPON projects, ESPON database, CORINE Land Cover database, EC 5th cohesion report as well as national statistics.

Results

Territorial profile and performance analysis contributes to understand which aspects of the **territorial profile** are most important in explaining regional capacity to achieve policy targets**.** It can also be compared to the institutional **performance of a region**, and provide specific inputs to traditional qualitative decision-making tools, such as standard SWOT analysis.

References

ULYSSES - Using applied research results from ESPON as a yardstick for cross-border spatial development planning
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/ulysses.html

Understanding differential growth

Understanding why some regions continue to lag behind others are able to accelerate their growth rates and catch up with the EU mean is of key importance for the success of EU cohesion policy. Searching for factors that affect above average and below average growth rates and to find a systematic comparison of relevant factors for economic growth is essential for supporting regional policy-makers to understand how to improve economic performance in regions.

Method

When analysing economic performance of regions and cohesion policy, three different kinds of factors is relevant for the economic growth of regions can be identified: drivers, enablers and EU funds allocation.

Economic drivers refer to factors which can have a direct positive impact for the overall regional economic growth, which can be influenced by regional and national politicians. These include policy relevant economic drivers, such as knowledge and innovation potential, accessibility, connectivity, quality of life, economic structure, regional financial means, and population structure/growth.

Economic enablers refer factors that do not have direct impact on regional economic performance, but indirect influence of the region. This can for example be institutional framework of EU or the national taxation regulations. In other words the enablers can be seen as efficiency indicators of how a region can use their potential within specific economic context. The factors that can be included in analysis are: company taxation, taxation of qualified persons, regulation of labour markets, and regulation of product markets.

Third dimension of factors, EU fund allocation, is connected to pre-conditions factors for successful cohesion policy and the management of the regional level. Examples of these factors are the efficiency of regional administration, the level of decentralisation within a country or political stability and the level of transparency (including low levels of corruption).

Data

Data requirements for analysing differential growth:

Economic drivers:

- knowledge and innovation potential (patent applications, shanghai score points, human resources in science & technology, tertiary education workers, R&D Expenditure,
- Accessibility (Multimodal accessibility, airport connectivity, potential accessibility,
- Connectivity (internet users)
- Quality of life (adult working age mortality rate)

- Economic structure (participation rate (labour market), informal economy, primary sector employment, unequal distribution of GDP per capita among regions within a country
- Regional financial means (EU structural funds 1994-1999, EU structural funds 2000-2006)
- Population structure/growth (population density, population growth, region size)

Economic enablers:

- Taxation (manpower taxation, company taxation, regulation of labour markets, regional of product markets)

EU fund allocation:

- Efficiency and loyalty of regional administration and government (corruption index)
- level of decentralisation, political loyalty and stability (level of corruption

Results

Understanding factors for economic growth is essential for regions in order to **detect territorial characteristics and comparing (economic) performance** with other regions in Europe.

References

ESPON SURE

- http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/SURE.html

Urban growth modelling

What is the optimal size of cities? There are different cost and benefit with urban development especially since cities are increasingly becoming urban agglomerations, functionally integrated metropolitan areas and part of urban systems crossing administrative core-city borders. Traditional understandings of urban development in terms of place-based benefits and costs need, thus to be complemented with nonconventional variables such as functions, networks and sprawl, and understood in terms of polycentricity, metropolitanisation and density.

Method

A relational urban growth model in form of a cost-benefit analysis of city size can be used to analyse the determinants of equilibrium city size. The basic formula consist of costs (size,rent,malaise,sprawl) and benefits (size,amenities,diversity,density, functions,networks). The dependent variable of the equation is *the physical size of cities measured through population level* model combines both traditional and nonconventional independent variables:

Traditional benefits

- *Quality of life and amenities measured through tourist inflows*
- *Urban creativity and diversity measured through diversity index*
- *Agglomeration economies and density measured through population density*

Nonconventional benefits

- *Metropolitanisation and high level of urban functions measured through workforce in advanced producer services (ISCO 1 & 2)*
- *Relational policenctricity and city networks measured participation in Framework Programme*

Traditional costs

- *Cost of the city and rent measured through cost of average apartment*
- *Social conflict and malaise measured through crimes per inhabitants*

Nonconventional costs

- *Diffused urban form and sprawl measured through % of non-built-up-area of the FUA*

Data/material

Most data for the different variables are available through ESPON and Urban Audit, but data regarding networks can be derived from CORDIS while rent data is derived from various sources.

Results/contribution

A combined analysis of both traditional and nonconventional indicators indicate that traditional agglomeration economies and density matters, but also that nonconventional views in terms of networks and functions also matters and can help cities to achieve equilibrium at a higher size. Urban growth modelling can be used to **detect the functional area of a region** but also for **detecting linkages** and indirectly for **detecting opportunities for territorial governance**.

References

POLYCE - Metropolisation and Polycentric Development in Central Europe: Evidence Based Strategic Options
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/polyce.html

Annex 2. Regional statistics

2.1. Danube-Kris-Mures-Tisa Euroregion

2.2. Scotland

2.3 Malta

2.4 Podlasie

2.5 Skåne

2.6 Styria

2.1 Danube-Kris-Mures-Tisa Euroregion

ESPON DeTec Regional Profile						
General characteristics						
1. Name of the region	**DANUBE-KRIS-MUREŞ-TISZA EUROREGION *(DKMT Euroregion)***					
2. Surface area (km^2)	**59 184 km^2**					
3. Location in Europe	North	West	**East**	**South**		
4. EU Member categories	**Old**		New			
5. ESPON Territorial typology	Sparsely populated	Metropolitan	**Regions in industrial transition**	Island regions		
	Coastal regions	**Outermost regions**	**Urban-rural**	Mountainous regions	**Border regions**	
6. Previous ESPON project(s) investigating the region	**ULYSSES**					
7. Legislature	**General Assembly of the Danube–Kris–Mureș–Tisza Regional Cooperation**					
8. Administrative division	**2 Hungarian counties (Bács-Kiskun County, Csongrád County), 3 Romanian counties (Arad County, Caras-Severin County, Timis County) and the Autonomous Province of Vojvodina**					
9. Governmental typology	Bundesland	Devolved government	Parliamentary republic	**Transnational region**	Voivodeship	Län
10. Regional functions 2 – highly represented; 1 – represented; 0 – lack)	Agriculture	Forestry	Tourism and recreation	Settlement (Built up)	**Industry**	Other (administrative, education, etc.)
	2	1	1	1	2	1

A. Population			
1. Inhabitants	2. Population density	3. Population growth rate, 1990-2010 (increase/decrease/stable)	4. Population aged 15-59 (women), 15-64 (men) economically active (%)[1,2]
4 332 341 (2011)	**73.2 km^2 (2011)**	**Decrease (4,567,795 – 1991)**	**60.7% - 2011930 (2011)**
5. Crude rate of natural change of population per 1000 inhabitants	6. Fertility rate[2]	7. Life expectancy (years)[2,3]	8. Demographic dependency ratio (%)
-4.69 (2011)	**1.25 (2011)**	**73.91 (2011)**	**43.1 (2011)**
9. Ethnic structure (qualitative and if	**The Danube-Kris-Mureș-Tisa Euroregion is historically a multi-ethnic region, home to several larger**		

possible quantitative characteristics). Description of ethnic conflicts registered	**or smaller ethnic groups.** **Ethnic structure (ethnic groups over 1%):** **Hungarian part (Bács-Kiskun County, Csongrád County): Hungarians (85,5%), Roma (1,7%), Germans (1,2%)[A]** **Romanian part (Arad County, Caras-Severin County, Timis County): Romanians (85,8%), Hungarians (5,7%), Roma (2,9%), Germans (1,1%)[B]** **Autonomous Province of Vojvodina: Serbs (66,8%), Hungarians (13%), Slovaks (2,6%), Croatians (2,4%), Roma (2,2%), Romanian (1,3%), Montenegrian (1,1%)[C]** **According to the estimates, the number of Roma people is probably significantly higher than the numbers appearing in the censuses of the three countries.** **In the Autonomous Province of Vojvodina, besides Serbian, five of the minority languages (Hungarian, Slovak, Croatian, Romanian, Rusyn) recognized as official languages, and can be used in the provincial government and in selected municipality governments.** **Ethnic conflicts:** **In Vojvodina, there were multiple atrocities (assaults) between the Serb majority and the Hungarian minority.** **There are tensions between the majority population and the Roma minority in all three countries. The now-banned Hungarian Guard held demonstrations in a number of settlements (e. g. Apátfalva, Csongrád, Kiskunhalas) in Bács-Kiskun County and Csongrád County, protesting against the "Roma crimes". In Jabuka, Vojvodina, violent protests against the Roma broke out after the murder of a Serbian teenager by a Romani resident. The gendarmerie only reacted in the fifth day of the protest. In Timisoara, Romania, authorities forcefully evicted thirty-nine informally residing Roma people.** **Despite this unfortunate events, ethnic conflicts are not common in the DKMT Euroregion.** A: Data obtained from the results of the 2011 census. The census accepted double identity (participants could choose more than one ethnic group). Also, questions about ethnicity were not mandatory (did not want to answer/no answer: 13,4%). B: Data obtained from the provisional results of the 2011 census. Ethnic group not specified: 1%. C: Data obtained from the results of the 2011 census. Ethnic group did not declared or unknown: 5%.

B. Economy				
1. Regional GDP per capita (Euro)[4]	2. Regional GDP per capita in % of the EU27 average[4]	3. Expenditure for R&D activity as part of national GDP (%)[2,3,4]	4. Employed in ICT sector (%)	5. Unemployment rate (%)
5508 (2010)	**22.5 (2010)**	**0.55 (2010)**	**1.43 (2012)**	**11.20 (2009)**

6. Economic sectors (structure of employment)	Primary (%)	Secondary (%)	Tertiary (%)
	18.73 (2010)	**33.61 (2010)**	**47.66 (2010)**

C. Education				
1/A. Population aged 25-64 (2011)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)	
Southern Great Plain (Hungary)	**20.1**	**62.6**	**17.3**	
Vest (Romania)	**21.2**	**63.9**	**14.9**	
1/B. Population aged 15 and over (2011)	Less than lower secondary (%)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)
Vojvodina (Serbia)	**13.0**	**21.8**	**50.9**	**14.08**
2. Students in tertiary education as % of the population aged 20-24 years at regional level[2,3,5]	**56,7 (2011)**			

D. Infrastructure and accessibility		
1. Urbanization rate	2. Level of information society development (very low/low/medium-low, medium-high, high, very high)	3. Number of bed-places per 1000 inhabitants
61.7% (2011)	**Low**	15.34 (2010)
4. Motorway network density (high, moderate, low, lack)	Condition and maintenance of local roads (very good, good, satisfactory, poor)	Number of civil airports
low	**Poor**	**2 (airline service)**

E. Environment					
1. Climatic zone	Maritime	**Central European**	**Continental**	Mediterranean	Mountainous
2. Generation of municipal	3. NATURA 2000	4. Risk of natural hazards occurring			

waste, (kg per capita) [2,3,5]		(very low/low/medium-low, medium-high, high, very high)
460 (2008)	**Present**	**Medium-high**

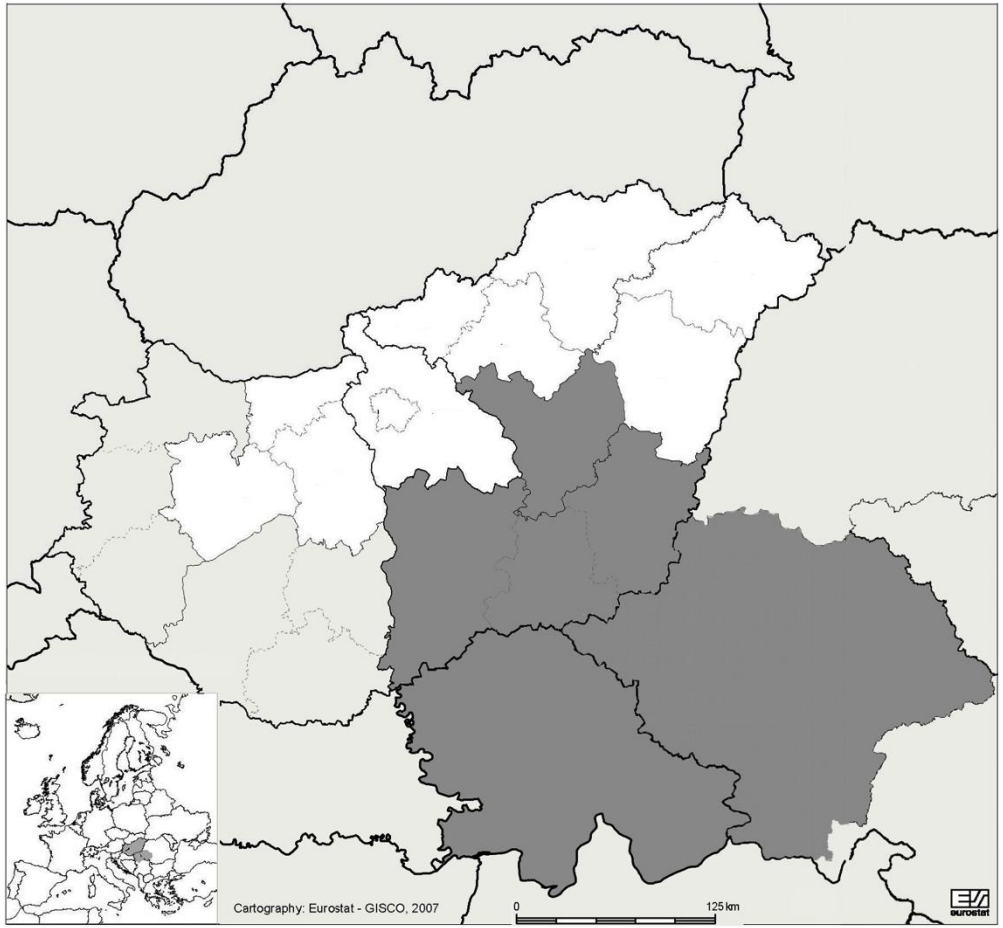
5. Typical natural hazard(s) occurring			
floods	**storms and hurricanes**	earthquake	**dry weather**

F. Land use			
Arable land (%) Cropland	Artificial	Woodland (%)	Other (%)
54.7 (2000)	**No available data**	**18.2 (2000)**	**No available data**

Sources: *Eurostat; http://eu22.eu ; Statistical Office of the Republic of Serbia; Population census 2011, Serbia; Statistical Yearbook of the Republic of Serbia, 2012; Labor Force Survey 2009, Serbia; Labor Force Survey 2010, Serbia; Labor Force Survey 2011, Serbia; Vital events in the Republic of Serbia, 2011; Population census 2011, Hungary; Population census 2011, Romania (provisional results); Statistical yearbook 2011, Romania; A strategy for the Danube–Kris–Mureș–Tisza Euroregion; The DKMT-Euroregion: An instrument for cross border regional development.*

Footnotes:

1. Data refers to the population aged 15-64 for both gender
2. In case of Romania, data refers to the Vest (NUTS-2) region, which consists of Arad, Timis, Caras-Severin and Hunedoara counties
3. In case of Hungary, data refers to the Southern Great Plain (NUTS-2) region, which consists of Bács-Kiskun, Csongrád and Békés counties
4. In case of Vojvodina, the GDP given in RSD converted to EUR according to the annual average exchange rate
5. Excluding Vojvodina



Map 2.1 Localisation of the DANUBE-KRIS-MUREŞ-TISZA EUROREGION.
Source: own elaboration based on *Regions in the European Union . Nomenclature of territorial units for statistics*, 2007, European Communities

2.2. Scotland

ESPON DeTec Regional Profile						
General characteristics						
11. Name of the region	**SCOTLAND**					
12. Surface area (km^2)	**78 856 km^2**					
13. Location in Europe	**North**	**West**	East	South		
14. EU Member categories	**Old**		New			
15. ESPON Territorial typology	**Sparsely populated**	Metropolitan	Regions in industrial transition	**Island regions**		
	Coastal regions	Outermost regions	**Urban-rural**	**Mountainous regions**	Border regions	
16. Previous ESPON project(s) investigating the region	**PURR**					
17. Legislature	**Part of the UK**					
18. Administrative division	**Divided into 32 council areas with the capital city of Edinburgh**					
19. Governmental typology	Bundesland	**Devolved government**	Parliamentary republic	Transnational region	Voivodeship	Län
20. Regional functions 2 – highly represented; 1 – represented; 0 – lack)	Agriculture	Forestry	**Tourism and recreation**	Settlement (Built up)	**Industry**	**Other (administrative, education, etc.)**
	1	1	2	1	2	2

G. Population			
10. Inhabitants	11. Population density	12. Population growth rate, 1990-2010 (increase/decrease/stable)	13. Population aged 16-59/64 economically active (%)
5,268,247 (2012)	**67 per km^2**	**Stable (5,083,000 – 1991 census)**	**66% (2011)**
14. Crude rate of natural change of population per 1000 inhabitants	15. Fertility rate	16. Life expectancy (years)	17. Demographic dependency ratio (%)
11.3 (2010)	**1.75 (2010)**	**75.8 for man, 80.3 for woman, (2009)**	**60.0 (2009)**
18. Ethnic structure (qualitative and if possible quantitative characteristics).	**According to the National Census (2001), the size of the minority ethnic population was just over 100,000 in 2001 (2% of the total population of Scotland). Pakistanis were the largest minority ethnic**		

Description of ethnic conflicts registered	**group, followed by Chinese, Indians and those of Mixed ethnic backgrounds. Over 70% of the total ethnic minority population were Asian: Indian, Pakistani, Bangladeshi, Chinese or other South Asian. The size of the minority ethnic population has increased since the 1991 Census. Whilst the total population increase between 1991 and 2001 was 1.3%, the minority ethnic population increased by 62.3%.**

H. Economy				
7. Regional GDP per capita (Euro)	8. Regional GDP per capita in % of the EU27 average	9. Expenditure for R&D activity as part of national GDP (%)	10. Employed in ICT sector (%)	11. Unemployment rate (%)
26,500 (2010)	**108 (2010)**	**1.66 (2009)**	**2.95 (2012)**	**7.9% (2012)**

12. Economic sectors (structure of employment)	Primary (%)	Secondary (%)	Tertiary (%)
	1.8	**19.3**	**78.9**

I. Education			
1. Population aged 25-64 (2012)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)
	20.9	**36.6**	**42.5**
2. Students in tertiary education as % of the population aged 20-24 years at regional level	**48.7**		

J. Infrastructure and accessibility		
5. Urbanization rate	6. Level of information society development (very low/low/medium-low, medium-high, high, very high)	7. Number of bed-places per 1000 inhabitants
81% (2012)	**High (83% of households with access to Internet, 2011)**	42.31 (2010)
8. Motorway network density (high, moderate, low, lack)	Condition and maintenance of local roads (very good, good, satisfactory, poor)	Number of civil airports
Low (5.2 km of Motorway per thousand square kilometres)	**good**	**4 main airports and many regional airports**

K. Environment					
6. Climatic zone	**Maritime**	Central European	Continental	Mediterranean	Mountainous

7. Generation of municipal waste, (kg per capita)	8. NATURA 2000	9. Risk of natural hazards occurring (very low/low/medium-low, medium-high, high, very high)
3197,29 thousands of tones (600 kg per capita)	393 sites (2012)	**low**

10. Typical natural hazard(s) occurring			
floods	**storms and hurricanes**	earthquake	dry weather

L. Land use			
Arable land (%) Cropland	Artificial	Woodland (%)	Other (%)
7.91	**2.4**	**18.7**	**71.1**

Sources: *Eurostat, Scotland's Population 2010 and other statistics (http://www.scotland.gov.uk)*

2.3 Malta

ESPON DeTec Regional Profile						
General characteristics						
21. Name of the region	**REPUBLIC OF MALTA**					
22. Surface area (km^2)	**316 km^2**					
23. Location in Europe	North	West	East	**South**		
24. EU Member categories	Old		**New**			
25. ESPON Territorial typology	Sparsely populated	Metropolitan	Regions in industrial transition	**Island regions**		
	Coastal regions	**Outermost regions**	Urban-rural	Mountainous regions	Border regions	
26. Previous ESPON project(s) investigating the region	**EUROISLAND, TEDI**					
27. Legislature	**House of Representatives**					
28. Administrative division	**3 Regions - Gozo, Malta Majjistral and Malta Xlokk, 6 districts (5 on the main island), 68 local councils (54 in Malta and 14 in Gozo)**					
29. Governmental typology	Bundesland	Devolved government	**Parliamentary republic**	Transnational region	Voivodeship	Län
30. Regional functions 2 – highly represented; 1 – represented; 0 – lack)	Agriculture	Forestry	**Tourism and recreation**	Settlement (Built up)	**Industry**	Other (administrative, education, etc.)
	1	0	2	1	2	1

M. Population			
19. Inhabitants	20. Population density	21. Population growth rate, 1990-2010 (increase/decrease/stable)	22. Population aged 15-59 (women), 15-64 (men) economically active (%)[1]
416 700 (2011)	**1318.679 per km^2**	**Increase**	**63.1 (2012)**
23. Crude rate of natural change of population per 1000 inhabitants	24. Fertility rate	25. Life expectancy (years)	26. Demographic dependency ratio (%)
2.4 (2011)	**1.49 (2011)**	**80.9 (2011)**	**45.4 (2012)**
27. Ethnic structure (qualitative and if	**95.3% Maltese, 1.6% British, 3.1% others**		

possible quantitative characteristics). Description of ethnic conflicts registered	

N. Economy				
13. Regional GDP per capita (Euro)	14. Regional GDP per capita in % of the EU27 average	15. Expenditure for R&D activity as part of national GDP (%)	16. Employed in ICT sector (%)	17. Unemployment rate (%)
15 200 (2010)	**62 (2010)**	**0.67 (2010)**	**4.40 (2012)**	**6.1 (2012)**

18. Economic sectors (structure of employment)	Primary (%)	Secondary (%)	Tertiary (%)
	1.5 (2011)	**24.7 (2011)**	**73.9 (2011)**

O. Education			
2. Population aged 25-64 (2012)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)
	61.9	**21.9**	**16.2**
2. Students in tertiary education as % of the population aged 20-24 years at regional level	**35.9 (2010)**		

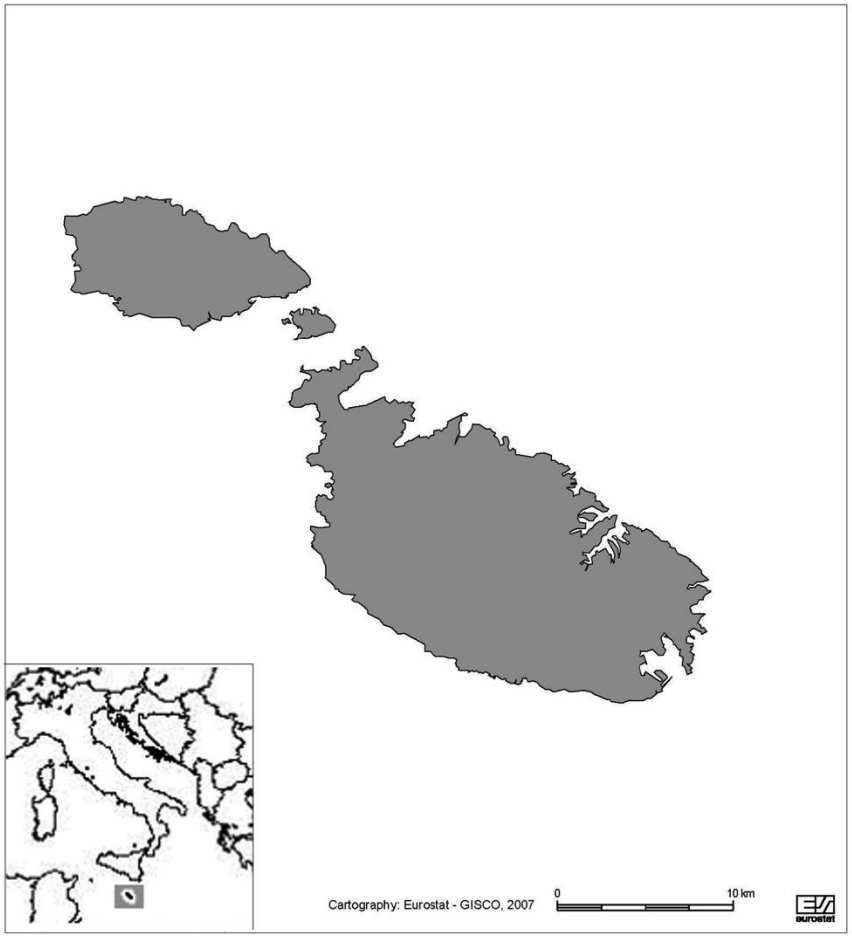
P. Infrastructure and accessibility		
9. Urbanization rate	10. Level of information society development (very low/low/medium-low, medium-high, high, very high)	11. Number of bed-places per 1000 inhabitants
95% (2011)	**Medium-high**	97.00 (2010)
12. Motorway network density (high, moderate, low, lack)	Condition and maintenance of local roads (very good, good, satisfactory, poor)	Number of civil airports
Lack	**Poor**	**1 (airline service)**

Q. Environment					
11. Climatic zone	**Maritime**	Central European	Continental	Mediterranean	Mountainous
12. Generation of municipal waste, (kg per capita)	13. NATURA 2000	14. Risk of natural hazards occurring (very low/low/medium-low, medium-high, high, very high)			
6488 (2009)	**present**	**low**			

15. Typical natural hazard(s) occurring			
floods	storms and hurricanes	earthquake	dry weather

R. Land use			
Arable land (%) Cropland	Artificial	Woodland (%)	Other (%)
28.12 (2011)	**29.7 (2006)**	**0.7 (2006)**	**41.48 (2006)**

Sources: *Eurostat, https://www.cia.gov; www.eea.europa.eu; The Global Competitiveness Report 2011-2012.*
Footnotes:
1. Data refers to the population aged 15-64 for both gender



Map 2.3. Localisation of Malta in Europe.
Source: own elaboration based on *Regions in the European Union . Nomenclature of territorial units for statistics*, 2007, European Communities

2.4 Podlasie

ESPON DeTec Regional Profile						
General characteristics						
31. Name of the region	**PODLASIE, PODLASKIE VOIVODESHIP**					
32. Surface area (km^2)	**20 187 km^2**					
33. Location in Europe	North	West	**East**	South		
34. EU Member categories	Old		**New**			
35. ESPON Territorial typology	Sparsely populated	Metropolitan	Regions in industrial transition	Island regions		
	Coastal regions	**Outermost regions**	**Urban-rural**	Mountainous regions	**Border regions**	
36. Previous ESPON project(s) investigating the region	**SURE**					
37. Legislature	**Podlaskie Regional Assembly - the regional legislature of the Podlaskie Voivodeship**					
38. Administrative division	**3 assigned cities (Białystok, Suwałki, Łomża) 14 districts, 118 municipalities**					
39. Governmental typology	Bundesland	Devolved government	Parliamentary republic	Transnational region	**Voivodeship**	Län
40. Regional functions 2 – highly represented; 1 – represented; 0 – lack)	**Agriculture**	**Forestry**	Tourism and recreation	Settlement (Built up)	Industry	Other (administrative, education, etc.)
	2	2	1	1	1	1

S. Population			
28. Inhabitants	29. Population density	30. Population growth rate, 1990-2010 (increase/decrease/stable)	31. Population aged 15-59 (women), 15-64 (men) economically active (%)
1 200 982 (2012)	**59.49 per km^2**	**Decrease**	**67.09 (2012)**
32. Crude rate of natural change of population per 1000 inhabitants	33. Fertility rate	34. Life expectancy (years)	35. Demographic dependency ratio (%)
-0.4 (2011)	**1.23 (2011)**	**77.8 (2011)**	**57.0 (2012)**
36. Ethnic structure (qualitative and if possible quantitative characteristics). Description of ethnic conflicts registered	Region with highest ethnical diversity in Poland, the largest minority being the Belarussians (4%), Lithuanians (0.5%) as well as the Tatars, Russians, Ukrainians, Romani and Jews. Region with the greatest share of the Orthodox Church followers in Poland (approximately 300 000).		

T. Economy				
19. Regional GDP per capita (Euro)	20. Regional GDP per capita in % of the EU27 average	21. Expenditure for R&D activity as part of national GDP (%)	22. Employed in ICT sector (%)	23. Unemployment rate (%)
6700 (2010)	**45 (2010)**	**0.32 (2010)**	**1.24 (2012)**	**14.10 (2012)**

24. Economic sectors (structure of employment)	Primary (%)	Secondary (%)	Tertiary (%)
	31.4 (2011)	**38.7 (2011)**	**29.9 (2011)**

U. Education			
3. Population aged 25-64 (2012)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)
	13.4	**61.9**	**24.7**
2. Students in tertiary education as % of the population aged 20-24 years at regional level	**62.0 (2011)**		

V. Infrastructure and accessibility		
13. Urbanization rate	14. Level of information society development (very low/low/medium-low, medium-high, high, very high)	15. Number of bed-places per 1000 inhabitants
60.32% (2011)	**Very low**	9,59 (2010)
16. Motorway network density (high, moderate, low, lack)	Condition and maintenance of local roads (very good, good, satisfactory, poor)	Number of civil airports
Lack	**Satisfactory**	**0**

W. Environment					
16. Climatic zone	Maritime	**Central European**	Continental	Mediterranean	Mountainous
17. Generation of municipal waste, (kg per capita)	18. NATURA 2000	19. Risk of natural hazards occurring (very low/low/medium-low, medium-high, high, very high)			
210 (2011)	**Present**	**Medium-low**			
20. Typical natural hazard(s) occurring					

floods	**storms and hurricanes**	earthquake	dry weather

X. Land use			
Arable land (%) Cropland	Artificial	Woodland (%)	Other (%)
27.9 (2009)	**2.9 (2009)**	**35.6 (2009)**	**33.6 (2009)**

Sources: *Eurostat, Statistical Yearbook Podlaskie Voivodeship 2012.*

Map 2.4 Localisation of Podlasie in Europe and Poland.
Source: own elaboration based on *Regions in the European Union . Nomenclature of territorial units for statistics*, 2007, European Communities

2.5 Skåne

ESPON DeTec Regional Profile						
General characteristics						
41. Name of the region	**Region Skåne**					
42. Surface area (km^2)	**11 027 km^2**					
43. Location in Europe	**North**	West	East	South		
44. EU Member categories	**Old**		New			
45. ESPON Territorial typology	Sparsely populated	**Metropolitan**	Regions in industrial transition	Island regions		
	Coastal regions	Outermost regions	**Urban-rural**	Mountainous regions	Border regions	
46. Previous ESPON project(s) investigating the region	**ULYSSES**					
47. Legislature	**Parliament (Riksdag)**					
48. Administrative division	**Sweden: 21 län, 289 kommuner, församlingar Scania is 1 from 21 län.**					
49. Governmental typology	Bundesland	Devolved government	Parliamentary republic	Transnational region	Voivodeship	**Län**
50. Regional functions 2 – highly represented; 1 – represented; 0 – lack)	**Agriculture**	**Forestry**	Tourism and recreation	Settlement (Built up)	Industry	Other (administrative, education, etc.)
	2	2	1	1	1	1

Y. Population			
37. Inhabitants	38. Population density	39. Population growth rate, 1990-2010 (increase/decrease/stable)	40. Population aged 15-59 (women), 15-64 (men) economically active (%)
1,237,200	**112.1 per km^2**	**Increase**	**64,5% (2012)**
41. Crude rate of natural change of population per 1000 inhabitants	42. Fertility rate	43. Life expectancy (years)	44. Demographic dependency ratio (%)
3.1 (2011)	**1.89 (2011, NUTS2 – Sydsverige)**	**82.1 (2011, NUTS2 –Sydsverige)**	**77,69 (2012, NUTS2 –Sydsverige)**

45. Ethnic structure (qualitative and if possible quantitative characteristics). Description of ethnic conflicts registered	**Finland – 164,867 people, Iraq – 127,860, Poland – 75,323.**

Z. Economy				
25. Regional GDP per capita (Euro)	26. Regional GDP per capita in % of the EU27 average	27. Expenditure for R&D activity as part of national GDP (%)	28. Employed in ICT sector (%)	29. Unemployment rate (%)
32,500 (2011)	**133**	**4.65 (2009, NUTS2 – Sydsverige)**	**4.29 (2012, NUTS2 – Sydsverige)**	**8.5 (2012, NUTS2 – Sydsverige)**

30. Economic sectors (structure of employment)	Primary (%)	Secondary (%)	Tertiary (%)
	2.2	**18.6**	**79.2**

AA. Education			
4. Population aged 25-64 (2012)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)
	19	**44.4**	**36.6**
2. Students in tertiary education as % of the population aged 20-24 years at regional level	**76.6**		

BB. Infrastructure and accessibility		
17. Urbanization rate	18. Level of information society development (very low/low/medium-low, medium-high, high, very high)	19. Number of bed-places per 1000 inhabitants
78% (?)	**Very-high**	51,06 (2010)
20. Motorway network density (high, moderate, low, lack)	Condition and maintenance of local roads (very good, good, satisfactory, poor)	Number of civil airports
moderate	**Very good**	**3**

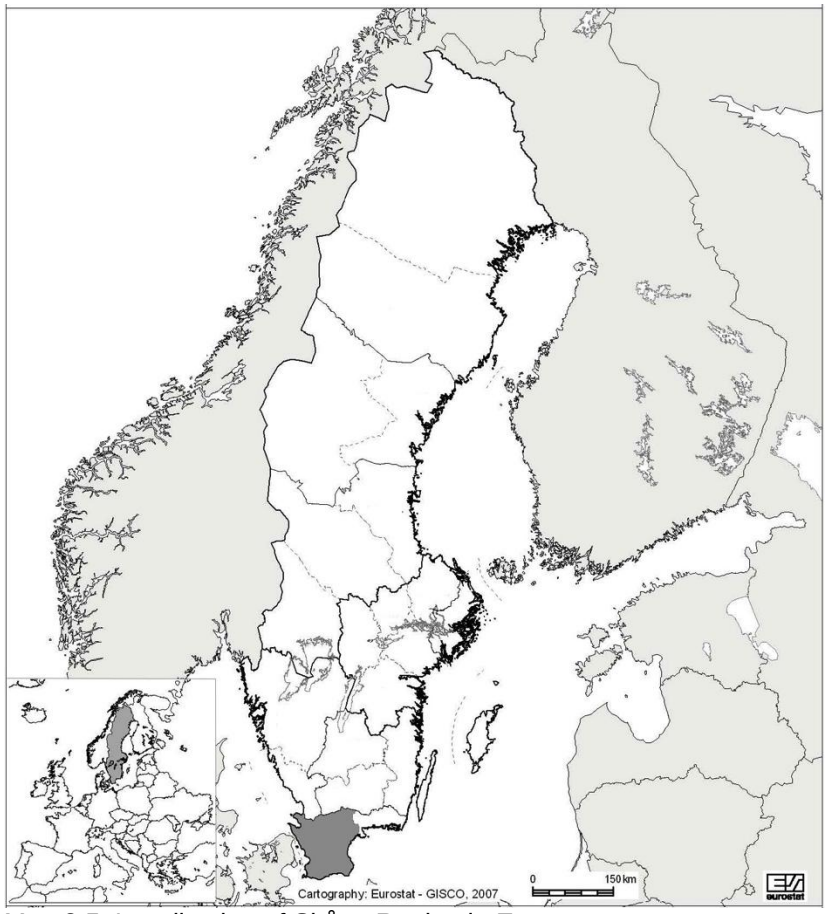
CC. Environment					
21. Climatic zone	**Maritime**	Central European	Continental	Mediterranean	Mountainous
	22. NATURA 2000	23. Risk of natural hazards occurring (very low/low/medium-low, medium-high, high, very high)			

	5% of Skåne	**low**

24. Typical natural hazard(s) occurring			
floods	**storms and hurricanes**	earthquake	dry weather

DD. Land use			
Arable land (%) Cropland	Artificial	Woodland (%)	Other (%)
26.6	**4.3**	**45.2**	**23.9**

Sources: *Eurostat, Statistic Sweden (http://www.scb.se/)*



Map 2.5. Localisation of Skåne Region in Europe
Source: own elaboration based on *Regions in the European Union . Nomenclature of territorial units for statistics*, 2007, European Communities

2.6 Styria

ESPON DeTec Regional Profile						
General characteristics						
51. Name of the region	**STYRIA (*Steiermark)***					
52. Surface area (km^2)	**16 392 km^2**					
53. Location in Europe	North	West	**East**	**South**		
54. EU Member categories	**Old**		New			
55. ESPON Territorial typology	**Sparsely populated**	Metropolitan	Regions in industrial transition	Island regions		
	Coastal regions	Outermost regions	**Urban-rural**	**Mountainous regions**	**Border regions**	
56. Previous ESPON project(s) investigating the region	**Lack of the projects**					
57. Legislature	**State or *Bundesland* (Das Land Steiermark)**					
58. Administrative division	**The state is divided into 12 districts (*Bezirke*), and a statutory city - Graz**					
59. Governmental typology	**Bundesland**	Devolved government	Parliamentary republic	Transnational region	Voivodeship	Län
60. Regional functions 2 – highly represented; 1 – represented; 0 – lack)	Agriculture	Forestry	**Tourism and recreation**	Settlement (Built up)	**Industry**	**Other (administrative, education, etc.)**
	1	1	2	1	2	2

EE. Population			
46. Inhabitants	47. Population density	48. Population growth rate, 1990-2010 (increase/decrease/stable)	49. Population aged 15-59 (women), 15-64 (men) economically active (%)
1.213.255 (2012)	**74 per km^2**	**Increase (1,184,720 – 1991 census)**	**64.6% - (2011)**
50. Crude rate of natural change of population per 1000 inhabitants	51. Fertility rate	52. Life expectancy (years)	53. Demographic dependency ratio (%)
-1.22 (2011)	**1.33 (2011)**	**81.4 (2011)**	47.92
54. Ethnic structure (qualitative and if possible quantitative characteristics).	**Region with low ethnical diversity, the largest minority being the Slovenes (2.192 in 2001). According to *Legal Indicators for Social Inclusion of New Minorities Generated by Immigration,***		

Description of ethnic conflicts registered	***Regional Report Styria* (2001) in the region lived 28.825 Bosnians, 5.203 Turks, and 27.583 citizens of other countries which constitute around 5% Styria population.**

FF. Economy				
31. Regional GDP per capita (Euro)	32. Regional GDP per capita in % of the EU27 average	33. Expenditure for R&D activity as part of national GDP (%)	34. Employed in ICT sector (%)	35. Unemployment rate (%)
27000 (2010)	**110 (2010)**	**3.61 (2005-2010)**	**1.40 (2012)**	**5.7% (2011)**

36. Economic sectors (structure of employment)	Primary (%)	Secondary (%)	Tertiary (%)
	7,7	**29,1**	**63,2**

GG. Education			
5. Population aged 25-64 (2012)	Lower secondary (%)	Upper secondary (%)	Tertiary (%)
	14.5	**67.6**	**17.9**
2. Students in tertiary education as % of the population aged 20-24 years at regional level	**71.2**		

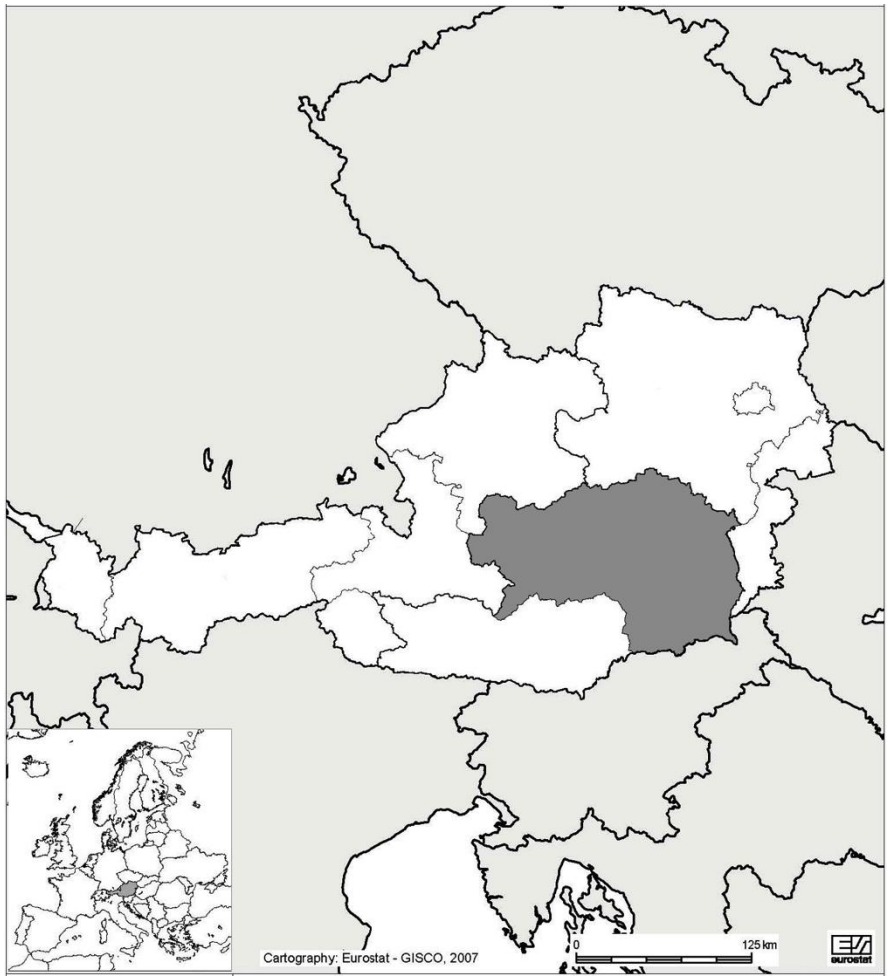
HH. Infrastructure and accessibility		
21. Urbanization rate	22. Level of information society development (very low/low/medium-low, medium-high, high, very high)	23. Number of bed-places per 1000 inhabitants
35% (2011)	**Medium-high**	78,76 (2010)
24. Motorway network density (high, moderate, low, lack)	Condition and maintenance of local roads (very good, good, satisfactory, poor)	Number of civil airports
high	**Very good**	**1 (airline service), 16 (active small airports)**

II. Environment					
25. Climatic zone	Maritime	**Central European**	Continental	Mediterranean	**Mountainous**
26. Generation of municipal waste, (kg per capita)	27. NATURA 2000	28. Risk of natural hazards occurring (very low/low/medium-low, medium-high, high, very high)			
		low			

29. Typical natural hazard(s) occurring			
floods	storms and hurricanes	earthquake	dry weather

JJ. Land use			
Arable land (%) Cropland	Artificial	Woodland (%)	Other (%)
12.1	**4.9**	**58.9**	**24.1**

Sources: *Eurostat, Statistic Austria (www.statistik.at)*



Map 2.6.1 Localisation of Styria (Steiermark) in Europe and Austria.
Source: own elaboration based on *Regions in the European Union . Nomenclature of territorial units for statistics*, 2007, European Communities

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