

ULYSSES

Using applied research results from ESPON as a
yardstick for cross-border spatial development
planning

Targeted Analysis 2013/2/10

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A. Executive Summary

1. ULYSSES project in brief

ULYSSES is an experimental and innovative project supported by 18 European border and cross-border areas (hereafter CBA) that aims at using applied research results from ESPON as a yardstick for decentralised cross-border spatial development concepts. Within this overall framework, a targeted analysis including high-quality, comprehensive and **multi-thematic cross-border territorial analyses** (hereafter MTA), has been performed on six specific CBA across Europe:

- The Upper Rhine Trinational Metropolitan Region CBA along the land borders between France, Germany and Switzerland.
- The CBA along the entire Spanish-French land border (Pyrenees).
- The CBA along the land border between Greece and Bulgaria.
- A CBA covering parts of the Northern Finland-Russian land border (Euregio Karelia).
- A CBA (Euroregion Pomerania) along the borders between Poland, Germany (land border) and Sweden (maritime border).
- Extremadura-Alentejo CBA (ES/PT).

Additionally, seven “**data fact sheets**” (hereafter DFS) focused on following CBA:

- EUREGIO (EUREGIO)
- Öresundskomiteen (The Öresund Committee)
- Duna-Körös-Maros-Tisza Euroregion (Danube-Kris-Mures-Tisa Euroregion)
- EuRegio Salzburg-Berchtesgadener Land-Traunstein
- Regione Autonoma Friuli Venezia Giulia (Autonomous Region of Friuli Venezia Giulia)
- VšĮ Nemuno euroregiono Marijampolės biuras (PI Nemunas Euroregion Marijampole Bureau)
- Ems Dollart Region

All the abovementioned **territorial analyses** focused on the main topics mentioned by Territorial Agenda of the European Union (EC 2007; EC 2011b), namely (i) cross-border polycentric development, (ii) patterns of urban/rural relationship, (iii) levels of accessibility and connectivity, (iv) effects of demographic change (*territorial profile*), and (v-vi) level of attainment of Lisbon/Europe 2020 and Gothenburg objectives by the CBA (*territorial performance*). In parallel, an **in-depth statistical analysis** focused on the six MTA areas was performed as well. This analysis included (i) a catching-up analysis; (ii) a principal components analysis, and; (iii) a multiple regression analysis. Upon specific request by the stakeholders participating in the project, these common statistical analyses were further enriched by studying local specificities through a more qualitative approach.

Additionally, a comprehensive **cross-border institutional performance analysis** has been included as well in every MTA. This analysis captured the diversity of governance frameworks existing within each CBA by paying regard to both the *structural dimension*, i.e. the overall framework that can hardly be influenced by the partners of cross-border cooperation, as well as the *activity dimension*, i.e. the intensity and continuity of institutionalised cross-border cooperation on the regional level.

All the above mentioned activities crystallised in a comprehensive diagnosis for each MTA area that was delivered as an annex to the Interim Report of ULYSSES. On that basis, an **integrated analysis** taking account of previous project inputs and ESPON territorial scenarios was performed at a later stage of the project. From a methodological perspective, this integrated analysis adopted the form of a two-phase SWOT analysis that included (i) a

status-analysis phase in which the findings derived from previous research tasks were organised and prioritised as main challenges and opportunities, and; (ii) an *action-decision phase* in which a response to each one of the challenges and opportunities identified in previous phase was proposed as a potential strategy.

Both the challenges and strategies were discussed and validated by stakeholders of the MTA areas. The underlying methodology, together with the SWOT analysis itself are seen as the main contribution that ULYSSES may do to the Practical Guide that the Association of European Border Regions (hereafter AEBR) will develop together with the stakeholders in the near future. All in all, the final results of ULYSSES project are fully aligned with the expectations set by the project specifications.

2. Key findings

Borders are almost synonymous with political, demographic and economic remoteness, the meeting place of different competences, structures, legal and social affairs and they also behave as functional and territorial discontinuities. Consequently, economic activities do not tend to concentrate close to the national borders and public institutions normally have a limited interest in investing in these areas. However, the growing integration of European regions should therefore lead to the development of many border regions that could exploit their formerly hindered potential, as well as to an increase in population and Gross Domestic Product (hereafter GDP) growth along the borders.

The territorial profile and performance analyses conducted in ULYSSES are interested in understating how the borders function in different contexts and the impacts of the general challenges they pose. From this perspective, there are some aspects that can be highlighted from the different MTA as well as from the factor and regression analysis that was performed at the EU27 countries:

- The first one is that the **differences in the CBA seem to be pretty much a consequence of their overall location and not so much of their border position**. This means that the central European CBA are performing at a similar level than other centrally located regions, while border regions in peripheral countries perform similarly as other peripheral regions.
- The second one is that **borders keep playing a major role in explaining the behaviour of the different regions**, but by dividing different national realities.
- The third one is that **the border condition seems to be more relevant at the regional than at the local level**. For example, while the position of the total CBA in the national or European context is clearly relevant, the settlement patterns at the LAU 1 or 2 levels seem often to be indifferent to the border.
- A fourth one is that the **cross border commuting levels between different regions still tend to be low**, when compared to the commuting between regions of the same country.
- The fifth is that the **borders seem to keep functioning as a limit for the diffusion effects of development poles**. This essentially indicates that, besides the European effort in promoting territorial cohesion, the national level maintains a prime role in regional development.

From a **governance perspective**, border regions are often called 'laboratories of Europe', and this label is also confirmed by the ULYSSES project: the 'contact zones' of different national systems reveal very clearly the added value and, at the same time, the challenges of European integration. The six regions under full analysis in ULYSSES confirm the diversity of borders and border regions in Europe also from the institutional point of view: The structural and the activity dimension have very different values, and the analysis such diverse conditions lead to some general conclusions:

- **The internal EU 15 borders are, from a structural point of view, still more favourable for cross-border governance** than, for example, external EU borders.
- At the same time, the structural dimension cannot be explained in a *deterministic* way, that is to say, **the degree of institutionalisation cannot be directly linked to any specific status or socio-economic arrangement.**
- **Socio-economic development alone does not determine cross-border governance**, neither.

Territorial diversity has to come along with different institutional settings, and the involved institutions have to face the respective challenges *on the ground*. Hence, following the principle of tailor-made strategies, **all regions have to develop their own ways in order to exploit their cross-border potential.**

What follows is an excerpt of the most relevant key findings specific to the six MTA and seven DFS outlined in more detail in Section B of this report:

2.1. Multi-thematic cross-border territorial analyses

Upper Rhine Trinational Metropolitan Region

The Upper Rhine Trinational Metropolitan Region is a peripheral and at the same time central region in Europe: it is peripheral as it is located in the northern part of Switzerland, eastern part of France and south-western part of Germany with the River Rhine as its natural border between these three countries. And it is at the same time centrally located within Europe, being part of the “Pentagon”. With this central position in Europe and the existence of a variety of small, medium and larger cities and conurbations, the CBA hosts a quite strong economy, administrative centres (e.g. the European Parliament), and research centres.

Despite low fertility rates, the CBA is slow but steadily growing by immigration. This indicates a strong labour market. Polycentricity is a core phenomenon in the area. The main Functional Urban Areas (hereafter FUA) are embedded in several neighbouring and surrounding networks of FUAs.

The economic situation of the rural areas concerning agriculture is in comparison to other European regions strong and has a relatively solid added value. However, the area used for agricultural use however is shrinking on an average level. Due to topographical circumstances, agglomeration takes place in the plain Rhine valley.

The Upper Rhine Valley is a very well connected CBA in the centre of Europe with excellent accessibility of worldwide destinations. Numerous road crossings of the River Rhine and the national borders make commuting to the neighbouring countries on a daily basis relatively easy. Weaknesses concerning intra-regional connectivity in public transportation hinder the effective cross-border usage of common infrastructure.

The CBA performs remarkably well with respect to Lisbon / Europe 2020 target indicators. Most of the NUTS 3 units of the CBA are above the national and EU averages in most indicators, remarkably in GDP per capita. Also unemployment rates are very low, especially in the Swiss and German NUTS 3 units of the CBA. These low unemployment rates as well as high GDP rates may be linked to a relative high share of high and medium tech enterprises in the CBA.

The reputation of the Upper Rhine Trinational Metropolitan Region as one of the pioneers of cross-border cooperation must not conceal that the structural dimension of the Upper Rhine Trinational Metropolitan Region does bear considerable challenges. The political situation has to take into account that three countries – one of them being a non-EU Member State – are involved, and being divided by one language barrier. Even though Switzerland is a country with several languages, the Swiss border region near Basel belongs to the German speaking part.

The ‘institutional thickness’ is witness of the long-standing cooperation and can be inspiration for younger cross-border cooperation but the overlapping institutions are sometimes seen as a challenge for political coordination and efficiency.

Through the introduction of the governance structure of the Upper Rhine Trinational Metropolitan Region the governance efforts were enhanced beyond the field of politics through the inclusion of the fields of economy, science and civil society into one integrated four column model. The aim is to support the convergence of the existing heterogeneous institutional arrangements into one effective governance structure under the lead of the Upper Rhine Trinational Metropolitan Region.

Working Community of the Pyrenees

The Working Community of the Pyrenees shows an overall positive population growth in the observed period, due to positive natural growth but also by means of migration. However, a closer look onto the evolution of net migration shows a steady decrease of net migration since 2005.

The distribution of the urban population in the area is centrifugal in respect to the Pyrenees mountain range. The urban system on the French side of the CBA is more polycentric than the Spanish one, essentially due to the absence of a clearly dominant FUA such as Barcelona. Focusing only on the confining NUTS 3 regions, the Spanish sector seems to be more polycentric than the French one. French FUAs have more service-oriented economy, while the Spanish FUAs seem to rely more on manufacturing and construction sectors.

From 1990 to 2006, most regions within the CBA lost agricultural surface. The economic trend observed in relation to the agricultural sector suggests a decreasing weight of primary activities in relation to the economy as a whole, both in terms of Gross Value Added (hereafter GVA) and employment.

The most urbanised areas are ranked highest both in multimodal and air accessibility. Accessibility by road clearly shows that the Spanish sector of the CBA is comparatively much more isolated from European core areas than French regions. Connectivity between Spain and France through the Central Pyrenees is quite a complex issue as there are only two high-capacity corridors on the East and West coasts. Broadband penetration and internet usage is above the European average in all NUTS 2 within the CBA.

Concerning the Europe 2020 strategy, the disparities on both sides of the border within the CBA in terms of GDP per capita indexed to the leading region, are weakened if attention is paid onto the confining NUTS 3 areas. Social cohesion indicators show certain but not very pronounced disparities across de CBA.

As far as Gothenburg goals are concerned, the CBA is above the EU average in soil sealed areas per inhabitant, below the EU average on ozone concentration exceedances, shows good capacity for urban waste water treatment and shows significant percentage of NATURA 2000 areas. It also shows good values in solar energy resources, and minor and middle sensitivity to climate change regarding physical, social, economic and cultural aspects.

The cross-border cooperation in the Pyrenees region is very much characterised by the presence of the mountainous barrier. The dominant languages do both belong to the Romantic languages, but still they make up a certain language barrier (which is being complemented by regional languages). With regard to territorial development and spatial planning, the two systems of France and Spain are quite different. From an institutional point of view, France has a much more centralised system, while Spain is much more focused on the Autonomous Communities. On the content side, France has traditionally focused on the comprehensive approach of *aménagement du territoire* whilst Spain is following to some extent a land use regulation approach without an excessive degree of regulation.

Greece-Bulgaria CBA

The Greece-Bulgaria CBA is considered as a region distanced from the central parts of Europe, facing population shrinkage, over ageing and low fertility rates. Population distribution shows strong disparities, with higher population densities near urban conglomerates. Excluding the Bulgarian capital, Sofia, whose demographic weight introduces bias to the analysis, population density almost halves, being at levels considerably lower than the national and EU27 average values.

Over the years, the demographic primacy of Sofia appears to increase, although the CBA exhibits a rather polycentric pattern in its population distribution as well as polycentric economic development. When excluding Sofia, the urban system appears even more polycentric, with Plovdiv excelling a limited primacy, gradually decreasing in time.

All in all, the border seems to attract population and economic activities along the well-established transportation axes, affecting population density and growth patterns in the cross-border area.

Despite the gradual increase in urbanism, mostly shown by the sharp decrease of population employed in the primary sector and the respective GVA produced, the CBA may still be characterised as a 'strongly rural area'. The exclusion of Sofia slightly reduces the urban character of the CBA.

The accessibility and connectivity infrastructure has improved in the CBA during the latest years, especially through the construction of motorways and the expansion of airports. However, more developments in the cross-border transportation infrastructure are needed to integrate the economy of the CBA and improve its performance, especially at the lower accessibility group consisting of Kavala, Drama and Xanthi together with Smolyan and Kardzhali NUTS3 areas.

Significant disparities exist in terms of the convergence dynamism of the CBA, as the Bulgarian part exhibit a steady catching-up behaviour, while the Greek areas are characterised by a slow converging pattern. Employment in the CBA seems distributed rather evenly among all economic activities, exhibiting a marginal annual rise over the last decade. This increase seems to be linked to the construction and the financial and real estate sectors. However, trade, tourism and transport are the main economic sectors supporting local CBA economy. The reduction of employment shares in the primary sectors is apparent over the period analysed. On the other hand, construction, public administration services and tourism increased their respective weights over the past decade.

Social cohesion indicators are generally higher than the corresponding mean EU27 values, and only infant mortality seems comparable to the EU27 standard. Mean unemployment rate appeared higher than the national Bulgarian value, but seems improved compared to the Greek corresponding rate. Long-term unemployment was comparable to the national rates of both countries, while youth unemployment was comparable to the EU27 and the national Bulgarian values. The Population at Risk of Poverty Index reached almost 20% in the CBA as a whole, with increased rates in Anatoliki Makedonia, Thraki and Yuzhen tsentralen. Overall, all social cohesion indicators gradually improved during the 1997-2008 period, but thereafter and due to the global financial crisis, all indicators degraded sharply, returning back to the 1997 levels.

Euregio Karelia

Euroregio Karelia is a cross-border area whose territorial features are highly conditioned by being located on an external border (EU/Russia).

Population change has been negative in Euregio Karelia during the first decade of the 2000s. Euregio Karelia has also suffered of a decline in migration rates. Population decline has, however, been less severe in the second half of 2010, and total fertility rate has shown a gradual improvement. Demographic performance has varied widely between the regions of Euregio Karelia and the only region with a positive total population change, natural change and net migration has been Northern Ostrobothnia that is to most parts located on the western border of Finland. Finnish regions of Euregio Karelia located in the proximity of the Finnish-Russian border have been attracting migrants from Russia.

Euregio Karelia has a polycentric urban structure that is not dominated by one big city. The CBA has a small amount of FUAs and a small share of FUA inhabitants. FUAs of the CBA have been attracting population more than rural regions and population has been increasing in all the FUAs (except for Kajaani). In almost all the FUAs dominating economic activity was traditional manufacturing. There are great differences in GDP between the FUAs, and the largest differences are observed between the Finnish and the Russian FUAs.

Euregio Karelia is in the European context classified as a CBA with low urban influence and low human intervention. The share of agricultural areas in Euregio Karelia is significantly lower than the European average. This is explained by the large share of forests in the total area. There has been an increase in GVA by agriculture and fishing, but the share of those fields of economy in total GVA has been decreasing. Accordingly there has been a decline in the share of employment in the field in general employment statistics. This tendency has been less severe in border regions.

Euregio Karelia is located far from central European road and rail infrastructure and thus has low accessibility. Air connections make the CBA better accessible to the European countries. Multimodal accessibility (by road, rail and air) of Euregio Karelia has been declining. Considering connectivity within the CBA, cross-border traffic has been steadily increasing. Finnish regions of the CBA have a high "virtual" connectivity and the share of households with internet connection has been increasing also in the Russian part of Euregio Karelia.

All the Finnish regions of Euregio Karelia (except for Northern Ostrobothnia) have been in economic terms identified as less developed non converging regions. There are also large differences in GDP per capita between the Finnish and Russian regions. The Finnish-Russian border has had positive effects on trade in the cities located in close proximity of the border. There is a strong variance between regions of Euregio Karelia concerning performance in research and innovation and social cohesion, Eastern Finland and the Republic of Karelia performing the weakest.

Environmental issues pose a great challenge for the CBA. Low waste water treatment capacity of the Republic of Karelia affects the whole CBA. When compared to other European countries, there is a low share of Natura 2000 areas in the CBA. Wind energy potential, on the contrary, is above the European average in all the regions of the CBA, and sensitivity to climate change is low.

As it has been already said, Euregio Karelia is located on the EU external border, which creates a relatively difficult structural context for cross-border governance and institutionalized spatial planning. Cross-border cooperation does take place in Euregio Karelia in a multi-faceted and increasing way. Still, the difference to internal EU cooperation is very obvious and a spatial planning or a transport policy has not been institutionalized on a cross-border level yet.

Euregion Pomerania

Euroregion Pomerania is a cross-border area with a maritime and a land border. This geographic characteristic conditions the development of the area in many respects.

Demographic performance in Euroregion Pomerania has varied widely between the regions. Population change has been positive in regions close to large cities; Barnim (close to Berlin), Podregion Szczeciński (close to Szczecin) and Skåne län (around Malmö), but negative in all the other regions (2000-2009). None of the regions of Euroregion Pomerania has a total fertility rate above the replacement level, and old age dependency ratio of the CBA is above the European average. Low scale analyses show that the border attracts population in the Polish-German border area, and possibly also in Skåne län in Sweden.

Euroregion Pomerania has a polycentric urban structure, more polycentric than the urban structure of ESPON space when considering the amount of population of FUAs. However, the CBA is more monocentric when considering GDP. Malmö is the leading city in terms of GDP and differences to small German and Polish FUAs are large. Only 51.5 % of the CBA's total population lives in FUAs.

ESPON 1.1.2 typology classifies eight regions of Euroregion Pomerania as regions with low urban influence and low human intervention and five regions with high urban influence and high human intervention. In general agricultural areas occupy large areas of the CBA. However, total area of agricultural land, and production and employment by agriculture have been decreasing in all the regions of Euroregion Pomerania.

Accessibility varies widely in Euroregion Pomerania. German regions are easier to access by road than other regions of the CBA. Accessibility of the Polish regions by road is below the European average. Skåne län in Sweden has the highest accessibility by air. In general

accessibility of Euroregion Pomerania is below the European average. Internet accessibility has been increasing in all the regions.

Disparities in GDP per capita have been growing in Euroregion Pomerania between 1997 and 2008. Compared to the leading European region in economic development in that period (London) most of the regions of Euroregion Pomerania are growing less and diverging from the leader. Polish regions have been classified as slow catching-up regions. The leading economic sector in the CBA in 2008 was public administration and community services. Total intramural R&D expenditure in Euroregion Pomerania was lower than EU average. Unemployment was well above the European average in 2010.

Euroregion Pomerania has a large share of Natura 2000 areas and environmental protection has been progressing in the CBA. Combined sensitivity to climate change was low compared to the European average. Wind energy potential is well above national and European averages.

The city of Szczecin is the only major city in the cross-border territory of north-west Poland and north-east Germany and therefore it plays an important role in cross-border regional development. According to the research results of ULYSSES, development patterns of the city of Szczecin do not limit themselves to the territory of the city, but reach across regional borders and the German border area.

Structural dimension of cross-border governance in Euroregion Pomerania is challenging. The CBA has a particular situation with a land border and a sea border that separate three national states with very different institutional settings and traditions. Cross-border cooperation is not only characterised by the trinational platform of the Euroregion of Pomerania, but also by further bi- and multi-lateral cooperation. In particular the Polish-German cooperation has been a prominent part of the Euroregion Pomerania activities, and a series of projects has been initiated.

Extremadura-Alentejo CBA

Portugal and, to a lesser extent, Spain are normally understood as part of the periphery of the European Union, in a geographical as well as a political and economic sense. The border between these two countries is, on its turn, a peripheral region in each of the countries, given that it is relatively far from capital cities as well as the more densely populated coasts. In the European context, the cross border region of the Alentejo-Extremadura can therefore be understood as a 'periphery of a periphery'. This peripheral location is a crucial element which shapes this regions' behaviour in many of the analysed dimensions.

Regarding demography, the main challenge of this region is its ageing population, which is stationary or very slowly growing. But the way in which the ageing challenge is felt in the CBA is by no means homogeneous. When looking at the natural population growth rates or the share of women in fertile age it becomes clear that there is a major divide not only between the different sides of the border, but also between the more and less densely populated municipalities in each side of the border. Even if the border itself does not have a very significant impact on population growth patterns.

Concerning its spatial layout, this CBA can be characterized as a predominantly rural region that has a network of mainly small sized urban centres spread over it. This network is complemented by a low amount of large urban areas that are evenly spaced throughout the territory and whose rank-size distribution in terms of population or GDP is not very hierarchical (although currently a growing share of the population is concentrating itself in the larger urban areas of the territory). A major trait of this territory is therefore a well preserved landscape with significant natural and semi-natural areas but also a high weight of the primary sector, as can be assessed by the large share of agricultural areas and of Gross Value Added and employment in that sector. A particularly important aspect, in this regard, is the dehesa/montado agro-silvo-pastoral system, which guarantees high levels of biodiversity and a sustainable use of resources, therefore playing a key role in combining economic and environmental concerns. This capacity is well reflected in the region's performance in the Gothenburg strategy related indicators, which show low ozone concentration, small soil sealed areas, minimum levels of pollutant emission and a high share of Natura 2000 areas.

In what regards accessibility and connectivity, this CBA's shows a relatively unfavourable position. In fact, the regions' potential accessibility by different means of transportation (train, plain or car) all show values well below the European or the national averages. And the lack of critical mass poses a major challenge for developing mobility patterns that do not depend on private means of transportation. This, together with the on-going demographic decline in many parts of the region, further accentuates the need to find intelligent ways of connecting the users with the services and goods they depend upon. On a broader scale, the (eventual) development of the high-speed railway could be a major asset for the region, as it would increase the connection between regional poles, increase the connection of these nodes with other regions and put the region in a strategic position, halfway between Lisbon and Madrid. This is especially relevant for the Elvas-Campo Maior-Badajoz triangle.

Regarding the Lisbon/Europe 2020 strategy objectives, the region is clearly struggling. This difficulty becomes evident when looking, for example, at the evolution of standard well-being indicators, which show a low GDP per capita, poor social cohesion, and a tendency for further diverging from the leading region in the GDP growth. The region's capacity to invest in research, development and innovation and to get outputs from this investment (e.g. patent applications) is also very limited.

In general terms the cross-border cooperation in this region is high. This is facilitated by structural aspects, such as similar languages and planning systems, but is also expressed by the high amount of joint initiatives activities that have been developed in the last decade (INTERREG, interregional cooperation programs, etc.). From a morphological point of view, the border does not represent a major barrier either.

2.2. Data fact sheets

DFS focused on seven CBA across Europe, which show very diverse situation concerning the indicators that have been analysed. Their profile and performance is greatly influenced by their overall location, in some cases overlapping with an external border of the EU (Duna-Koros-Maros-Tisza Euroregion and Euroregiono NEMUNAS Marijampoles biuras), which is somehow conditioning their territorial profiles. Entrance to the European Union and access to territorial cooperation programmes is another essential factor to understand the diversity of the concerned areas. Hence, CBA located in central European regions and Northern countries are performing best (EuRegio Salzburg - Berchtesgadener Land – Traunstein; Ems Dollart Region; Oresund Committee and Euregjo).

Negative population growth rates are observed in Duna-Koros-Maros-Tisza Euroregion and Euroregiono NEMUNAS Marijampoles biuras, where net migration does not compensate the negative natural increase. The remaining CBA seem to be more successful in attracting population, leading to highly positive net migration values that so far compensate the low or negative natural growth. Population tends to concentrate on the age group 15-64 in those CBA showing negative population growth rates, while in general terms the other CBAs are more old age dependant.

Despite the Central and Northern CBAs are performing better in terms of GDP or R&D expenditure, the significantly high growth rates found in newly accessed countries, in particular in Romania, are mitigating such disparities over time. Social cohesion indicators reveal a more worrying situation in those CBAs where economy shows less dynamism.

Great disparities are found concerning the structure of the economy, but in general terms, a decreasing trend of agriculture and fishing is found in all the areas.

Environmental challenges are stronger in those CBAs where industry plays a major role, while access to environmental friendly technologies is lower and environmental control remains rather low.

3. Lessons learnt for policy development

Generalising the crucial findings from the ULYSSES study we have pinpointed some general ideas that might be of relevance for European cross-border policy development:

- a) **Borders matter:** The evidence collected by ULYSSES project shows as (i) borders keep playing a major role in explaining the behaviour of the different regions; (ii) border effects are clearly perceivable at the national and regional levels; (iii) cross-border commuting levels between different regions still tend to be low, and; (iv) borders seem to keep functioning as a limit for the diffusion effects.
- b) **Geography matters:** Regional/local geographic conditions impact on territorial development within cross-border areas in many ways. Indeed, borders are very diverse across Europe and may have different implications depending on the sometimes neglected geographical features that characterise such borders (seas, rivers, mountains, etc.).
- c) **Regional delimitation matters:** The territorial analyses made evident as the regional statistical units available for statistical purposes across Europe, namely NUTS 2 or 3 regions, have totally different connotations depending on the area.
- d) **Scale matters:** Evidence have shown that (i) the geographic scale at which data is produced/collected conditions the final results of the analysis in various ways; (ii) many of the topics covered would require further analysis based on fine-grained data; (iii) ESPON data is a precious asset in approaching the cross-border issue at the European level, but its reference scale seems somehow inappropriate for designing regional/local strategies.
- e) **Cohesion matters:** Both the multi-thematic analyses and the governance analysis show clear differences between the different parts of each border region, between the border regions and their domestic hinterland, and amongst the border regions across Europe. The goal of a balanced territorial development remains a challenge.
- f) **Diversity matters:** The diversity of the involved territories must not be regarded as a barrier to a successful territorial development but as an opportunity for economic development, complementary labour markets and cultural richness. The challenge is to enact place based approaches that make use of the territorial potential.
- g) **Territorial cooperation matters:** All ULYSSES regions have a certain experience with bi- and multi-lateral cross-border institutions. In all regions, the institutional setting shows the overarching importance of the structural funds, in particular with regard to the INTERREG programme. Moreover, the new European tool of the European Grouping for Territorial Cooperation (hereafter EGTC) is broadly tested and adopted within the ULYSSES regions.
- h) **Spatial development strategies matter:** ULYSSES experience proves that the knowledge basis for cross-border regions is not comparable with the ones of domestic regions, and that most regions have already formulated strategic elements for territorial development, either in form of more analytical studies or of joint political declarations. However, we see a certain tendency that these documents are often quite abstract and not always institutionalised in a political way.
- i) **Knowledge matters:** Reciprocal knowledge of current territorial trends by all parties is essential in order to boost successful strategies. This calls for a joint effort for producing focused, complementary and tailor-made analyses within all the CBA.
- j) **Institutionalisation matters:** Cross-border strategies related to spatial planning will only be able to influence later territorial development if the key messages will be institutionalised in political way. On top of aligning agendas and priorities at regional and local levels, this would allow the CBA to have a shared strategic objective to lobby national or European authorities in support of local actions.

4. Further steps

Despite the precious data and concept assets provided by ESPON, there are significant shortcomings, which stress the importance of further analytical work that could lead to a deeper understanding of the phenomena at work, their manifestations and causes, allowing a better cross-border bottom-up approach.

- a) A first major issue is the **adaptation of many of the ESPON data and concepts to lower geographical scales**. For analysing specific border effects, data at least at the LAU 1 level becomes necessary. Another aspect is that often the concepts themselves are more suited for the European level.
- b) A second major issue is the **need for more frequent data updates**. Much of the ESPON data belongs to the late nineties and early two thousand. Often, the NUTS delimitation of 1999 was used, which has been subject to significant changes in many countries, further limiting its usability. There have been, nonetheless, some noteworthy efforts to update some selected indicators, namely the composite Lisbon Strategy performance benchmark and the potential accessibility indicators for different modes of transportation.
- c) A third major issue is the **further improvement of the data coverage on some of the main themes** that have been analysed by the ESPON. As the ESPON programme is not focused on primary data collection, data insufficiency cannot really be attributed to the programme, but is more related: (i) to general difficulties in guaranteeing uniform procedures in data collection and treatment at the European level; (ii) to the simple absence of data on some themes even at the national levels, and; (iii) to the difficulties in getting major agents to share the data they possess.

Hence, it becomes clear that for a deeper understanding of the cross-border realities a qualitative leap in data availability is indispensable. Specifically, the following aspects could be considered:

- Try to **measure the flows** that occur between the different sides of the border: in this regard, it would be interesting to measure the significance, direction and motivation of cross-border commuting.
- **Understand the urban-rural relationship** at a cross border level: it would be very interesting to see if urban areas on one side of the border are being used for service provision or as regional markets for rural areas on the other side of the border.
- Study the possibility for **deepening joint public service provision** to limit redundancies.

From ULYSSES experience it can be concluded that ESPON has proven to be a good reference framework for cross-border spatial cooperation across Europe, increasing the value added of this type of cooperation in three interconnected ways:

- Firstly, ESPON offers specific and **comparable data** at the European level, which serves as reference to understand how specific cross-border areas are positioned with respect to European and national standards for most relevant territorial indicators.
- Secondly, ESPON contributes to the **achievement a shared view** of cross-border reality, through focused discussion.
- Thirdly, ESPON allows **identifying those topics that require further analysis** and specific focus at lower spatial levels.

Indeed, the value added of ESPON should be totally compatible and complementary to any additional tailor-made analysis built against this backdrop, which by definition needs to be focused on regional/local specificities that necessarily imply gaining access to data produced at lower geographical levels. Hopefully, this regional/local dimension will be further addressed within all the CBA involved in ULYSSES, using the results of the project as a starting point for cross-border spatial development strategies.

B. Report

1. Introduction

According to the European Commission, “cross-border cooperation is essentially about *filling the gaps*” (EC 2012a) aiming at promoting higher levels of ‘territorial cohesion’. Essentially, this latter concept, which builds on the European Spatial Development Perspective - ESDP (EC 1999), is understood as “an expression of solidarity between the Member States and regions of the European Union” (EC 2012b), pursuing a balanced and sustainable development among different EU territories.

Even though the expression ‘territorial cohesion’ was actually coined in 2005 in a scoping document that later originated ‘The Territorial State and Perspectives of the European Union’ (EU 2006), the concept itself has a long history within the EU policy development process. It can be said that the origins go back to the Treaty of Rome (1957), where a reference to reduce regional disparities is made in the preamble. In the 1970s, Community action was taken to coordinate the national instruments and provide additional financial resources. With the adoption of the Single European Act in 1986, economic and social cohesion become objectives alongside completing the single market. Eventually, the Maastricht Treaty (1992) incorporated the policy into the EC Treaty itself (Articles 158 to 162).

This Treaty stressed the importance of territorial cooperation and territorial trends for further territorial cooperation and cohesion. Debates on these topics, partly linked to the INTERREG cooperation programmes born in 1989, heated up since the early 1990's. More recently, territorial cooperation and cohesion became a cornerstone of EU policy, particularly as new Member States from Eastern Europe joined the EU. In particular, overcoming the artificial barriers placed by borders and fostering transnational and inter-regional linkages has been an important aim of cohesion policy for a long time now. In fact, territorial cooperation has been one of the three objectives of territorial cohesion policy since 2007 (EC 2010b, p.257).

In this context, the Green Paper on Territorial Cohesion labelled territorial cohesion as “a means of transforming diversity into an asset that contributes to sustainable development of the entire EU” (EC 2008, p.4). This document emphasises the importance of territorial diversity to contribute to sustainable development in the EU, thus allowing regions to mobilise their intrinsic development potential.

Thus, territorial cohesion gained importance to the point that with the Treaty of Lisbon of 2009 the concept became one of one of the main objectives of European policies, alongside economic and social cohesion. The Treaty also identifies territorial cohesion as a shared competency between the Union and the Member States and border regions are mentioned as disadvantaged regions.

Along these lines, on 3 March 2010 the European Commission proposed the Europe 2020 Strategy, which was officially adopted on 17 June 2010 by the European Council (EC 2010a). This policy document sets out a vision of Europe's economy for the 21st century. It shows how the EU can be turned into a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion. This Strategy explicitly mentions cross-border cooperation as a must to foster excellence and smart specialisation (EC 2010a, p.10/11), while it calls for further cooperation and harmonisation of legal systems across Europe as a way for avoiding bottlenecks and favour cross-border activity and exchanges by citizens and companies (EC 2010a, p.22/23).

The Fifth Cohesion Report by the European Commission (EC 2010b) supports the Europe 2020 strategy by showing how regions and cohesion policy can contribute to achieving its objectives, understanding regional diversity across Europe as an asset for sustainable development. This report stresses that the targets of the Europe 2020 strategy will not be achievable by policies formulated only at the EU or national levels in isolation. In contrast, joint actions of national, regional and local policy actions are seen as key in defining and implementing most effective policy measures.

Hence, the Fifth Cohesion Report stresses the role of CBA as the main agents for territorial cooperation, though recognising the intrinsic difficulties of such kind of cooperation “due to

different institutional systems, cultures and languages” (EC 2010b, p.xiv). In parallel, the report emphasises the importance of access to services, ‘functional geographies’ and territorial analysis, while adopting a more flexible approach towards territorial cohesion issues, stating that ‘flexible geographies’, including CBA delimitations, should be adopted depending on the issue (EC 2010b, p.60).

Additionally, the Fifth Cohesion Report points out the different types of challenges faced by internal and external borders, as the former are challenged by the need to reinforce cross-border cooperation in order to overcome the remaining barriers that hinder regional integration, while the latter are still challenged by insufficient basic infrastructure, including cross border transport and communication links (EC 2010b, p.61).

The Territorial Agenda agreed by Ministers from all EU Member States in 2007 is a shared policy paper aiming at mobilising the potentials of European regions and cities through integrated spatial development, setting out a number of European policy orientations. The revised Territorial Agenda 2020 was adopted on the 19th May 2011, and is accompanied by a Road Map of actions (EC 2011b). This policy document considers territorial integration in cross-border and transnational functional regions as one of the territorial priorities for the development of the European Union and thus: (i) recognises that actions at the cross-border, transnational and inter-regional level have a pivotal role to play in the implementation of territorial priorities across Europe; (ii) supports transnational and cross border integration of regions going beyond cooperation projects, and; (iii) recommends that “territorial cooperation initiatives should be geared towards the long term objectives of territorial cohesion” (EC 2011b, p.9), building on past experience, like the former B strand INTERREG initiative, and new legal instruments, such as EGTC.

More recently, on 1 December 2011, the European Commission published the Seventh Progress Report on Economic, Social and Territorial Cohesion (EC 2011a). The report highlights the urban and regional dimension of the Europe 2020 strategy by showing how cities and regions are faced with different combinations of development problems and growth potentials. This fact is presented as one of the main reasons explaining why cohesion policy actually uses an integrated approach that can be adjusted to local needs and opportunities. The report also measures the distance of EU regions to their national 2020 targets.

Thus, territorial cohesion has become one of the main driving forces of European policies, while territorial cooperation, under its different aspects, is one of the main strategies made available to boost this objective (EC 2009). In this context, cross-border cooperation assumes relevance at different territorial scales (local, regional and trans-national), fostering synergies and coordinated actions between regions of different Member States and between regions of EU Member States and neighbouring countries, with different governance systems and levels of performance. In a way, cross-border cooperation represents a form of lower scale operationalisation of European territorial cohesion objectives.

Cross-border areas have an important role in this respect since, as mentioned in the revised Territorial Agenda, the challenges faced today by the EU in terms of territorial cohesion “calls for continued networking, cooperation and integration between various regions of the EU at all relevant territorial levels” (EC 2011b, p.4).

Within this policy framework, ULYSSES has been as expected an experimental and innovative project supported by 18 European border and cross-border areas, which aims at using applied research results from ESPON as a yardstick for decentralised cross-border spatial development. Hence, ULYSSES can be understood as a practical instrument ideally contextualised in a more general cross-border cooperation scheme. Indeed, the architecture of the project has been designed taking into account this overall policy framework, and the project itself can be understood as an attempt to push forward the idea of designing more robust cross-border cooperation schemes as a means to boost territorial cohesion at different levels.

Particularly, the focus of ULYSSES project has been put on the use, usage and usability of ESPON data for supporting cross-border cooperation processes. Within this framework, the Transnational Project Group (hereafter TPG) has worked together with stakeholders in a joint effort to gain focused knowledge on local territorial trends that might eventually contribute to the start of a joint cross-border spatial development process. The involvement of both inter-regional (i.e. the AEBR) as well as local/regional stakeholders from a number of CBA across

Europe ensured that the implementation of the project actually served the specific needs of local and regional authorities in that respect.

In terms of specific analytical contents, ULYSSES brought along two different lines of research with different levels of detail:

Firstly, a targeted analysis including high-quality, comprehensive and MTA on six (6) CBA, namely:

- The Upper Rhine Trinational Metropolitan Region CBA along the land borders between France, Germany and Switzerland.
- The CBA along the entire Spanish-French land border (Pyrenees).
- The CBA along the land border between Greece and Bulgaria.
- A CBA covering parts of the Northern Finland-Russian land border (Euroregion Karelia).
- A CBA (Euroregion Pomerania) along the borders between Poland, Germany (land border) and Sweden (maritime border).
- Extremadura/Alentejo CBA (ES/PT).

Secondly, seven (7) shorter DFS focused on the following CBA:

- EUREGIO (EUREGIO)
- Öresundskomiteen (The Öresund Committee)
- Duna-Körös-Maros-Tisza Euroregion (Danube-Kris-Mures-Tisa Euroregion)
- EuRegio Salzburg-Berchtesgadener Land-Traunstein
- Regione Autonoma Friuli Venezia Giulia (Autonomous Region of Friuli Venezia Giulia)
- VšĮ Nemuno euroregiono Marijampolės biuras (PI Nemunas Euroregion Marijampole Bureau)
- Ems Dollart Region

From an operational perspective, while the six MTA have delivered to CBA a “reference baseline” for elaborating new or enhancing existing cross-border spatial development concepts, the seven DFS have sought to represent an operational input for these areas in understanding the European dimension of their development potentials and challenges.

2. Research approach

The proposed research design for ULYSSES aimed at the achievement of the abovementioned objectives by setting a general framework in which the six MTA and the seven DFS could be adapted to some extent to the actual needs of local/regional stakeholders from the concerned CBA.

For that scope, since the beginning of the implementation phase fluent communication channels were established with the concerned stakeholders from the six areas under MTA. These stakeholders have sometimes provided extra datasets and additional information that eventually resulted in more tailor-made analyses for such areas. The communication channels implemented for the seven areas under summarised analysis were activated later-on during the project implementation. Fluent communication between the TPG and the stakeholders also allowed for the improvement of the specific contents of a number of DFS, covering specificities of such areas based on supplementary data provided by the stakeholders.

At this point, it is also worth mentioning that in some measure the six MTA and the seven DFS share a common structure with obvious differences in the range of the analyses performed. In truth, the first research activity planned within ULYSSES, which aimed to generate a multi-scale performance analysis for all the CBA involved in the analysis, was planned combining two further strands that took account of the differences between the two types of areas involved in the project:

Firstly, a **territorial analysis** was performed reflecting on the main topics mentioned in the project specifications. These included cross-border polycentric development, patterns of urban/rural relationship, levels of accessibility and connectivity, effects of demographic change (*territorial profile*), and level of attainment of Lisbon/Europe 2020 and Gothenburg objectives by the CBA (*territorial performance*). All the abovementioned issues were analysed both within the six MTA and the seven DFS, though with a different level of detail. According to the project specifications, this analysis was the only input that DFS areas received from ULYSSES.

Secondly, an **in-depth statistical analysis** focused only on the six MTA areas was performed. This analysis included (i) a catching-up analysis; (ii) a principal components analysis (hereafter PCA), and; (iii) a multiple regression analysis. The catching-up analysis intended to evaluate the speed of catching-up (or lagging behind) process with EU27 leading region in terms of GDP per capita¹ through a standard logistic process. The PCA grouped the different profile and performance indicators by maximising the amount of variance accounted for in the observed variables by a smaller group of variables called 'components'. After the PCA was concluded, several multiple regressions were made, having as independent variables each factor of the performance indicators and as dependent variables all the factors of the territorial profile. In combination, these analyses produced synthetic indicators for the capacity of the CBA in achieving the Lisbon/EU 2020 and Gothenburg strategy goals, as well as trying to understand which aspects of the territorial profile are most important in explaining regional capacity to do so.

It should be mentioned as well that these two analyses have been performed on different scales, so that the indicators of each CBA have been compared on different spatial levels (NUTS 3, cross-border, national and EU27/ESPON levels). This approach had the twofold purpose of (i) understanding the behaviour of regions in context, as many indicators are not easy to interpret in absolute terms, and; (ii) to contribute in understanding the effect of the border on regional performance.

The data used in the abovementioned analytical strands basically included ESPON datasets (e.g. morphological urban areas) and EUROSTAT indicators (e.g. demography indicators), together with additional information from national databases and data provided by local stakeholders with various purpose/range, such as: (i) more fine-grained indicators; (ii) more up-dated data; (iii) data alternatives filling existing data gaps, and; (iv) additional figures or

¹ In our analysis, which relied on data for 2008 or before, the leading region was Inner London.

qualitative information covering topics of special interest for local/regional stakeholders (e.g. specific indicators related to R&D and innovation in Upper Rhine Trinational Metropolitan Region CBA).

In addition to all the abovementioned statistical operations, which mainly relied on quantitative data, a comprehensive **cross-border institutional analysis** has been included as well in every MTA. This analysis captured the diversity of governance frameworks existing within each of the six CBA in regard to both the *structural dimension*, i.e. the overall framework that can hardly be influenced by the partners of cross-border cooperation, as well as the *activity dimension*, i.e. the intensity and continuity of institutionalised cross-border cooperation on the regional level.

For the sake of simplicity and applicability, the *structural dimension* included factors like (i) the political status of the border (e.g. EU membership / historicity, Schengen status); (ii) the planning system (i.e. the planning culture family); (iii) the physical status (e.g. geomorphology), and; (iv) the language barrier (i.e. number of languages existing in the area). These domains have been combined in a synthesis score that allows saying if the borders function as *separation*, *interface* or even as a *link*.

In contrast, the *activity dimension* has taken account of: (i) the historicity of cross-border cooperation in general (i.e. earliest founding date of cross-border cooperation); (ii) the maturity of cross-border cooperation (i.e. INTERREG III participation); (iii) the institutional thickness in cross-border cooperation (i.e. number of permanent institutionalisations); (iv) the current activity (in terms of operative EGTC); (v) the cross-border spatial development on regional level (e.g. joint GIS tools), and; (vi) the existing cross-border transport projects (e.g. TEN-T corridors crossing the border). These domains have been combined in a synthesis score that classified the borders function as *integration*, *cooperation* or *separation*.

These latter categorisations have been mainly based on previous ESPON studies, particularly on ESPON Interact cross-border cooperation (ESPON-INTERACT 2007, p.18) ESPON Geospecs Interim Report (ESPON 2010). Additionally, other ESPON projects also supported ULYSSES' research in various ways, either conceptually or methodologically. These projects are ESPON 1.1.1 "Urban areas as nodes in a polycentric development", 1.1.2 "Urban-rural relations in Europe", 1.1.3 "Enlargement of the EU", 1.1.4 "Spatial effects of demographic trends", 1.2.2 "Telecommunication services and networks", 1.3.1 "Spatial effects of natural and technological hazards", 1.3.2 "Territorial trends of the management of the natural heritage", 1.3.3 "Impacts of cultural heritage and identity", 2.1.1 "Territorial impact on EU transport policies", 2.4.2 "Integrated analysis on transnational and national territories" and 3.2 "Spatial scenarios in the relation to the ESPD", and 3.3 "Territorial dimension of the Lisbon-Gothenburg Process"

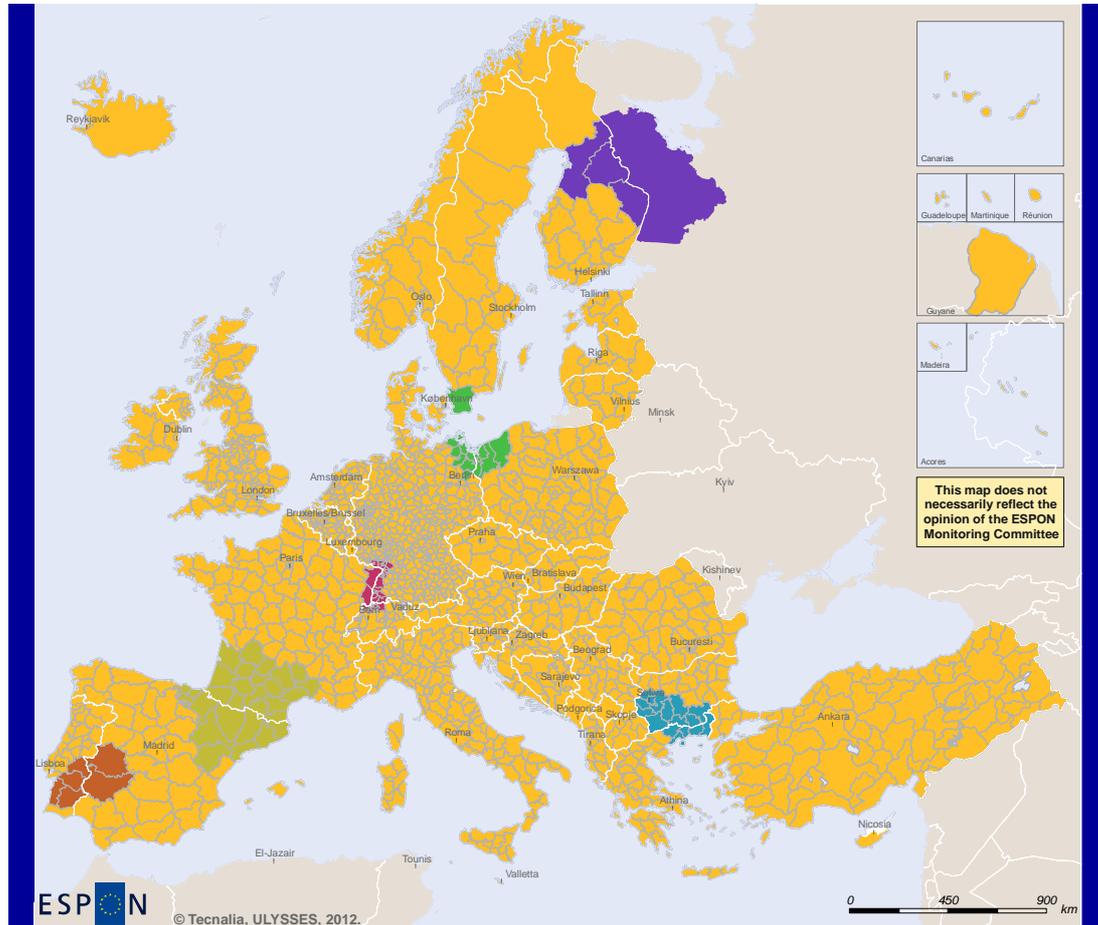
All the abovementioned activities crystallised in a comprehensive diagnosis for each MTA area that was delivered to the concerned stakeholders and the scientific community in general as an annex to the Interim Report of ULYSSES. On that basis, an **integrated analysis** taking account of previous inputs was performed at a later stage of the project. From a methodological perspective, this integrated analysis adopted the form of a traditional SWOT analysis structured in a two-phase analysis that included (i) a *status-analysis phase* in which the findings derived from previous research tasks were organised and prioritised as main challenges and opportunities, and; (ii) an *action-decision phase* in which a response to each one of the challenges and opportunities identified in previous phase was proposed as a potential strategy.

As an additional input to the *status-analysis phase*, the opportunities and threats identified by ULYSSES were contrasted with the scenarios developed by ESPON 3.2 (ESPON n.d.) Concretely, (i) the Baseline / trend scenario; (ii) the Danubian Europe / cohesion-oriented scenario, and; (iii) the Rhine-Rhone Europe / competitiveness-oriented scenario and their implications for the CBA under analysis were integrated in the final opportunities and threats proposed for each area.

It goes without saying that the involvement of relevant stakeholders in this process was crucial and that both the challenges and strategies were discussed and validated with the stakeholders themselves. For this reason, the methodology and the SWOT analysis are seen as the main contribution that ULYSSES can do to the Practical Guide that the AEBR will develop in the near future.

3. Multi-thematic territorial analysis (MTA)

The following section includes a summary of the main findings obtained from the MTA. The full versions of all six MTA can be found in the Scientific Report attached to this document. The geographical distribution of MTA areas is shown in Map 1 below:



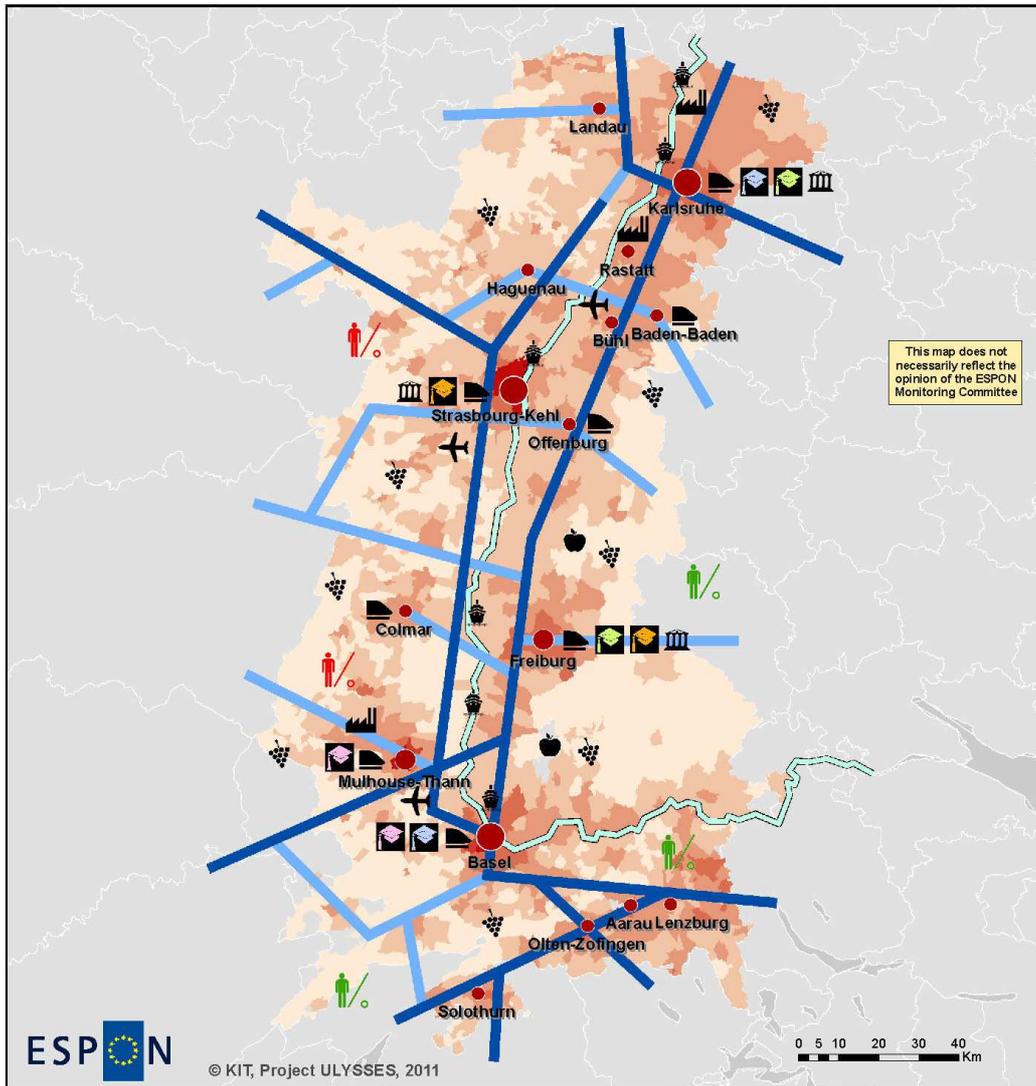
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 3
© EuroGeographics Association for administrative boundaries

- Multi-thematic Territorial Analysis areas**
- Euroregion Karelia
 - Euroregion Pomerania
 - Extremadura-Alentejo CBA
 - Greece-Bulgaria CBA
 - Upper Rhine Trinational Metropolitan Region
 - Working Community of the Pyrenees

Map 1 Delimitation of Multi-thematic Territorial Analysis areas at NUTS 3 level

3.1. Upper Rhine Trinational Metropolitan Region




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Local level: NUTS3, LAU2
 Source: KIT, 2011
 Origin of data: ESPON

© EuroGeographics Association for administrative boundaries



Map 2 Territorial synthesis of the Upper Rhine Trinational Metropolitan Region CBA

Key analysis / diagnosis

Although being a border region, the indicators used show a high attractiveness of the CBA by steadily immigration. Despite low fertility rates, the CBA is slow but steadily growing by immigration. This indicates a strong labour market, especially in the Swiss NUTS 3 units of the CBA, with a high share of incoming commuters from France and Germany.

Polycentricity is a core phenomenon in the analysis of the cross-border Rhine Valley. The main FUAs within the German-French-Swiss Upper Rhine Conference are Basel in the South, Strasbourg-Kehl in the middle and Karlsruhe in the North. They are embedded in several neighbouring and surrounding FUAs. These FUAs of different levels build the polycentric structure of the Upper Rhine Valley.

The economic situation of the rural areas concerning agriculture is in comparison to other European regions strong and has a relatively solid added value. This is due to concentration on winery and arable crops. The area used for agricultural use however is shrinking on an average level. The available data does not allow getting an insight in conflicts of land use. Due to topographical circumstances agglomeration takes place in the plain Rhine valley. Urban development and agriculture have to share the most valuable soil, so there are conflicts which cannot be described with the data.

The Upper Rhine Valley is a very well connected CBA in the centre of Europe. Various important European destinations are readily accessible through motorways or high-speed rail. Three regional airports and the neighbourhood of important international air traffic hubs provide excellent accessibility of worldwide destinations. Numerous road crossings of the River Rhine and the national borders make commuting to the neighbouring countries on a daily basis relatively easy. A fly in the ointment though are issues with intra-regional connectivity in public transportation, which hinder the effective cross-border usage of common infrastructure.

The CBA has a quite strong economy which can be seen by the GDP per capita; most of the NUTS 3 units of the CBA are above the national and EU averages. In the economic development the CBA could steadily increase GDP per capita and the number of employees. Also unemployment rates are very low, especially in the Swiss and German NUTS 3 units of the CBA. These low unemployment rates as well as high GDP rates may be linked to a relative high share of high and medium tech enterprises in the CBA.

The PCA validates the results of the previous chapters, putting them into relation to the involved countries of the CBA and all NUTS 3 units in Europe. Again it is affirmed, that the CBA analysed belongs to the stronger regions in Europe regarding economy, unemployment, environmental conditions etc. This is mainly due to the high factor of centrality of the CBA as well as a high amount of funding and investment in R&D.

In this analysis data from Switzerland is missing, but the proximity of the French and German NUTS 3 units to Switzerland is important for their (economic) performance as a high share of employees chose to live in France or Germany and work in Switzerland because of higher wages and lower taxes there.

The reputation of the Upper Rhine Trinational Metropolitan Region as one of the pioneers of cross-border cooperation must not conceal that the structural dimension of the Upper Rhine Trinational Metropolitan Region does bear considerable challenges. The political situation has to take into account that three countries – one of them being a non-EU Member State – are involved, and being divided by one language barrier. Even though Switzerland is a country with several languages, the Swiss border region near Basel belongs to the German speaking part.

The 'institutional thickness' is witness of the long-standing cooperation and can be inspiration for younger cross-border cooperation but the overlapping institutions are sometimes seen as a challenge for political coordination and efficiency.

Through the introduction of the governance structure of the Upper Rhine Trinational Metropolitan Region the governance efforts were enhanced beyond the field of politics through the inclusion of the fields of economy, science and civil society into one integrated four column model. The aim is to support the convergence of the existing heterogeneous institutional arrangements into one effective governance structure under the lead of the Upper Rhine Trinational Metropolitan Region.

Most relevant challenges and opportunities

The Rhine Valley is one of the European main corridors for passenger and freight transport. There are excessive networks of road and rail, but the interconnection between those are still

insufficient. The expected increases in traffic all over Europe – especially in freight – and new connections through the Alps like the Gotthard will put pressure on the transport networks – which are partly at their capacity limits - in this important part of the North-South connection within Europe.

Also the public transport of the CBA is quite comprehensive in all national parts. The interconnection and quality of service in-between is still an important issue of cross-border cooperation, as a real cross-border network does not exist. The existing transport network is focused on national needs and institutions and a shared use is seldom aspired.

Despite the advantageous figures of a growing region, the CBA shows strong differences between its national parts: while the fertility rates in the Swiss and German units are low and natural population development is already or will be negative, the French units still have natural increases additional to the overall gains by immigration. Besides the overall amount the structure of the population will change dramatically as aging and hence dependency ratios will increase. Also, a lack of skilled workers is predicted for the future.

Regarding environmental issues, existing natural habitats are further dissected by anthropogenic interventions like settlements of traffic infrastructure which leads to a loss of biodiversity in the densely populated parts of the CBA. Also traffic in and through the CBA causes high ratios of emissions in local parts of the CBA.

There is a dense network of larger and medium sized cities in the CBA, though advantages of the development following the principle of decentralised concentration cannot not fully be exploited, as the network does not quite work in a cross-border way. While the Rhine Valley is place of various land-use conflicts of environment, settlement, economy and transport, the more rural areas of the mountain ranges suffer from losses of population and functions. The provision of goods and services can be maintained by a dense net of central places as well as innovative and mobile ways.

Proposed strategies

The strategies identified suitable for the CBA were clustered to a sort of “meta-strategies” or “strategies compass”, linking single suggestions. The following “meta-strategies” are not supposed to be implemented separately but amend each other.

The development of these strategies revealed great coincidences with the main strategy paper of the Upper Rhine Trinational Metropolitan Region which was drawn up in 2010 in the course of the foundation of the governance structure of the Metropolitan Region. Especially the importance of the science sector and the objective to converge the existing institutional arrangements are to be mentioned here.

Silicon Rhine Valley

The innovative urban centres are an excellent basis for further economic development especially regarding knowledge driven technologies of the existing SMEs and the high amount of research institutions and universities. This diversity leads to economic stability also in phases of crisis. Research and development as well as research institutions should be subject of active integration and networking. Existing networks are to be enhanced, widened and deepened. Chances of in-migration have to be used by an active marketing for selective but substantial in-migration of skilled workers. Also high-tech in well accessible rural areas should be promoted e.g. by offering broadband connections.

Physically, the inter-connections of economic, public and research institutions are to be enhanced by a cross-border, integrated system of public transport, relying on integrated timetables and common ticketing for the whole CBA.

Cross-border activities are to be flanked by the promotion of intercultural exchange also on educational levels (i.e. high schools, universities).

Polycentricity – decentralised concentration (Christaller² 2.0):

The polycentric structure of the CBA should be enhanced based on the principle of decentralised concentration. The normative and often solely descriptive principle of Central Places is applied all over the CBA, consisting of cross-border functional cooperation of the central places (FUAs) of the CBA. By providing a dense network of settlements, the provision of goods and services in the whole region can be secured also in rural areas of the CBA by innovative and/or mobile provision of goods and services.

While urban centres of the FUAs are home of knowledge related economic activities, rural areas profit from offers of gastro-, agro- or wellness tourism as well as using the potentials of renewable energies as additional forms of Added Value. This can be supported by providing and fostering housing in rural towns and centres (e.g. by providing good accessibility by road and public transport as well as attractive towns).

Priority should be given to coordination, cooperation and joint operation rather than investments in physical infrastructure.

Trademark Upper Rhine

The Upper Rhine shall be marketed as a recognisable image/trade mark, focussing on few, but recognisable strengths of the Upper Rhine. This marketing is targeted internal to the actors from politics, economy, research and social society within the CBA by a pro-active network management and identity building, as well as external by coherent external presentation. Local development has to be supported and social and cultural identities protected through high quality tourism. To this end, a marketing strategy should develop a strong label of Upper Rhine tourism.

Aim is to foster attractiveness and cross-border cooperation and bind human and social capital into the region through active network management and identity building. Here one can make use of the pressing challenges through globalisation, (i.e. increased mobility and global competition) of the situation to bring together stakeholders to work on an integrated region-wide development strategy.

Further steps

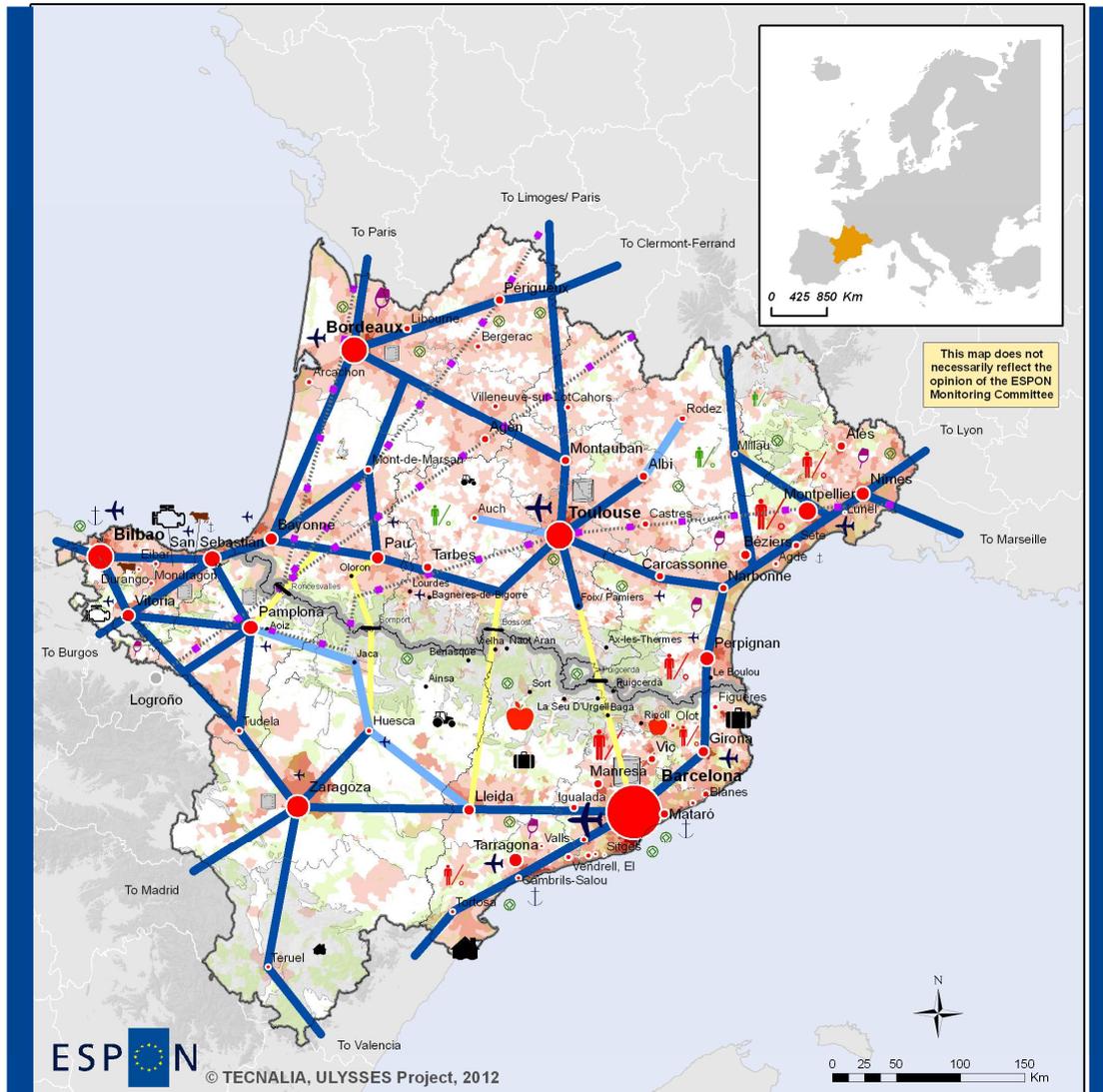
What had to be excluded from the analysis are non-quantitative factors, nevertheless playing a crucial role for the attractiveness of a region: the Upper Rhine is well known for culture, landscape, warm summers, attractive cities, wine etc. Choosing the place of domicile, these factors are important for a lot of people (as long as the working conditions are met). From the quantitative statistical analysis some challenges of the future for the CBA come not in sight:

It became obvious in the discussion of the indicators, that the level of detail is not sufficient. The NUTS 3 units involved are not only of uneven sizes (e.g. French NUTS 3 units compared to Swiss ones) but are too large to measure effects within the CBA, for instance when it comes to places of domicile of the incoming migrants, shrinkage and coexistent growth processes and so on. A further important issue is data availability. Without data for the Swiss NUTS units, the comparison is incomplete and cannot reveal what it could, if data was available.

The results of the ULYSSES project can be used as a starting point for joint activities of the stakeholders of the CBA deepening the existing cooperation and making existing institutions durable.

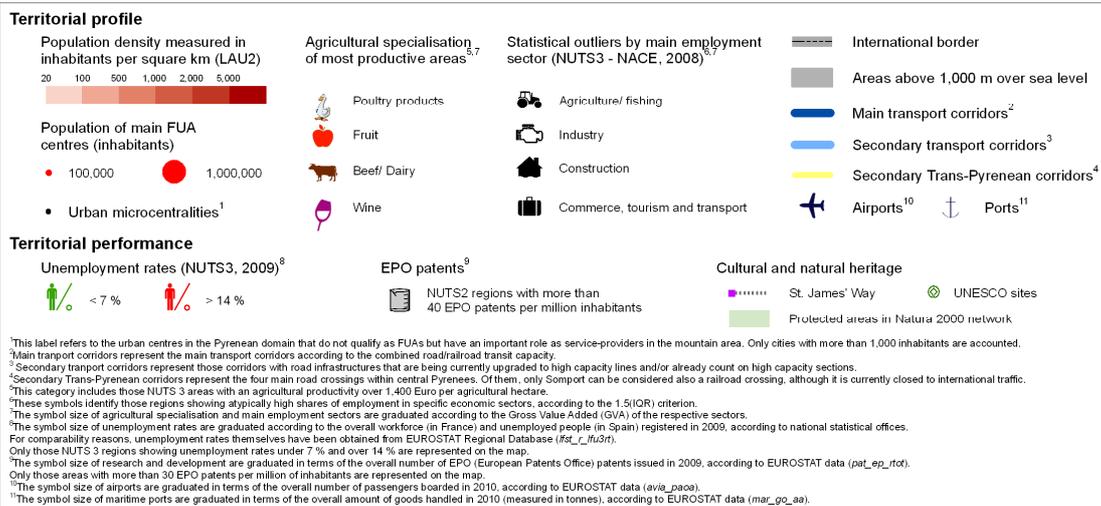
² Walter Christaller is synonym for a hierarchical but at the same time polycentric structure of settlements. His ground-breaking work on “Central places in Southern Germany” led to the main principle of German spatial development. Also, in analysing the structure of settlements, he included in his research not only the South of Germany, but also Alsace and Northern Switzerland –both of them included in the CBA–.

3.2. Working Community of the Pyrenees



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Local level: NUTS3/ LAU2
Source: Various sources, various years
© EuroGeographics Association for administrative boundaries



Map 3 Territorial synthesis of the Working Community of the Pyrenees

Key analysis / diagnosis

Despite its border nature, the demographic indicators observed illustrate a high attractiveness of the CBA. Besides positive natural growth, the CBA has steadily gained population by means of migration and hence shows an overall positive population growth in the observed period. However, a closer look onto the evolution of net migration shows a steady decrease of net migration since 2005, and a significant drop in 2008.

The distribution of the urban population in the area is centrifugal in respect to the Pyrenees mountain range. The urban system on the French side of the CBA is more polycentric than the Spanish one, essentially due to the absence of a clearly dominant FUA such as Barcelona. Focusing only on the confining NUTS 3 regions, the Spanish sector seems to rely on a denser network of medium and small-sized towns and cities, making this area more polycentric. French FUAs have more service-oriented economy, while the Spanish FUAs seem to rely more on manufacturing and construction sectors.

From 1990 to 2006, most regions within the CBA lost agricultural surface. The economic trend observed in relation to the agricultural sector suggests a decreasing weight of primary activities in relation to the economy as a whole, both in terms of GVA and employment.

The analysis of accessibility relies on a set of proxy indicators mainly related to physical accessibility and internet connectivity at European level. Catalonia appears to be the most connected region according to both variables. Accessibility by road clearly shows that the Spanish sector of the CBA is comparatively much more isolated from European core areas than French regions. In terms of rail accessibility, those regions that have performed best are Spanish provinces instead of French departments. Concerning air accessibility, those areas ranked on top of the distribution are the most urbanised regions with international airports within their boundaries. The most urbanised areas are ranked highest also in multimodal accessibility. Road density proved to be much higher to the French sector of the CBA, while the rail system seemed to be slightly more developed on Spanish regions. Connectivity between Spain and France through the Central Pyrenees is quite a complex issue. Rail lines are not coincident in some cases, and using high capacity roads is only possible on the most Western and Eastern extremes, where the most of the commercial and passenger exchanges take place. Broadband penetration and internet usage is above the European average in all NUTS 2 within the CBA.

Concerning the Europe 2020 strategy, the disparities on both sides of the border within the CBA in terms of GDP per capita indexed to the leading region, are weakened if attention is paid onto the confining NUTS 3 areas. The catching up analysis illustrates the outstanding position of ES211 Alava which is approaching to the leader, which can be considered as “steady catching-up region” matching London in 30 years time. Midi Pyrenees outstands clearly in total investment in R&D, followed by Languedoc Rousillon and Basque Country and Navarra at the Spanish side. The number of patent applications decreased markedly in both sides of the border in the last year. Social cohesion indicators show certain but not very pronounced disparities across de CBA.

As far as Gothenburg goals are concerned, the CBA is above the EU average in soil sealed areas per inhabitant, below the EU average on ozone concentration exceedances, shows good capacity for urban waste water treatment and shows significant percentage of NATURA 2000 areas. It also shows good values in solar energy resources, and minor and middle sensitivity to climate change regarding physical, social, economic and cultural aspects.

In the light of the results of factor analysis, it can be said that the Pyrenees CBA is characterised by few areas (Barcelona and its surroundings; Vizcaya) that outperform the others economically. It also reveals some important differences between the Spanish and French cross border areas. French Pyrenees CBA shows much higher concentration of public administration work and demonstrates much higher demographic dynamism level than the Spanish regions. Majority of the regions in the WCP are among the leading areas when research, development and innovation intensity is considered. This finding together with rather high level of immigration may imply that there are large expectations for future economic growth in this area.

Most relevant challenges and opportunities

Current demographic trends and unemployment rates pose different challenges to urban and rural settings. **Metropolitan areas** are still subject to population growth and concentrate younger population. This is due to consequence of the changing structure of the economy with its stronger emphasis on services and high-tech and R&D activities, and also due to internal and international migrations.

Instead, ageing, depopulation and decline of economic activities are the main challenges in the **rural settings**. If this is sustained, marginalisation of those settings will be intensified. The foreseen modernisation of TEN-T and high capacity networks will not equally benefit all regions, creating potential bottlenecks in some areas while internal, rural and remote and mountainous areas will be discriminated from main transport infrastructures. A number of environmental challenges (increase of pollution and high sensitivity to climate change and its consequences) are expected in the CBA. A multi-level territorial governance scheme with a clear agenda and verification method is not a fact yet, threatening the entire cross-governance process and increasing the risk of achieving a fragmented view for the area.

It is worth highlighting that economic and social activity can be stimulated in those areas around the aforementioned trends. Population ageing is leading to new business opportunities linked to social assistance and medical research, but also those related to active ageing, such as leisure and tourism. Urban demand and out migration flows from large cities to medium and small towns and rural areas can also bring business opportunities to rural areas. High potential for renewable energy together with largely untouched cultural and landscape assets, as well as unexplored biological resources, make possible the development of a green economy in the WCP.

Existing endowment within all regions is thought to be generous enough as to maintain economic standards and even expand the economic fabric basing on R&D and other investments. In particular, Barcelona MEGA will consolidate its role as a global hub in a globalised economy and the entire CBA can benefit from this fact, especially if Mediterranean and Atlantic corridors are integrated to the 'area of concentration of flows and activities'. A number of smaller urban areas can continue attracting research activities and to link up with the main European and international centres of decision making. In the very remote low-density areas, innovative communication systems will allow the local populations to be connected to mainstream information and communications.

Proposed strategies

After the diagnosis of the current status, strategies of different natures around the set of themes addressed by the MTA are suggested to reinforce the position of the CBA and commented among stakeholders. Those strategies are presented shortly after each topic, followed by the main input received from stakeholder during the validation process (particularly on the territorial profile aspects).

Demographic Change

The main global objective identified is to retain and/or consolidate acceptable levels of demographic dynamism, social cohesion and wellbeing in the WCP, both within urban and rural contexts. Several strategies are proposed to this end: (i) the application of family and smart migration policies aimed at retaining demographic dynamism and attracting young population, (ii) the promotion of the integration of minorities, in particular in metropolitan areas, and (iii) the adoption of a proactive approach towards existing social welfare systems. Lastly, (iv) the exploitation of new business opportunities derived from population ageing.

In the light of the mentioned strategies, the links between demographic trends and the overall economic activity and particularly to employment were emphasised during the validation process with stakeholders. Focusing on population settlement and urban-rural relationships, incentives to attract people to rural areas are considered essential by the stakeholders, and the concept of "territorial contract" arises as a potential tool to promote sustainable development and ensure survival of rural areas. Exploitation of emerging activity niches is considered as an essential condition to avoid "excessive" concentration of population and

activities in specific urban areas. The stakeholders ended up by highlighting the need for a place-based approach that builds its strategic choices upon intrinsic characteristics.

Polycentric development

The major overall objective identified is to reinforce the polycentric nature of the urban network, through different actions such as (i) the implementation of tailored policies aimed at fostering small and medium urban centres; (ii) the connection of medium and small centres to nodes that give access to globalised markets and knowledge hubs, particularly Barcelona MEGA; (iii) Active territorial policies in order to ensure operative functional relations between smaller centres; (iv) Restrictive policies aimed at preventing further concentration of population and activities in a limited number of cities.

Complementarities among urban centres is regarded as essential and challenging at the same time by the stakeholders, when it comes to its implementation, as it requires a shared vision concerning potentialities and priorities. Urban multi-scale complexity becomes an issue that requires looking at the different scales and their role in the overall urban network in a supportive manner. Micro- centralities, supported by new technologies, can emerge as small nodes and play a significant role in this globalised context according to the stakeholders.

Urban/rural relationship

To achieve a new urban/rural relationship less biased towards the metropolitan domain was presented as the major objective, to be reached by (i) retaining and/or consolidating the existing agricultural and tourism potentials within most productive rural areas. The (ii) search for economic alternatives within the most marginal areas, exploring additional development opportunities related to new urban-rural relationships, such as telecommuting and retirement phenomena. Lastly, (iii) the expansion of the services and infrastructures available within such areas, particularly those related to health, housing, education, (internet) connectivity and multimodal accessibility was regarded as a condition for succeeding in the overall objective.

According to the stakeholders, the focus of policy intervention should be put on the achievement of compatible and simultaneous development of both areas, especially as it appears to exist a great range of intermediate situations between the most isolated rural areas and the urbanised regions.

Accessibility and connectivity

The major goal is to increase overall and internal accessibilities as a means to achieve a more balanced and competitive territorial structure. Specifically, the actions suggested are (i) to consolidate and improve existing communication networks and to emphasise overall multimodal accessibility; (ii) to make an effort to increase internal connectivity within the WCP and solve specific accessibility issues of certain cities and marginalised rural areas. An overall transport plan at the WCP level might help identifying local strategic objectives that could be linked to planned networks, either National or European.

Passengers and freight transport, logistics and the economic development and winter viability prevail as the elements to be addressed by the suggested strategies according to the stakeholders. Accessibility and multimodality become more relevant than in other areas in Europe, due to the mountainous character of this area. In this regard, the reorganisation of the road and rail networks remains an issue, in particular concerning railroad permeability of the Pyrenees through its central regions, which could offer an alternative to road transport.

Lisbon Strategy

To achieve higher living standards and social and territorial cohesion is the overall goal to be reached. The specific strategies proposed are (i) to seek economic synergies and take advantage of existing opportunities (i.e. place-based approach to regional development); (ii) to rethink the development model of the WCP by enhancing (smart) specialisation, training, R&D and fostering economic diversity and collaboration, (iii) to offer specific support to the

most deprived areas and; (iv) to adopt specific measures to minimise spatial segregation within cities.

Gothenburg strategy

The overall objective proposed was to take full advantage of natural assets while maintaining natural capital constant. To reach this goal, the actions suggested were: (i) wise management of natural resources (ii) to keep natural capital constant, supporting environmental and spatial policies and protecting the natural heritage (Natura2000 network); (ii) to support and apply awareness raising measures towards environment and fight against climate change and its consequences; (iii) to correct localised environmental problems and; (iv) to explore the possibility of investing in new environmental technologies.

Cross-border governance

The major objective was to increase cross-border cooperation to achieve a more balanced territorial development, by (i) consolidating the existing body of territorial cooperation schemes and (re)activating the process towards the production, updating and implementing a shared strategic vision focused on territorial development, and; (ii) reinforcing the existing territorial cooperation schemes in those areas in the need of further harmonisation and shared views, such as spatial planning, working towards common strategic territorial objectives for the area.

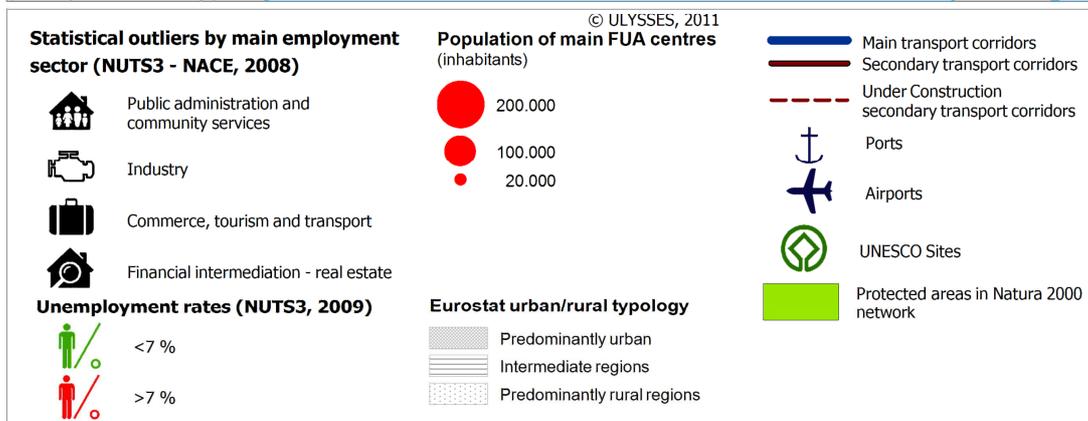
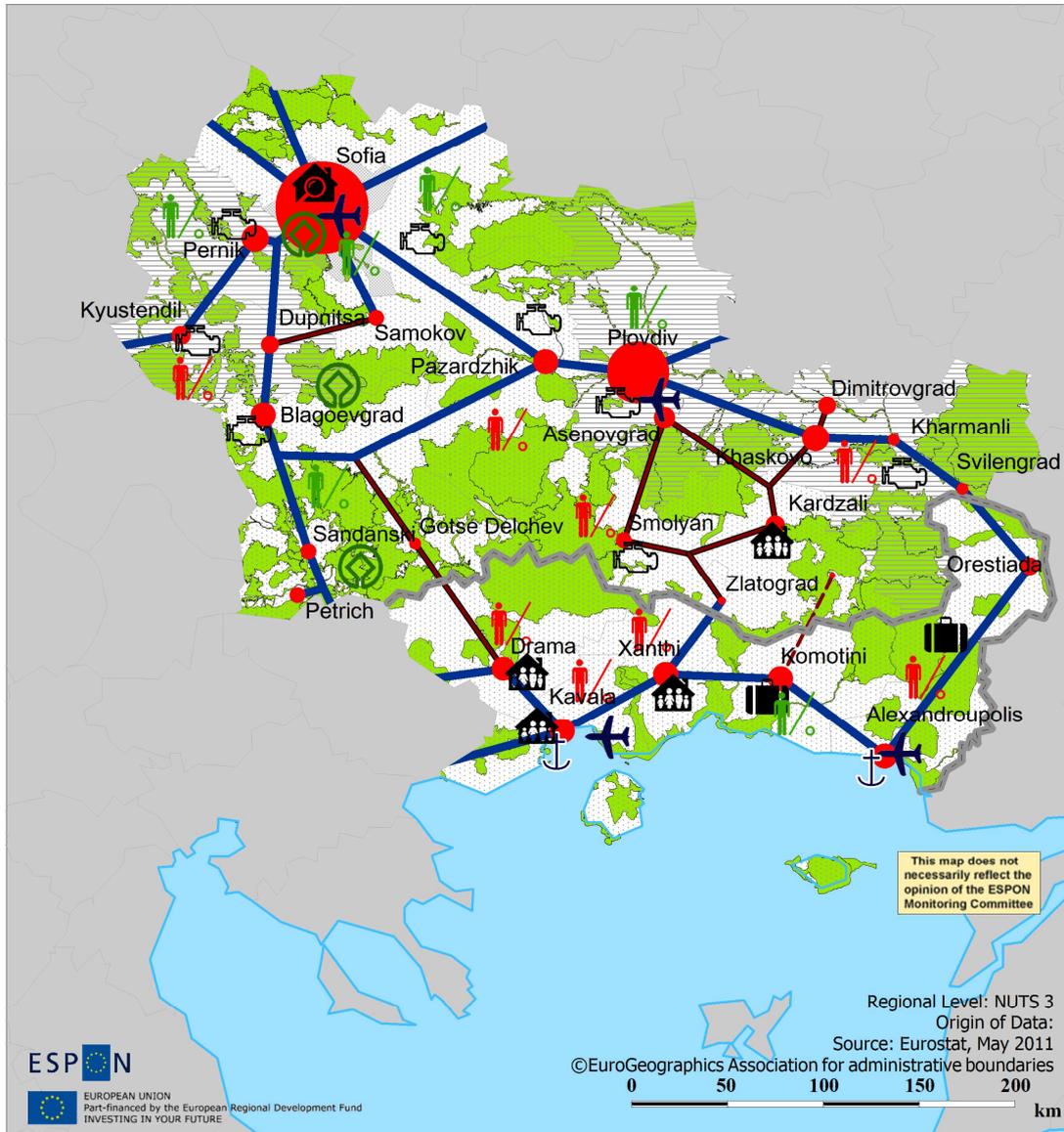
Further steps

The analysis and work realised during ULYSSES project could be considered as a starting point for further research and cross-border cooperation in order to have a wider knowledge of the CBA. The final goal is to support the economic and social development of the CBA as well as promoting and boosting the WCP, as a visible and regarded body.

Although some data gaps were faced, a general overview of the CBA has been reached. Nevertheless, analysis regarding NUTS4 (municipalities) would be highly interesting considering the characteristics of the population distribution. More specific and place-based strategies could be proposed if those data exist.

Political factors and the existence of specific regional interests play a significant determining role. The identification of shared issues and needs and a common vision for the CBA are considered essential for the development of the entire area. The "Strategic Plan for the development of the Pyrenees" carried out by Navarra, was cited as an interesting and well documented experience that could be considered as an example for a common diagnosis for the development of the Pyrenees. The "Strategy of the Pyrenees" (CTP, Generalitat de Catalunya 2005) could be also further developed and be used to produce the upcoming Cross-Border Cooperation Programme 2014-2020 in order to make possible the use of it to reach the objectives proposed to develop this zone. Adopting a pragmatic position by addressing first the most widely shared action lines becomes essential. This entails a rigorous selection of projects to be implemented in first place, looking at variables such as added value and measurable economic impacts by using reasonable resources.

3.3. Greece-Bulgaria CBA



Map 4 Territorial synthesis of Greece-Bulgaria CBA

Key Analysis / Diagnosis

The Greece – Bulgaria CBA is considered a region distanced from the central parts of Europe, facing population reduction, over-ageing and low fertility rates. Although fertility rate gradually increases over the latest decade, its value appears significantly lower than the corresponding EU27 rate. Population distribution shows strong disparities, with higher population densities near urban conglomerates. Excluding Sofia the CBA's population density almost halves, being at levels considerably lower than the national and EU27 mean values. Along the well-established transportation axes, the border seems to attract population and economic activities, affecting population density and growth patterns. On the contrary, newly opened crossings do not seem to affect borderline settlements.

Over the years, the demographic primacy of Sofia appears to increase, although the CBA exhibits a rather polycentric pattern in its population distribution. In parallel, the economic primacy of Sofia over the remaining CBA is weak to moderate, suggesting a more polycentric economic development over the cross-border territory. Excluding Sofia from the analysis, the urban system appears even more polycentric, with Plovdiv excelling a limited and gradually decreasing with time primacy, in terms of population and GDP.

Population density decreases over the latest decade, due to strong depopulation, although the CBA may still be characterised as a 'strongly rural area'. This is mostly due to the impact of Sofia. Excluding the Bulgaria capital, the status of urban influence in the CBA is changed from high into low. Over the latest decade a gradual increase in urbanism has occurred in the CBA, mostly shown by the sharp decrease of population employed in the primary sector and the respective GVA produced. This 'urbanisation' tendency of the CBA is also accompanied by a subsequent transformation of agricultural areas into artificial areas. The exclusion of Sofia reduces slightly the urban nature of the CBA.

The accessibility and connectivity infrastructure has improved in the CBA during the latest years, especially through the construction of motorways and the expansion of airports. However, more developments in the cross-border transportation infrastructure are needed to integrate CBA's economy and improve its performance, especially at the lower accessibility group consisting of the Anatoliki Makedonia, Thraki areas, together with Smolyan and Kardzhali.

In 2008, the GDP of Greece-Bulgaria CBA worth 25.8 bn euro, with a significant contribution from Sofia (42.9%). Over the last decade it was recorded an annual GDP growth rate of 10.9% on average, which excluding Sofia falls to 7.4%. Significant disparities exist in terms of the convergence dynamism, as the Bulgarian sector exhibits a steady catching-up behaviour, while the Greek areas are characterized by a slow converging pattern. Employment in the CBA seems distributed rather evenly among all economic activities, exhibiting a marginal annual rise over the last decade. The exclusion of Sofia produced an almost similar result. The increase seems to be attributed to the construction and the financial and real estate sectors. However, trade, tourism and transport are the main economic sectors supporting local economy within the CBA. The reduction in the employment in the primary sectors is apparent. On the other hand, construction, public administration services and tourism increased their shares over the last decade.

Social cohesion indicators, such as long-term and youth unemployment rates are generally higher than the corresponding average EU27 values, and only infant mortality seems comparable to the EU27 standard. Mean unemployment rate (10.8%) for the year 2010 appeared higher than the national Bulgarian value (10.2%), but lower compared to the Greek corresponding rate (12.5%). Long-term unemployment (3.17%) was comparable to the national rates of both countries, while youth unemployment (29.2%) was comparable to the EU27 and the national Bulgarian values. The population at risk of poverty reached almost 20% in the Greece-Bulgaria CBA, with increased rates in Anatoliki Makedonia, Thraki (25.4%) and Yuzhen tsentralen (22.6%). This value is comparable to the corresponding national values for Bulgaria (21.4%) and Greece (20.1%). All social cohesion indicators gradually improved during the 1997-2008 period, but thereafter and all indicators degraded sharply due to the global financial crisis, returning back to the 1997 levels.

The area lacks of investments in the R&D sector, while appears as rather sensitive to climate change and environmental risks. Overall, area's poor economic performance seems related to

its low centrality, the exaggerated public administration sector, the low R&D investments and the limited demographic dynamism.

Most relevant challenges and opportunities

The main future challenges for the Greece-Bulgaria CBA were explored, following the thematic topics covered by ULYSSES as demographic change, polycentric development, urban-rural relationship, accessibility and connectivity and Lisbon and Gothenburg strategies.

In terms of demographic changes the challenges identified in the CBA were to retain the existing favourable demographic trends, (e.g., the increased fertility rates in all NUTS 3 areas), and to reverse the negative demographic trends, as population ageing and rural depopulation.

The CBA should preserve its balanced and polycentric population distribution throughout its space by promoting territorial cohesion and encouraging territorial competitiveness, especially at the near-border areas. An urban network of centres located on an east-to-west orientation (Blagoevgrad and Haskovo in Bulgaria and Kavala, Xanthi, Komotini and Alexandroupolis in Greece) could be better served by the development of an internal secondary medium-sized cluster comprised of Petrich, Smolyan, Kardzhali, Svilengrad, Drama, Stavroupolis and Orestias.

The rural and sparsely-populated character of the area should be preserved placing efforts to achieve urban-rural synergies and to integrate the development of small and medium-sized cities within the rural space in the CBA. Primary production sector should be supported and the flux of people from villages to cities should be reversed, especially at the rural near-border areas, in both Greece and Bulgaria.

The improvement of cross-border transport connectivity through the construction of the planned motorway axes could reduce the distances for access in goods and services and allow the better integration of the labour market. In parallel, the upgrading of the existing railway network and its connection to the ports of Alexandroupolis and Kavala could stimulate growth in the CBA creating new potentials. The telecommunication network in the CBA should be improved and the IT should be promoted to encourage more flexible work patterns.

The protection and exploitation of the common water and forest resources constitute the main priorities for cross-border cooperation. Cultural and educational collaboration could also stimulate cross-border exchange. There is a need to facilitate the better utilisation of local development potentials, and to promote education, R&D and innovation within the CBA. The bilateral inter-firm cooperation in the quest for new markets and the integration of the labour market within the CBA could promote a more balanced economic development. The CBA should confront the present economic restructuring, leading to the increased role of private sector, in order to reduce the existing spatial economic disparities. Especially at the Greek part, the present and future reduction in construction and public administration sectors should be counterbalanced by investments in tourism, renewable energy and 'experience farming'. Tertiary education attainment levels should be improved in all NUTS 2 regions of the CBA and cross-border collaboration between universities and research centres should be promoted.

Finally, the CBA is confronted with the need to successfully mitigate the potential environmental and climate change impacts, especially at its coastal part, and promote regional adaptation strategies. In terms of cross-border governance and institutional framework, the main challenge is the increase of cross-border cooperation, aiming towards a more balanced territorial development.

Proposed Strategies

For demographic improvement, it seems important to exercise policies to improve family potentials by improving the family childcare facilities at the urban centres of the CBA, to introduce flexible work forms using new technologies and to enhance cross-border health care covering especially the borderline area. The introduction of young people into the labour market through full-time, part-time and self-employment should be encouraged, especially at the rural and more remote parts of the CBA.

Polycentric development in the CBA could be promoted by reinforcing its existing balanced structure through the quality of life improvements in small and medium-sized cities of the territory. The transport infrastructure and the public networks between these small and medium-sized cities should be improved. Cross-border cooperation could increase the flux of products through the main perpendicular to the border transportation axes, linking urban centres from the Mediterranean to the Balkans and vice versa.

Rural areas could be revitalised by promoting local and traditional farm products, organic farming and eco-tourism. Mountainous and semi-mountainous areas should gain their energy independence, focusing on renewable energy production, through either solar parks or wind farms. The sustainable forest management and the agricultural production of energy crops could improve the performance of the primary sector in employment and GVA.

In spite of the low inter-connection level of the CBA, the passage of the Trans-European road networks, and the passage of the Trans-European natural gas network, could advance and reinforce the role of the CBA, offering greater opportunities for economic and social mobilisation and development. Investments in the improvement and expansion of the telecommunication network could foster cross-border business cooperation and allow the creation of multi-sectoral information networks employing modern technology.

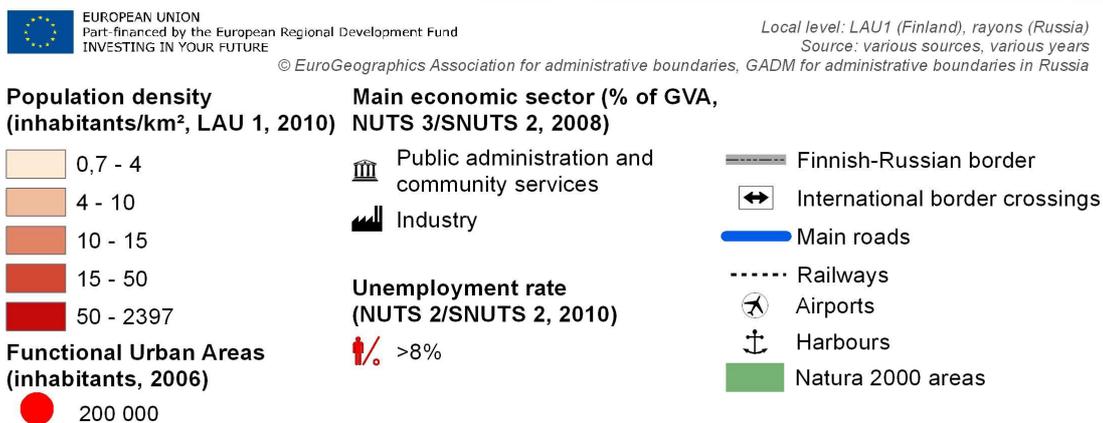
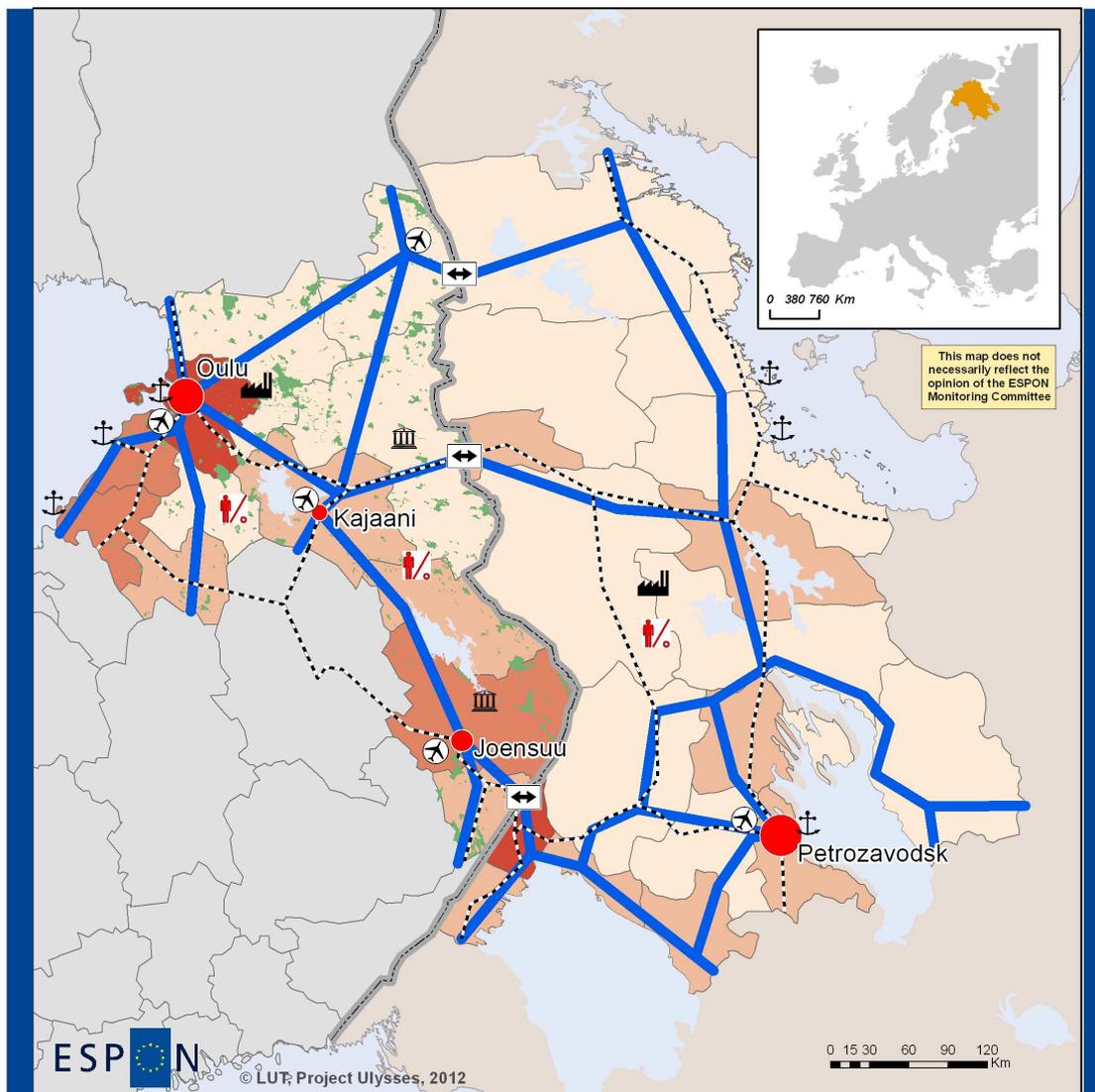
Cross-border trade and the provision of services should be intensified, obstacles in the legal workforce mobility should be removed, labour market legislation over the CBA should be gradually harmonised and cross-border exchanges in the field of research, education and vocational training should be promoted. Cross-border health care provisions should be introduced for the citizens living at the border areas.

All economic activities especially at the rural and environmentally-sensitive CBA parts should diminish their 'environmental footprint', intensive agriculture, forestry and mass tourism should be penalised and living quality standards should be harmonised over the CBA. Climate change risks as water shortage, forest fires, floods and animal stock diseases should be confronted in an integrated and combined manner involving authorities from both sides of the border. Local traditions and cultural exchanges should be promoted.

Further Steps

The area currently performs in a transitional state, as Bulgaria entered the EU only in 2007, and therefore the border changes its status from a 'barrier-type' into an 'interface-type'. This transition needs closer and continuous monitoring from both sides of the border, to enhance collaboration and accelerate wherever possible the transition processes. Harmonisation of the CBA territory is an inevitable procedure, leading ultimately to the adaptation in salaries, the prices of goods and services and the integration of local markets in the broader CBA economy. Local Joint Observatories could be established to monitor the harmonisation and adaptation processes and provide 'know-how' to both parts. This way local data could be better integrated in the national and international (ESPON, EUROSTAT, OECD) databases.

3.4. Euregio Karelia



Map 5 Territorial synthesis of Euregio Karelia

Key analysis / diagnosis

Population change has been negative in Euregio Karelia in the first half of 2010. Euregio Karelia has also suffered of a decline in migration rates. Population decline has, however,

been less severe in the second half of 2010, and total fertility rate has shown a gradual improvement. Demographic performance has varied widely between the regions of Euregio Karelia and the only region with a positive total population change, natural change and net migration has been Northern Ostrobothnia that is to most parts located on the western border of Finland. Finnish regions of Euregio Karelia, located in the proximity of the Finnish-Russian border have been attracting migrants from Russia.

Euregio Karelia has a polycentric urban structure that is not dominated by one big city. The CBA has a small amount of FUAs and a small share of FUA inhabitants. FUAs of the CBA have been attracting population more than rural regions and population has been increasing in all the FUAs (except for Kajaani). In almost all the FUAs dominating economic activity was traditional manufacturing. There are great differences in GDP between the FUAs, and the largest differences are observed between the Finnish and Russian FUAs.

Euregio Karelia is in the European context classified as a CBA with low urban influence and low human intervention. The share of agricultural areas in Euregio Karelia is significantly lower than the European average. This is explained by the large share of forests in the total area. Urbanisation of agricultural areas has been below ESPON average in Euregio Karelia. Concerning economy and employment in rural areas, there has been an increase in GVA by agriculture and fishing, but the share of those fields of economy in total GVA has been decreasing. Accordingly there has been a decline in the share of employment in the field in general employment statistics. This tendency has been less severe in border regions.

Euregio Karelia is located far from central European road and rail infrastructure and thus has low accessibility and connectivity. Despite its remote location, air connections make the CBA better accessible to the European countries. In comparison with European average, multimodal accessibility (by road, rail and air) of Euregio Karelia has been declining. Accessibility within the CBA is very much affected by the external border with a passport control and customs checks. There are three international border crossing points in the territory of Euregio Karelia. Cross-border traffic has been increasing steadily and the border crossing infrastructure has been developed. Between 2007 and 2011 the number of border crossings increased at an annual rate of 7.8 %. Thus the connectivity between the Finnish and Russian regions of the CBA is increasing. Finnish regions of the CBA have a high "virtual" connectivity and the share of households with internet connection has been increasing also in the Russian part of Euregio Karelia.

Compared to the leading region (London) Northern Ostrobothnia is classified as a middle income region, while both North Karelia and Kainuu are identified as less developed regions and the Republic of Karelia as a very laggard region. Growth of GDP has been strong in the Republic. There are large differences in GDP per capita between the Finnish and Russian regions. The Finnish-Russian border has had positive effects on trade in the cities located in close proximity of the border. There is a strong variance between regions concerning performance in R&D and social cohesion, Eastern Finland and the Republic of Karelia performing the weakest.

Sensitivities to climate change are low in Euregio Karelia. Environmental issues pose a great challenge for the CBA. Low waste water treatment capacity of the Republic of Karelia affects the whole CBA. When compared to other European countries, there is a low share of Natura 2000 areas in the CBA. Wind energy potential, on the contrary, is above the European average in all the regions of the CBA.

In the European context Euregio Karelia is physically far away from Central Europe, but it scores relatively high in terms of research and development and has low levels of pollution. In terms of economic development and urbanisation Euregio Karelia is below European average and there are significant differences between performances of the regions. Only the Finnish regions were included in the analysis.

Euregio Karelia is located on the EU external border, which creates a relatively difficult structural context for cross-border governance and institutionalized spatial planning. Cross-border cooperation does take place in Euregio Karelia in a multi-faceted and increasing way. Still, the difference to internal EU cooperation is very obvious and a spatial planning or a transport policy has not been institutionalized on a cross-border level yet.

Most relevant challenges and opportunities

We have found two thematically cross-cutting challenges that in our view have the strongest influence on future developments of Euregio Karelia. The first challenge is the EU external border and its direct and indirect influence on territorial dynamics and performance of the CBA. In comparison with the EU internal borders, the border between Finland and Russia continues to function as a barrier for the movement of people and goods. However, our study shows that during the 2000s the border between Finland and Russia has become a relevant factor influencing territorial development of the border regions. The border has affected migration patterns, accessibility within the CBA and economy and trade. These developments gradually influence, among others, population patterns and social welfare in the border regions. In addition, cross-border framework is a challenge when dealing with independent national or regional developments. For example environmental protection, such as waste water treatment capacity is weaker on the Russian side of Euregio Karelia, but environmental state, such as water pollution affects both sides of the border. All the "border effects" are subject to change depending on current EU policies. The first challenge is thus to pay attention to border effects and continue collaboration in spatial planning across the border.

The second key element affecting territorial development in Euregio Karelia is urban-rural relationship. In the European context Euregio Karelia has a relatively small amount of FUAs (only one FUA in the Republic of Karelia) and the share of FUA inhabitants is below the European average. On the contrary, there are large uninhabited or sparsely populated areas in the CBA and the population is ageing in the rural areas. The future spatial development in Euregio Karelia is very much dependent on how rural areas will develop in economic sense and will the population find employment in rural areas. At the moment rural areas are losing inhabitants and the share of traditional rural fields of activity is decreasing in general economy and employment statistics. Large rural areas are strong assets to Euregio Karelia when it comes to natural energy potentials, nature protection or sustainable tourism. New small businesses could arise to rural areas in connection with tourism development, organic farming and bio-fuel production. Rural areas require intensive environmental protection in order to prevent possible environmental problems from occurring. In an ideal situation urban and rural areas develop a relationship where they benefit and support each other.

Proposed strategies

Border as strength -strategy

This strategy aims at developing Euregio Karelia into an attractive and active cross-border area. Cross-border travelling is visa-free and trade and services in the border area foster. The development of small businesses and entrepreneurship is supported. Possible social problems are tackled with proactive social policy. Attention is paid to the safety and security of the border areas.

- Lobby visa-free travelling between EU and Russia.
- Improve infrastructure and accessibility and public transportation across the border by means of road, rail and air transportation.
- Lobby the local knowledge of the importance of Russia's WTO membership.
- Enhance the foundation of new firms and start-ups by creating a culture of entrepreneurship and by fostering a business-friendly environment in the border areas.
- Develop more efficient business services and promote systematic training of students in companies.
- Fight discriminations in the labour market and enhance employment opportunities for foreign employees (education, language training etc.).
- Enhance integration of immigrants in socio-spatial structures.

ECO-Karelia -strategy

In this strategy Euregio Karelia acts as a pioneer region in promoting sustainable development in the Northern cross-border areas. Environmental cooperation across the border is of utmost importance. New technologies are supported to develop rural areas into sustainable areas of nature protection, organic farming and bio-energy production. Sustainable tourism provides services both for local inhabitants and incoming tourists.

- Support the move towards a more intangible economy to reduce energy consumption.
- Support the development of new energy technologies and use of alternative energy systems such as wind energy and biomass. Support collaboration across the border in these fields.
- Enhance environmental protection and corporate responsibility in environmental issues.
- Enhance environmental, cultural and social quality of tourism to support local development and protect social and cultural identities and physical environment.

General strategies for Euregio Karelia

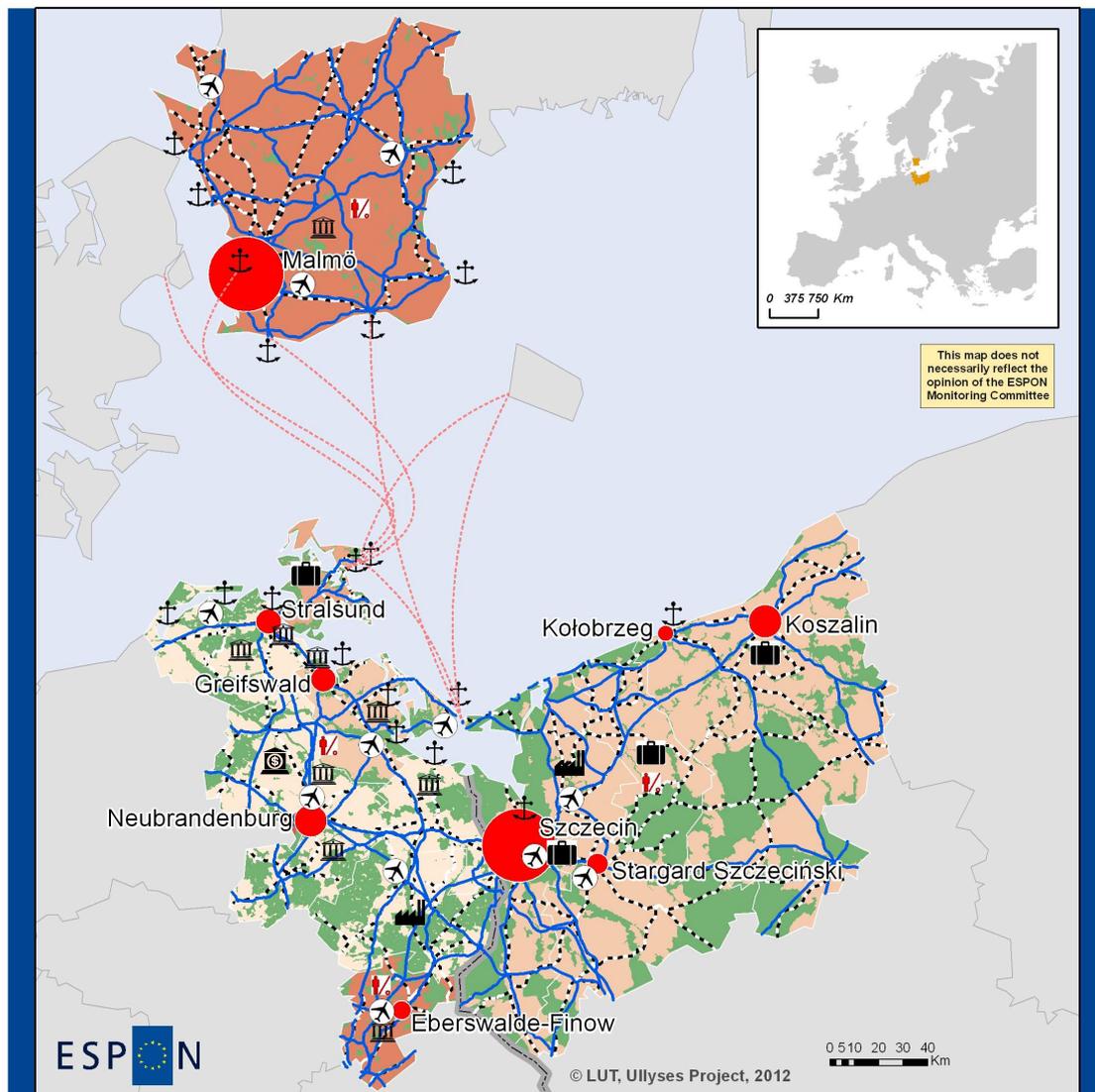
So far Euregio Karelia has functioned as a cooperation forum fostering collaborative projects and actions across the Finnish-Russian border. At the moment representatives of the Finnish and Russian regions are working on a common strategy to have a clearer vision for future orientations of the cooperation. Our study shows that Euregio Karelia has great territorial assets that it should value and foster and, on the hand, it has challenges that it should tackle across the border. Territorial assets and challenges should be formulated into (1) a vision of the CBA in a certain time frame, (2) a mission that sets the main object for the work of Euregio Karelia and (3) values that give qualitative attributes for the cooperation and for priorities of spatial planning in general. These values should be made visible for the general public and actors on both sides of the border should commit themselves to the common values. They can also be utilized when lobbying special characteristics and challenges of external border areas to EU officials.

As our study shows, the influence of the Finnish-Russian border on territorial development in Euregio Karelia is increasing. We therefore suggest the actors in Euregio Karelia to intensify cross-border collaboration in spatial planning. It is also important to continue studying territorial trends in the CBA and distribute information about the trends to local actors.

Further steps

SWOT analysis, where territorial challenges were identified in this study, was a scenario exercise, where Euregio Karelia was viewed from the perspective of possible policy orientations of the European Union. It is necessary to notice that Euregio Karelia is an external border area and part of the CBA is located outside the Union. EU policies naturally have influences also on neighbouring countries. These are either indirect influences of territorial changes in the Member States or direct effects of EU foreign policy; neighbourhood policy and strategic partnerships. These effects have been discussed in the analysis. Consideration of territorial developments and policy orientations in Russia, and their influence on Euregio Karelia was beyond the scope of this project, but they could be a subject to further analyses.

3.5. Euregion Pomerania



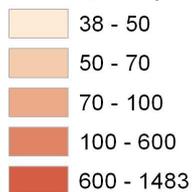
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Local level: NUTS 3, 2006

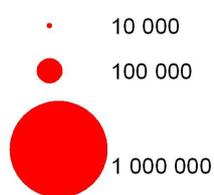
Source: various sources, various years

© EuroGeographics Association for administrative boundaries

Population density (inhabitants/km², NUTS 3, 2009)



Functional Urban Areas (inhabitants, 2006)



Main economic sector (% of GVA, NUTS 3, 2008)



Unemployment rate (NUTS 2, 2010)



Map 6

Territorial synthesis of Euregion Pomerania

Key analysis

Demographic performance in Euroregion Pomerania has varied widely between the regions. Population change has been positive in Barnim (Germany), Podregion Szczeciński (Poland) and Skåne län (Sweden), but negative in all the other regions (2000-2009). None of the regions of Euroregion Pomerania has a total fertility rate above the replacement level, and old age dependency ratio of the CBA is above the European average. Total population change of Euroregion Pomerania has, however, been improving; it was negative between 2000 and 2004, but positive between 2005 and 2009. Low scale analyses show that the border attracts population in the Polish-German border area, and possibly also in Skåne län in Sweden.

Euroregion Pomerania has a polycentric urban structure, more polycentric than the urban structure of ESPON space (EU27, Iceland, Liechtenstein, Norway and Switzerland) when considering the amount of population of Functional Urban Areas. Urban structure of the region is not dominated by one big city, but the size of the biggest FUA (Malmö in Sweden) is actually smaller than anticipated by the rank-size distribution of the FUAs. However, the CBA is more monocentric when considering GDP. Malmö is the leading city in terms of GDP and differences to small German and Polish FUAs are large. Only 51,5 % of the CBA's total population lives in FUAs and the average size of FUAs in Euroregion Pomerania is two thirds of the average size of FUAs in the ESPON countries. Dominating economic activity in the FUAs was service sector.

There are both large rural areas and densely populated urban areas in Euroregion Pomerania. ESPON 1.1.2 typology classifies eight regions of Euroregion Pomerania as regions with low urban influence and low human intervention and five regions with high urban influence and high human intervention. In general agricultural areas occupy large areas of the CBA. However, total area of agricultural land has been decreasing in all the regions of Euroregion Pomerania between 1990 and 2006. Biggest changes in urbanisation of agricultural land and amount of artificial land cover have taken place in the German city districts of the CBA. Production and employment by agriculture and fishing has decreased in all the regions of Euroregion Pomerania between 1997 and 2008.

Accessibility varies widely in Euroregion Pomerania. German regions are potentially easier to access by road than other regions of the CBA. Potential accessibility of the Polish regions by road is below the European average. Skåne län in Sweden was the most difficult region to access by road and rail, but it is has the highest accessibility by air. Skåne län has also the highest potential multimodal accessibility in Euroregion Pomerania. In general multimodal accessibility of Euroregion Pomerania is below the European average, and only two regions (Skåne län and Barnim) score higher than European regions in average. Internet accessibility has been increasing in all the regions.

Performance of Euroregion Pomerania concerning objectives of Lisbon / Europe 2020 and Gothenburg strategies was studied with selected indicators. Disparities in GDP per capita have been growing in Euroregion Pomerania between 1997 and 2008. Compared to the leading European region in economic development (London) most of the regions of Euroregion Pomerania are growing less and thus diverging from the leader. Polish regions have been classified as slow catching-up regions. GVA has been increasing in Euroregion Pomerania at an annual rate of 3.6 %. The leading economic sector in the CBA in 2008 was public administration and community services. Total intramural R&D expenditure in Euroregion Pomerania was lower than EU average. Unemployment was well above the European average in 2010.

Euroregion Pomerania has a large share of Natura 2000 -areas and environmental protection has been progressing in the CBA. Sensitivities to climate change were low in Euroregion Pomerania compared to the European average. Soil sealing has been particularly high in the city regions of the CBA. Wind energy potential is well above national and European averages.

In the European context Euroregion Pomerania appears as follows. German city regions and the city of Szczecin have positive centrality values, while all the other regions had negative centrality values. Skåne län in Sweden is performing best in terms of demography, and it also received high scores for the R&D factor. The growth of GDP in Poland has been rapid and therefore the Polish regions of Euroregion Pomerania scored higher in the economic catching-up analysis than other regions of the CBA. Several regions scored high in the administrative centres -analysis that indicates of poor economic performance and importance

of the public sector. Regions in coastal areas of Euroregion Pomerania scored high in environment analysis, and are thus more sensitive to environmental risks related to climate change than other regions of the CBA.

The city of Szczecin is the only major city in the cross-border territory of north-west Poland and north-east Germany and therefore it plays an important role in cross-border regional development. In order to elaborate the vision of the city as a cross-border urban territory, the city has been actively developing the concept of 'Cross Border Metropolitan Region of Szczecin'. According to the research results of ULYSSES, development patterns of the city of Szczecin do not limit themselves to the territory of the city, but reach across regional borders and the German border area. Development priorities of the Cross Border Metropolitan Region of Szczecin (strengthening of international cooperation, protecting natural environment, supporting polycentric settlement network, improving transport and technical infrastructure, and boosting economic development) seem justified in the light of ULYSSES results.

Structural dimension of cross-border governance in Euroregion Pomerania is challenging. The CBA has a particular situation with a land border and a sea border that separate three national states with very different institutional settings and traditions. Cross-border cooperation is not only characterised by the trinational platform of the Euroregion of Pomerania, but also by further bi- and multi-lateral cooperation. In particular the Polish-German cooperation has been a prominent part of the Euroregion Pomerania activities, and a series of projects has been initiated.

Most relevant challenges and opportunities

We have found two thematically cross-cutting challenges that in our view have a great influence on the future developments of Euroregion Pomerania. The first one is the development of economy and creation of new jobs in the CBA. Unemployment, in particular youth unemployment is high in the CBA and employment in traditional sectors of economy (agriculture and industry) has been decreasing. Decrease in the share of production and employment has been especially high in the agricultural sector, and since Euroregion Pomerania is occupied by large agricultural areas, creation of new jobs in the rural areas is extremely important. GDP has been growing in all the regions of the Euroregion, but the growth has been low compared to the leading European regions. Polish and German parts of Euroregion Pomerania are facing a demographic challenge and it is necessary to influence demographic patterns; to attract new inhabitants and to prevent young people from leaving the area by creating new attractive work opportunities. In Skåne län, where demographic patterns have been positive, economic growth is important to ensure competitiveness of the region. Removal of EU restrictions on the movement of labour in 2011 now allows a creation of a cross-border labour market in the entire Euroregion. Cross-border cooperation offers possibilities for change of knowledge and experiences in the development of a knowledge based economy.

The second key element that will affect territorial development of Euroregion Pomerania is accessibility. The CBA is an important logistics hub with several ports by the Baltic Sea and a connection to the European inland waterways. Maritime passenger traffic has been decreasing after 2006 in all the ports of the Euroregion and cargo traffic experienced a radical decrease in 2008 because of the global economic crises. Besides maritime and inland waterway connections, the development of road and railroad connections to main European transport corridors is essential for the economic development of the CBA. Multimodal accessibility of Euroregion Pomerania is below the European average, except for two regions; Skåne län in Sweden that has good air connections and Barnim in Germany that is located next to Berlin and thus close to the main European road and rail connections. The development of connecting infrastructure within the CBA is equally important, because it enables cross-border commuting and leisure travel.

Proposed strategies

Ulysses study shows that Euroregion Pomerania has great territorial assets that it should value and foster and, on the other hand, it has challenges that it should tackle across the border. All of the strategies listed below necessitate cross-border collaboration; information

exchange, change of experience and best practices, common plans. As this study shows, the influence of the border on territorial development in Euroregion Pomerania is increasing. It is therefore important to continue collaboration and formulate a common development strategy for the Euroregion that would create a synergy effect among the partners. Euroregion Pomerania should serve as a 'cross-border competence' institution or structure that would participate in spatial planning activities in the CBA and possess up-to-date data on the territorial development of its national parts. A creation of a common database as e.g. Ørestat (Statistical database containing information about cross-border developments in Øresund region) is a worthy possibility.

Euroregion of entrepreneurship -strategy

This strategy is based on the idea that entrepreneurship and education are taken as the key concepts for developing Euroregion Pomerania into an active and creative cross-border area. Entrepreneurship is seen as a lifelong learning process and training for entrepreneurship starts already in the schools. Special attention is paid at quality and contents of education and vocational training to meet the actual market needs. Entrepreneurs get high-quality training and support. Inhabitants are encouraged to start new businesses. This strategy aims at creating new jobs in the CBA. New employment opportunities attract new (and returning) inhabitants, and offer perspective for life strategies for young people and families. Entrepreneurship is a true choice for people that are no longer employed by traditional fields of economy, such as industry. Cross-border cooperation is essential for this strategy, in order to change information of experiences and best practices, and to create businesses that serve the cross-border area and its needs. Cross-border incubation centres are an essential part of this work.

Investing in tourism

This strategy is based on the idea that tourism is a 'hard, serious business' and a real choice for boosting economic development. Euroregion Pomerania is occupied by large agricultural and green areas and it has an ideal location by the Baltic Sea. In this strategy tourism is considered a true option for the creation of new jobs in the CBA. Investments are made in tourism infrastructure and traffic infrastructure. The development of tourism is consistent and has a long-term perspective. Ecotourism is developed in the rural, agricultural areas. Health and leisure tourism flourishes among the population. Tourism development is based on local assets and joint Pomeranian heritage and a special attention is paid to environmental values and sustainability. Pomeranian tourism offers attractive niche products (e.g. historic trails, culinary trails, wreckage trails etc.). Possibilities offered by the cross-border connections are utilized and cross-border euroregional tourism brand is created.

All roads lead to Pomerania

This is a strategy to boost transport infrastructure development (incl. waterways, roads, rail) and thus accessibility of the CBA. Good level of accessibility serves economic development of the CBA and enables the tourism sector to grow. Attention is paid to cross-border connections between the national parts of the CBA. Commuting across the borders is easy and growing interaction between the inhabitants serves the creation of a cross-border social space. Public transport network is well-functioning and vehicles environmentally friendly. 'Low emissions' is the key concept.

Further steps

In order to study reasons behind the developments introduced by ULYSSES project a larger qualitative study should be carried out. One topic for further study is the influence of borders on local economic development. How do the border effect local economic development? How are small businesses developing in the border regions? Another topic for further study is the social space in the border areas. How are the cross-border area and the opportunities it offers utilized by local people?

3.6. Extremadura-Alentejo CBA

Key analysis / diagnosis

The key analysis here presented will be structured according to the thematic division established by the ULYSSES project: demography; polycentric development; urban-rural relationship; accessibility and connectivity; Lisbon/Europe 2020 and Gothenburg strategy objectives; and institutional analysis.

In demographic terms, according to the ESPON Demifer Project (ESPON 2010), the NUTS 2 of the Alentejo is considered an “ageing challenge region”, while the NUTS 2 of the Extremadura is considered a “challenge of labour force region”. This typology, which is based on age structure but also on growth rates, sheds some light on one of the major challenge these regions face on a demographic level: the difficulty to induce natural population growth or to attract population. But, although in the last decade the CBA as a whole has been witnessing a population growth rate that is close to stagnation, this general statement hides very different demographic realities.

A first aspect to consider are the uneven population dynamics. On the one hand, there are very different growth rates on each side of the border and, while the Portuguese part has been losing population, the Spanish has been growing slowly. On the other hand, there is also a tendency for the population growth to be very irregular at the local level: the LAU 1 /2 that concentrate around the major urban centres tend to grow, while many of the less densely populated municipalities face population stagnation or decrease. But the different demographic realities are not only related do the dynamics but area also expressed in the age structure. In fact, the ageing challenge is felt very differently at the local level and, once again, the more urban municipalities tend to concentrate a much larger share of young aged cohorts, while the remoter and more rural areas tend to have a large share of older cohorts.

A second aspect is that the border seems not to have a very significant impact on population growth. In fact, in the Spanish side of the border, many of the larger urban centres are located close to the border leading to a positive statistical relation between population growth and border distance. On the Portuguese side there is a negative relation, but it is not very significant.

A third aspect is that there seems to be a relatively high cross border commuting from the Alentejo to the Spanish side of the border. When considering the whole European Union, the commuting flow are still relatively small (in comparison to countries such as the USA or Japan), which further stressed this indicator as a sign of cross border integration.

In what concerns the polycentric development of the region, the main conclusion is that, from a European perspective this CBA, although being fairly polycentric, not only lacks hierarchy (meaning Functional Urban Areas with a considerable size), but also lacks an overall amount of FUA. In fact, the share of people that live in urban agglomerations that fall under the category of Functional Urban Areas is very small and there are only seven FUA –Badajoz, Cáceres, Mérida, Plasencia, Don Benito and Villanueva de la Serena on the Spanish side and Évora on the Portuguese one. But, when looking at national classifications of urban areas, there appears to be a fairly large amount of small urban agglomeration. So, essentially, it is possible to conclude that this region is characterised by a low amount of large urban areas that are evenly spaced throughout the territory, none of which exerts demographic or economic primacy, which is complemented by a large network of small urban areas.

Regarding the urban-rural relationship, this region is marked by a spatial layout that consists of a network of small urban areas that spreads out over a large, predominantly rural, territory. This predominantly rural character of this CBA can be considered a structuring element and is well expressed in a set of indicators.

First, the region is market by a well preserved landscape in which there a many natural and semi-natural areas. The share of agricultural areas is also high, and these areas are often explored in extensive type of agricultural units, such as the dehesa-montado system. The significance of primary sector activities becomes also evident by its contribution to the

employment and Gross Value Added of the region, and by the high levels of productivity of this sector. The construction of the Alqueva dam might further contribute to the significance of the agriculture in this region by increasing the share of irrigated crops. But, generally speaking, this high productivity tends to be linked to a mechanised and standardised production process which contrasts with the traditional rural lifestyles and rhythms.

Second, there seems to be a significant threat to the more rural lifestyles, as population out of the zone of influence of the larger urban areas has been witnessing a steady decline in the last decade. But, in contrast, the artificial land-uptake has been occurring at a low pace, meaning that the increase of the overall human intervention on the territories and the loss of rural traits that tend to characterise it, are not a very significant tendency.

In what concerns the communication and transport infrastructures and services of this CBA, their overall provision is well below the ESPON or the national averages. In fact, the lack of critical mass in these kind of territories poses a major challenge for developing mobility patterns that do not depend on private and motorized means of transportation, as the reduced economic viability of public transport tends to lead to the suppression of courses and the increase in fares. The low densities also mean that services and goods might often only make sense at a higher regional scale than the one at which they are needed by small population pockets. This, together with the on-going demographic decline in many parts of the region, further accentuates the need to find intelligent ways of connecting the users with the services and goods they depend upon.

On a broader scale, the (eventual) development of the high-speed railway could be a major asset for the region, as it would increase the connection between regional poles (such as Sines and Badajoz), increase the connection of these poles with other regions and put the region in a strategic position, halfway between Lisbon and Madrid.

Regarding the Lisbon/Europe 2020 strategy objectives, the region is also in an unfavourable position. The first aspect to consider is that the economic situation of these regions is fragile, especially on the Portuguese side of the border. On one hand, all of the NUTS 3 are well below the leading region in terms of GDP per capita on the European level. On the other hand many of them have been diverging, or converging very slowly, from the leading region over the last decade and there are high economic disparities, especially between the two sides of the border. The second aspect is that most of the regions' social cohesion indicators are much worse than the respective national averages. This is especially worrying for the Extremadura, given that Spain already tends to have high values in these kind of indicators (youth unemployment, at risk of poverty after social transfers, etc.). The third is that the public sector plays a greater role in the CBA than in the rest of the countries. The fourth is that the regions' capacity to invest in research, development and innovation is very limited and is reflecting itself on the outputs (e.g. low amount of patent applications). This situation is further stressed by the fact that the factor analysis of this CBA shows that its NUTS 3 perform badly in the main factors that explain good economic performance in Europe. For example, all the NUTS 3 fall below the 20% percentile in the factor that is related to central location and a strong service sector, which has the biggest weight when explaining a region's GDP per capita. In the factor that expresses R&D&I, most of the Portuguese regions fall below the 50% percentile, while the Spanish ones fall below the 80%. The regions also keep a relatively large weight of the public sector. And, as can be seen in the factor analysis, a large weight of the public sector is often related to depressed territories, as the public services are more evenly distributed among the territory therefore leading to their overrepresentation in a scenario of a dwindling private sector.

Regarding the Gothenburg strategy the region performs well. On the one hand, general indicators, such as ozone concentration, soil sealed areas, pollutant emission or share of natura 2000 areas all show favourable values. On the other hand, the economic and urban growth patterns seem to be able to keep a certain balance between economic goals, biodiversity and resource usage.

In general terms the cross-border cooperation in this region is high, which is facilitated by structural aspects. In structural terms, the overall political and the planning systems of the two countries show some similarities, and the languages allow semi-communication (reciprocal understanding without being fluent in the respective language). From a morphological point of view, the border does also not represent a major barrier. In terms of the activities that have been developed, there is a large experience in cross border cooperation. There have been

several EU programme based projects, currently in particular the INTERREG platform POCTEP, as well as EGTCs and a high amount of city-networks and interregional cooperation initiatives. From an informational point of view, there is an interactive cartography that is accessible online (www.ideotalex.eu) and a joint Atlas (OTALEX). Concerning a common strategic framework, the recent strategic document Euroace 2020 not only gives a comprehensive territorial analysis of the cross-border setting but also defines strategic guidelines and objectives that are ambitious. But one has to admit that this document is the outcome of an outsourced study and has to be concretised and implemented in a political way.

Given this institutional context, the next logic step would be towards a joint transport and territorial development strategy. One could also aim at internalising some of the knowledge and network capital that is being built by the successive cross-border cooperation projects by giving it more durable institutional arrangements, namely in the context of the already existing bodies with legal personality, such as the Euroace.

Most relevant challenges and opportunities

Portugal and, to a lesser extent, Spain are normally understood as part of the periphery of the European Union, in a geographical as well as a political and economic sense. The border between these two countries is, on its turn, a peripheral region in each of the countries, given that it is relatively far from capital cities as well as the more densely populated coasts. In the European context, the cross border region of the Alentejo-Extremadura can therefore be understood as a “periphery of a periphery”.

This peripheral location is a crucial element which shapes this regions’ behaviour in many of the analysed dimensions manifesting itself in an overall low density in human settlements, infrastructures and economic activities and a poor capacity in achieving the Lisbon/Europe 2020. This difficulty becomes evident when looking, for example, at the evolution of standard well-being indicators, which show a low GDP per capita, poor potential accessibility, poor social cohesion, and a tendency for further diverging from the leading region in the GDP growth.

The demographic challenge that affects this region is also a strong menace, especially given its already very low densities. Some of the predictable challenges of this situation include: the satisfaction of an increasing demand of services from an ageing population that is scattered on a large area; the maintenance of general public infrastructures (roads, water, schools, etc.); the viability of ecosystems that rely on human activities; the struggle of economic sectors that could suffer from factors related to an increasing remoteness, such as growing distances to markets, decreasing economies of scale or scarcity of labour force.

But, on a different note, the low densities in population and human activities have also led to a well preserved set of resources whose potential might be explored in the future. For example, the low artificial land uptake means that there is a large share of natural and semi-natural areas, that urban sprawl is not a major issue and that the conflict between different land uses has been kept to a minimum (e.g. agricultural vs. urban land use, economic activities vs. environmental protection areas, etc.). The region also keeps a very good record in the Gothenburg strategy indicators, by having low ozone concentration, low pollutant emission or preserving sustainable ways of exploring resources.

The strategic position of Elvas – Badajoz halfway between Madrid and some major poles in Portugal, such as Lisbon or the Silves Seaport, is also an important point to consider, given the potential it arises from a logistical and developmental point of view.

Finally the dehesa/montado agro-silvo-pastoral system can also be considered a significant asset of this region. This system, which strongly shapes the region’s landscape in many parts, guarantees high levels of biodiversity and a sustainable use of resources therefore playing a key role in combining economic and environmental concerns.

Proposed strategies

Although individual strategic guidelines have been developed for each theme under analysis, here only the some of the most important aspects of these strategies have been focused.

The first major strategy tries to deal with the difficulty in dealing with an ageing and stationary population and its consequences. To deal with this situation an intervention on several levels should be envisaged. First, **mitigation strategies** could be adopted to counter this tendency. These strategies could, for example, include the adaptation of immigrant friendly policies or the promotion of pro-fecundity measures in the areas where the share of women in fertile age is still significant. Second, **adaptation strategies could be adopted** to try to deal as best as possible with this situation. This could include planning for the adaptive reuse of many of the childcare facilities and services that will become unnecessary, namely for the elderly. But also, and since infrastructures and services for the elderly will have to be expanded to some degree, it could be interesting to develop them even further and linking them to leisure, wellbeing and tourism in order to attract retirees of other regions or countries.

The second strategy for the region, which is related to the previous one but exceeds its domain, is to try to **establish functional complementarities in services and infrastructures** of the small towns and urban centres and **establish intelligent ways to make them available for the population in the low density areas**. Essentially, mid-sized towns could function as centres of provision of services of general interest, which are thereafter extended to the surrounding low density territories through mobile means and by further adoption of computer mediated communication. In this context cross border complementarities could play an important role (as is already the case in health-care services in this CBA). This strategy could also be of great use if tourism and/or residential functions in rural areas are to be pursued, since this would be a way to allow the provision of amenities that are normally associated with an urban lifestyle.

The third strategy is to **take advantage of the dehesa/montado** as a strategic asset in the promotion of regional products and in creating value added by taking advantage of the increasing search for quality and sustainable products, namely in tourism and agriculture. A cornerstone of this strategy could be the integration of shared products across de border and the establishment of the dehesa/montado as in internationally recognised brand standing for quality, sustainability and authenticity. Regarding tourism, this region has excellent conditions for the tourist flows that occur beyond the mainstream 'see and sun' destinations in search for more authentic experiences. In this context, the integration of shared tourism products into larger networks and/or tour packages should be considered as a way to gain scale. Regarding products from the primary sector, this CBA seems to be able to make products that are produced according to the traditional practices in the dehesa/montado system and there already is a considerable amount of PDOs and PGIs that are linked to this kind of production. But, in parallel to what has been stated on tourism, it would be nonetheless useful to further increase the visibility of these products. Both, agriculture and tourism, could also benefit from further exploiting the potential of the Alqueva dam.

A fourth strategy could be to **take advantage of the strategic position of the CBA halfway on Lisbon and Sines – Madrid axis**, preparing for the eventual construction of the high speed train connections. This could namely be done by focussing on the joint planning of logistical activities, the attraction of external investment, but also on the eventual increase in meeting and other event related activities. In this context the integration of the two major urban agglomerations that are located close to each other in the border could be an important element: Elvas and Badajoz. The promotion of joint strategies to take full advantage of this strategic position could namely be done using as a framework such as the concept of a **Elvas – Badajoz Eurocity**, with some degree of integration regarding spatial planning, transportation and service and facility provision. This strategy could also be important considering the urban structure of the more remote border regions, which would benefit from the creation of a stronger development pole.

A fifth strategy could be to focus on a **cross-border regional knowledge management**. A strategy in this area could be based on three pillars. The first one would be to strengthen the joint knowledge pool in the fields that are considered strategic for these regions, such as tourism, agriculture or renewable energy sources. The second one would be the establishment of a network approach in order to obtain cross-border cluster effects. This could mean exploring the complementarities in the scientific offer of the higher education organizations, promote joint programs or master degrees and/or facilitate student exchange,

namely in subjects most relevant for the regional economy. The third would be related to knowledge dissemination and management. As the relevant knowledge for a particular sector or action tends to be widely distributed, what becomes crucial is to know what is available and how to adapt it to the specific needs of the territory. This means that a competence screening instrument could be promoted, namely by establishing an internet platform (e.g. portal) in order to facilitate the supply of goods, services, competences or workers whenever needed.

Finally, a greater effort to **coordinate environmental sustainability** in the CBA could be made. This does namely be done by integrating policies on the establishment and management of environmental protected areas (often the environmental protection areas still follow administrative boundaries in the border region) and by joint natural resource management, such as water.

Further steps

Although there is a growing amount of information available, there still are major shortcomings in understanding the cross-border realities in this region. First, there is not much data available on cross-border flows of goods, people and information. It would therefore be interesting to go deeper in this aspect, by understanding the integration of regional markets or the significance, direction and motivation of cross-border commuting, namely to see if it plays an important role in mitigating international labour market asymmetries and, if so, whether the further integration of the transport systems would be justified. The urban-rural relationship at a cross border level could also be object of further study, specifically to understand if the urban areas on one side of the border are being used for service provision or as regional markets for rural areas on the other side of the border.

Second, a more localised and spatial approach to cross-border realities would also be desirable. An approach based on large territorial units, such as the NUTS 3, might contribute for perceiving the relative position of the CBA in the national and European contexts but it says little about the concrete border realities and limits the development of joint spatial development strategies.

Third, and linked to a more localised and spatial approach, there could also be deeper study on how to facilitate cross-border joint service and infrastructure provision to limit redundancies. This could namely be done by analysing the extent, reach and nature of existing protocols (such as the ones that exist for the use of the maternity in Badajoz by users in the border region of the Alentejo) and developing a benchmarking strategy.

3.7. Recurrent strategies for enhanced cross-border cooperation

The challenges and opportunities posed by the current status, have justified the development of several policy options in liaison with the concerned stakeholders from every CBA. The ways policy options are formulated vary across the addressed CBA: Policy options for Upper Rhine and Karelia are grouped under attractive brand names that comprise measures that address different policy domains (Silicon Rhine Valley, Polycentricity – decentralised concentration and Trademark Upper Rhine in Upper Rhine and Border as strength Strategy and Eco-Karelia strategy in Karelia). Policy options for Working Community of the Pyrenees, Greece-Bulgaria and Extremadura-Alentejo are organised according to the topic addressed (demography, urban-rural relationship, etc.). In addition, policy options are grouped under mitigation strategies and adaptation strategies in the case of Extremadura-Alentejo.

Despite the different realities across and within the six CBAs under analysis, they are all facing common challenges such as depopulation of rural areas, ageing, concentration of population in largest urban areas, increasing immigration in urban areas, etc. Besides this, they all have to strengthen their position in a globalised context, which lies e.g. in improving performance in certain variables related to the innovation economy or enhancing polycentric structure. A closer look onto the policy options suggested for each CBA reveals several elements that are common to all of them:

Building a common vision for the CBA

The importance of building a common vision of the CBA is present in the formulation of policy options by the majority of the MTA. Building this common vision is accompanied by marketing initiatives in certain cases. In the case of Upper Rhine, a common vision of the CBA is pursued under the name of Silicon Rhine Valley and the adoption of a marketing strategy envisaged not only for identity building (Trademark Upper Rhine strategy) but also to foster attractiveness of the area. Eco-Karelia strategy is oriented to make Karelia a pioneer region in promoting sustainable development in the Northern cross-border areas. The common strategy on which representatives of the Finnish and Russian regions are working on is another example of the importance of having a clearer vision for future orientations and cooperation. In the case of the Working Community of the Pyrenees, a shared strategic vision of the area and the establishment of common strategic territorial objectives are considered highly relevant. Taking up the "Strategy of the Pyrenees" and reaching certain agreements to be adopted by the upcoming 2014-2020 Operative Programme becomes essential according to the concerned stakeholders. Policy options formulated by Extremadura Alentejo entail increasing search for quality products in particular in agriculture and tourism, beyond the mainstream "sun and sea" destination. Emphasis is placed in further increasing the visibility of these products and the Dehesa/montado system is suggested to be used as an umbrella marketing term.

Bringing stakeholders together around the common vision - combining policy domains

Border-as strength strategy in Karelia is a clear example of engaging stakeholder around a common vision. This strategy entails different policy domains in order to pursue its goals (e.g. lobby visa-free travelling between EU and Russia; enhance the foundation of new firms and start-ups by creating a culture of entrepreneurship; fight discriminations in the labour market and enhance employment opportunities for foreign employees, etc.). Silicon Rhine Valley also implies addressing not only economy and innovation issues, but also immigration (e.g. selective but substantial immigration of skilled workers), rural development (e.g. promotion of high-tech in well accessible rural areas) or education (intercultural exchange), etc.

Enhancing polycentricity

Enhancement of polycentricity is underlined by all the CBA as a way to avoid further concentration of activities and population in largest urban areas to the detriment of rural areas. Policy options in Upper Rhine address decentralised concentration as a way to enhance polycentric structure. By providing a dense network of settlements, the provision of goods and services in the whole region can be secured also in rural areas of the CBA by innovative and/or mobile provision of goods and services. Measures such as the connection of medium and small centres to nodes that give access to globalised markets and knowledge hubs (e.g. Barcelona MEGA) or restrictive policies aimed at preventing further concentration of population and activities in a limited number of cities are underlined by the Working Community of the Pyrenees. In this sense, micro-centralities concept is highlighted by the concerned stakeholders. The policy options in the Greece-Bulgaria CBA underline the importance of improving quality of life in small and medium-sized cities of the territory as well as enhancing the transport infrastructure and the public networks between these small and medium-sized cities. Those policy options suggest preserving the rural and scarcely populated character of the area by placing efforts to achieve urban-rural synergies and to integrate the development of small and medium sized cities with the rural space of the area. According to the analysis undertaken for Extremadura-Alentejo CBA, mid-sized towns could function as centres of provision of services of general interest, which are thereafter extended to the surrounding low density territories through mobile means and by further adoption of computer mediated communication. This strategy could also be of great use if tourism and/or residential function in rural areas are to be pursued, since this would be a way to allow the provision of amenities that are normally associated with an urban lifestyle. Enhancement of sustainable urban development together with public transport connections across the borders are outlined in the MTA for Pomerania.

Encouraging strengths, specialisation and complementarities

The CBA should build its vision and future on its strengths as sought by the Trademark Upper Rhine. In the enhancement of polycentricity, cross border and intra-border complementarities play an important role. A clear example is already the health-care services in the Extremadura-Alentejo CBA. Priority is given to coordination and cooperation rather than investments in physical infrastructures in the Upper Rhine CBA. Reinforcing complementarities among urban centres is regarded essential in the Working Community of the Pyrenees CBA, while expansion of the services and infrastructures to low density areas is seen as highly relevant. Functional complementarities in services and infrastructure of the small towns and urban centres and intelligent ways to make them available for the population in the low density areas are suggested by the policy options in the Extremadura-Alentejo CBA. Support to R&D activities, the development of new technologies, service sector and creative industries towards a more knowledge based economy in the case of Pomerania. This move towards a more intangible economy would in addition reduce energy consumption

Revitalising rural areas

Exploring business opportunities in rural areas is linked to (eco) tourism, leisure, wellbeing, renewable energies; promotion of local and traditional farm products, organic farming and retirement phenomena is underlined in the analysis undertaken in the majority of the CBAs. The possibility to gain their energy independence, focusing on renewable energy production, through either solar parks or wind farms is highlighted by the Greece-Bulgaria MTA. Sustainable forest management and the agricultural production of energy crops are mentioned as a way to improve the performance of the primary sector in employment and GVA. Emphasis is placed in joint marketing strategies of quality products in the case of Extremadura-Alentejo. Territorial contracts are mentioned by the Working Community of the Pyrenees MTA, as a potential tool to promote sustainable development and ensure survival of rural settings. Those kind of strategies oriented to revitalise rural areas should accompanied by other kind of policy measures such as housing, health, internet connectivity, accessibility and education. As far as the latter one is concerned, and as it has been highlighted by the Extremadura-Alentejo MTA, programmes and curricula with regional relevance should be stimulated in the higher education institutions, in order to provide qualified human resource and to allow for spill-over effects. Enhancing cross-border collaboration of rural areas and their small cities becomes essential, as highlighted by the Pomerania MTA.

3.8. Additional research needs within MTA areas

In general terms the results of the ULYSSES projects are seen as a starting point for joint activities of the CBA deepening the existing cooperation and making existing institutions durable. However, certain shortcomings have to be solved:

Firstly, a **more localised and place-based approach to cross-border realities** would be desirable according to the majority of the MTAs. NUTS 3 level appears to be too large to measure effects within the CBA and in certain cases involves units of uneven sizes (e.g. in Upper Rhine, French units compared to Swiss ones). An approach based on large territorial units might contribute for perceiving the relative position of the CBA in the national and European contexts but it says little about the concrete border realities and limits the development joint spatial development strategies.

Secondly, although there is a growing amount of information available, there still are major shortcomings in understanding cross-border realities in every CBA under analysis. The existence of **non-quantitative factors** (such as culture, landscape, warm summers, attractive cities, wine, etc.) playing a crucial role for the attractiveness of the region, is underlined by the Upper Rhine MTA. Data scarcity concerning cross-border flows of goods, people and information is stressed in the case of Extremadura-Alentejo. Data shortness concerning the urban network is emphasised in the case of the Working Community of the Pyrenees.

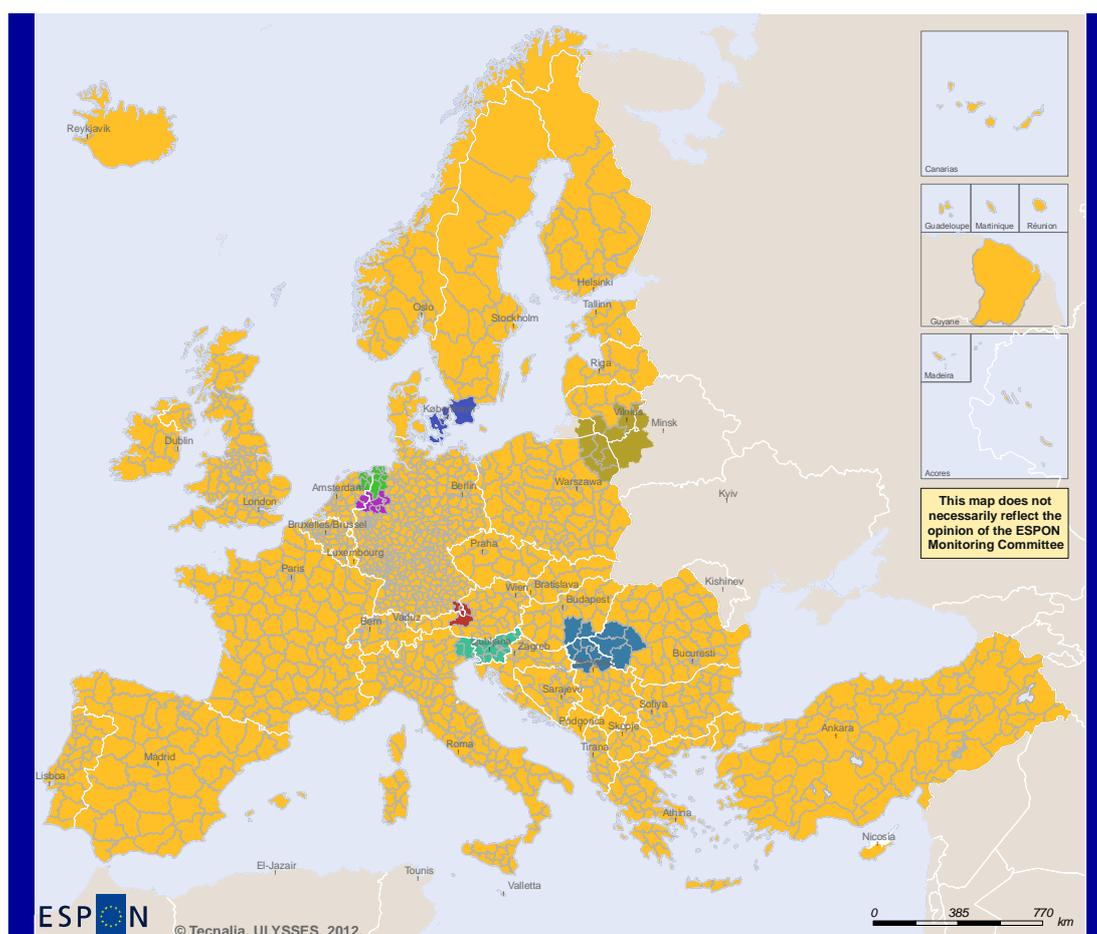
This leads to the identification of **additional topics** that could be further analysed such as the integration of regional markets, how small businesses are developing in the border regions or the significance, direction and motivation of cross-border commuting, namely to see if it plays an important role in mitigating international labour market asymmetries and, if so, whether the

further integration of transport systems would be justified. The urban-rural relationship at a cross border level could also be object of further study, specifically to understand if the urban areas on one side of the border are being used for service provision or as regional markets for rural areas on the other side of the border. How to facilitate cross-border joint services and infrastructure provision to limit redundancies is underlined by the Extremadura-Alentejo MTA. Analysing the extent, reach and nature of existing protocols (such as the ones that exist for the use of the maternity in Badajoz by users in the border region of the Alentejo) and developing a benchmarking strategy are some of the initiatives suggested for that purpose.

In the case of Greece-Bulgaria and Karelia, additional challenges to enhance cross-border collaboration are found. In the first case, and as Bulgaria entered the EU only in 2007, transition process has to be monitored and accelerated. Local Joint ESPON-AEBR observatories could be established to monitor the harmonisation and adaptation process (adaptation in salaries, the prices of goods and services and the integration of local markets in the broader CBA economy) and provide “know-how” to both parts. In the latter case, being an external border area poses some additional challenges. Consideration of territorial developments and policy orientations in Russia and their influence on Euregio Karelia could be a subject to further analysis.

4. Data fact sheets

DFS provide a shorter analysis of seven cross-border-areas based on quantitative data at NUTS 3 level (when available). Data from Europe-wide databases (essentially ESPON, EUROSTAT and 5th Cohesion Report databases) have been combined with specific data requests to the concerned stakeholders. Therefore, data for certain areas outside the EU27 (e.g. Province of Vojvodina in Serbia) could be obtained, while some data gaps in available databases have been filled with data provided by local and national statistics offices. Thus, the support of local stakeholders has been essential in order to firstly delimitate the area under analysis, and secondly access to certain data.



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Data Fact Sheet areas

- Duna-Koros-Maros-Tisza Euroregion
- Ems Dollart Region
- EuRegio Salzburg - Berchtesgadener Land - Traun
- Euregio
- Euroregiono NEMUNAS Marijampoles biuras
- Friuli-Venezia Giulia
- Oresund Committee

Map 7 Delimitation of Data Fact Sheet areas at NUTS 3 level

The themes addressed by the Data Fact Sheets (DFS) are those analysed by the MTA, by concentrating the analysis in the most relevant indicators. Availability of data at NUTS 3 level has been also taken into consideration when making the decision about the indicators to be

considered. Stakeholders were given the possibility to broaden the themes under analysis as far as data was provided. Consequently, tourism is analysed in DFS 3 and cross-border commuting is included in DFS 6. Besides this, different modes of transport are analysed in a separate way and further analysis concerning the evolution of population over 64 and population with social insurance obligation is provided in DFS 3.

The main findings of the DFS are described below. The full DFS are available in the Scientific Report.

4.1. Data Fact Sheet 1: Duna-Koros-Maros-Tisza Euroregion

This DFS covers the area along the borders among Hungary, Romania and Serbia.

The analysis shows negative population growth rates since 2002 in every region under this area but RO424 Timis. This is mainly caused by the negative natural population balance, which is not compensated by the net migration. The Romanian sector of the CBA is less old age dependant than the Hungarian and the Serbian sectors, while every region in the CBA is less old age and young age dependant than the EU average. Population living in FUAs as percentage of total population has not varied since 2001-2006.

Agricultural areas have decreased since 1990 in every Hungarian region, but not in RO42 Arad³. The share of agriculture and fishing both in GVA and employment has dropped significantly in the Romanian sector.

Multimodal potential accessibility has improved considerably in the Romanian sector over the period 2001-2006, especially in RO424 Timis, almost reaching ESPON average in 2006.

GDP in the Hungarian sector of the CBA is below the corresponding country average, while the opposite occurs in Romania. All in all, GDP has grown meaningfully in the whole area. RO424 Timis deserves a special mention, as its GDP is higher than the highest value in the Hungarian sector (HU333 Csongrád).

Concerning social cohesion, unemployment rates (all types, including long-term and youth unemployment) are lower in the Romanian side of the border, while infant mortality rate and population with tertiary education show a more positive picture in the Hungarian side.

Ozone concentration exceedances range from 1 to 4 days in every region and NATURA 2000 areas are particularly relevant in RO422 Caras Severin.

4.2. Data Fact Sheet 2: Ems Dollart Region

The Ems Dollart Region covers the Northerly European border region along the Dutch-German border, namely the most Northern part of the Netherlands and the North Western part of Germany.

Population has grown in Ems Dollart Region (1.3%) in the period analysed. Comparing both sectors of the CBA, the German side grew more than the Dutch one. Ammerland (DE946) and Noord-Drenthe (NL131) show the highest population growth rates in the Dutch and German sectors respectively. Population has decreased in NL111 Oost-Groningen, NL112 Delfzijl en omgeving, DE94A Friesland and DE94H Wittmund in the observed period. Each region behaves differently regarding population growth: in some cases the increase of population is mainly due to positive net migration (Ammerland DE946 and Noord-Drenthe NL131) while high natural increase is influencing significantly the population growth in DE948 Cloppenburg and NL113 Overig Groningen. The German sector of the Ems Dollart CBA is more old age dependant while the Dutch sector is more young age dependant.

The industry sector stands out in Ems-Dollart Region in terms of contribution to GVA. This sector is of great importance in the Dutch side, especially in Overig Groningen (NL113).

Potential multimodal accessibility is generally high in the entire CBA. Nonetheless, a decreasing trend is observed, especially in DE948 Cloppenburg (-4.3%) in the German part and NL133 Zuidwest-Drenthe (-12.8%) in the Dutch part. But still, the latter one remains one

³ No data available for Serbia

of the regions with highest potential multimodal accessibility in the Dutch sector of the CBA. This value decreases the most in DE948 Cloppenburg (-4.3%) in the German part, but still remains the highest in the CBA and over the ESPON average.

Concerning social cohesion, unemployment rates (all types, including long-term and youth unemployment) are higher in the German NUTS 2 regions than in the Dutch ones, but always below the German national and European average. Emden, Kreisfreie Stadt (DE942) shows the highest value regarding unemployment and youth unemployment (8.7% and 12,3%) in the German side. The highest rates in the Dutch area are found in Delfzijl en omgeving (5.8 and 18.4%).

Ozone concentration exceedances range from 3 to 10 days (DE94H Wittmund and DE949 Emsland) and NATURA 2000 areas are particularly relevant in DE942 Emden (22) and DE947 Aurich (21) in Germany and NL132 Zuidoost-Drenthe (16) in The Netherlands.

4.3. Data Fact Sheet 3: EuRegio Salzburg - Berchtesgadener Land - Traunstein

The Cross-Border Area (CBA) EuRegio Salzburg - Berchtesgadener Land - Traunstein is composed by the Austrian federal state of Salzburg (AT32) and the German administrative region of the Bayern-State called Oberbayern (D21) including the regions of Pinzgau-Pongau (AT322), Salzburg und Umgebung (AT323) to the Austrian side and Berchtesgadener Land (DE215) and Traunstein (DE21M) in the German sector.

A moderate population growth (1.85%) has been recorded in the EuRegio over the period analyzed (2002-2008) being the Austrian sector, particularly Salzburg und Umgebung (AT323), the area where population grew faster. The CBA shows a positive natural increase despite of the negative natural increase registered in the German sector. On the contrary, in the Austrian sector net migration rates are below the average value of the CBA. The German sector is more old age dependent and less young age dependent than the Austrian sector, as well as the EU27. Berchtesgadener Land (DE215) in Germany is at the same time the most old age dependent and young age dependent region in the CBA. The increase of population over 64 is higher than the increase of employed people with social insurance obligations. Berchtesgadener Land (DE215) is the only NUTS3-region where the increase of people over 64 is lower than the increase of population employed with social insurance obligations. In the Austrian sector there is a great gap between the increase of population over 64 (23.82%) and the increase of people with social insurance obligations (4.94%).

Agricultural area has shrunk over the period 1990-2006 in the entire CBA but within Pinzgau-Pongau (AT322), while urban sprawl (i.e. artificial surfaces) has increased over the same period. The greatest expansion of artificial surfaces has occurred in Pinzgau-Pongau (AT322) and Traunstein (DE21M). Agriculture shows a decreasing trend in the entire CBA both in GVA and employment terms.

Multimodal potential accessibility is above the ESPON average (100) in the entire EuRegio, except Pinzgau-Pongau (93.9). Nevertheless, a decreasing trend is observed from 2001 to 2006, especially in the areas that have the highest multimodal potential accessibility, such as Berchtesgadener Land (DE215) and Salzburg und Umgebung - AT323 (-1.4 and -1.2 respectively). Considering the three types of transport accessibility included in the DFS, railway accessibility has increased considerably in every NUTS3 from 2001 to 2006 comparing to air and road accessibility, which remains broadly constant over that period.

Unemployment rate is lower in the observed NUTS 2 areas than the corresponding country and EU averages. Unemployment is higher in the German sector of the CBA than in the Austrian one, but in both cases below both national and European averages. Long term unemployment, although smaller than the European average, is higher in the German sector than in the Austrian one. However, youth unemployment is higher in the Austrian side. Population at risk of poverty is higher in the German sector, but still remains below the country and European averages.

The share of population with tertiary education on the German side of the CBA is larger than on the Austrian side. Infant mortality rate is higher on the German side.

Regarding tourism, there has been a generalized increase of guests in the CBA as a whole, but not of overnights lodgings, as the length of stay in average has decreased. The occupation of beds in the German sector is considerably higher than in the Austrian one.

With regard to the environmental situation, Berchtesgadener Land - DE215 (37%) and Pinzgau-Pongau - AT322 (22%) stand out in terms of area covered by NATURA 2000 areas. Days with ozone concentration exceedances are more frequent on the German side of the border (6 days per year) than in the Austrian sector (ranging from 2 to 5 days per year).

4.4. Data Fact Sheet 4: Euroregiono NEMUNAS Marijampoles biuras

This DFS covers the area along the border among Lithuania, Poland, Byelorussia and Russia. Due to data shortness, analysis has been only possible for the Lithuanian and Polish regions.

The analysis shows negative population growth rates since 2002 in every region in the area but LT00A Vilniaus apskritis and PL343 Bialostocki, where population grew slightly from 2002 to 2008. In the first case, net migration compensates the negative natural growth while in the latter both values are slightly positive. Net migration is negative in every region of the CBA at NUTS 3 level but in LT00A Vilniaus apskritis. Natural increase is negative in every Lithuanian region, while it is positive in three out of the four Polish regions. The majority of the regions are less old-age dependant and young-age dependant than the EU average, which means that the population is concentrated on 15-64 age group.

Agricultural areas have decreased since 1990 in every region in the CBA, but in PL345 Suwalski.

The share of agriculture and fishing in both employment and GVA is higher than in their corresponding country averages, except in LT00A Vilniaus apskritis (capital region) although a decreasing trend is found in all of them.

Multimodal potential accessibility is below 50 (100=ESPON average) in the entire CBA but in the Lithuanian Capital region (LT00A Vilniaus apskritis, around 90).

GDP has grown more intensely in LT00A Vilniaus apskritis and PL623 Elcki than in their country averages, although the GDP per capita is still lower than in their country averages in every region at NUTS 3 level but LT00A Vilniaus apskritis.

Concerning social cohesion, unemployment rate and youth unemployment rates in the Polish side are below the EU27 average⁴, while the contrary happens in the other side of the border. LT004 Marijampoles apskritis is the region with the lowest rates in Lithuania (below the corresponding country average). PL345 Suwalski is the only Polish region where unemployment rate is higher than the country average, while youth unemployment rate is below the country average in all cases. Ozone concentration exceedances range from 0 to 6 days in every region and NATURA 2000 areas are particularly relevant in PL343 – Bialostocki and PL345 Suwalski.

4.5. Data Fact Sheet 5: Friuli-Venezia Giulia

This DFS covers the area along the Italian and Slovenian border.

The analysis shows positive population growth rates since 2003 in every region but ITD44 Trieste. This is mainly due to the increase of net migration which has compensated by far the negative natural increase (acknowledged in all NUTS 3 regions). The Slovenian regions are less old age dependant than the Italian sector of the CBA. Population living in FUAs as percentage of total population has increased slightly from 2001 to 2006.

Agricultural areas have decreased in every region, while the share of agriculture and fishing over total GVA has decreased in every region, but still, half of the regions (at NUTS 3 level) are above the EU27 average in terms of people employed in that sector.

⁴ Non data available at NUTS 3 level concerning social cohesion indicators: unemployment, population at risk of poverty, population with tertiary education ad infant mortality.

Multimodal potential accessibility has slightly decreased in all NUTS 3 regions but SI024 Obalno-kraska over the period 2001 to 2006. ITD43 Gorizia is the only one above the ESPON average.

GDP has grown in every region of the CBA, being the Slovenian sector similar to the national value but below the EU27 average. The Slovenian sector of the CBA has experienced a significant GDP growth in the period 2003-2008. It is worth mentioning the substantial GDP growth acknowledged in SI024 Obalno-kraska, which has been accompanied by a noteworthy growth in R&D expenditure (2.8% growth in 2003-2008).

Social cohesion data shows a critical situation concerning youth unemployment within the Italian sector, while long-term unemployment and infant mortality rate is an issue in the Slovenian sector. Finally, population with tertiary education in the Slovenian sector is above the Italian sector and the EU27 average.

4.6. Data Fact Sheet 6: Oresund Committee

This DFS covers the area along the borders among Denmark and Sweden.

The analysis shows positive population growth rates in all NUTS 2 regions, especially in the Swedish sector of the area. This is mainly due to the high net migration in every region but DK022 Vest- og Sydsjælland. Old age dependency is over 22 in all the regions but DK011 Byen København (16.2). The number of transfers from the Swedish sector of the CBA to the Danish one has doubled since 2004 (to some extent this trend is caused by Danes moving back to the Danish part of the region), while commuters in the same direction has been multiplied by 9 since 1998.

In 2008, the share of agriculture and fishing in GVA was below 2% in every region, with a declining process recorded over the previous years, while the share in employment has not dropped such intensely and still represents higher values.

Multimodal potential accessibility is in DK022 Vest- og Sydsjælland significantly lower than in the rest of the CBA and below the ESPON average.

A positive trend of GDP evolution is acknowledged from 2006 to 2008 in every region. Unemployment rate in the Danish sector is significantly lower than the EU average, while the rate in the Swedish sector is similar to that average.

Long term unemployment, youth unemployment, infant mortality rate, population at risk of poverty and population with tertiary education show a very positive trend in the CBA.

On average, ozone concentration exceedances only take place 1 to 2 days a year and Byen København (DK011) shows a significant coverage of NATURA 2000 areas.

4.7. Data Fact Sheet 7: EUREGIO

EUREGIO is a cross-border region between the Netherlands and Germany.

The analysis shows positive growth rates in all the regions at NUTS 3 level but DE944 Osnabrück, Kreisfreie Stadt and DEA38 Warendorf. Natural increase is positive in the Dutch side of the border while it is negative in 5 out of the 8 German regions. Net migration is positive in six German regions out of eight and one of the two Dutch regions. Young age dependency is higher than EU average in the majority of the regions of the CBA, while every region but NL213 Twente is more old age dependant than the EU average. Old age dependency in all regions ranges from the Dutch average (22.82) to the German average (31.37).

Population in FUAs as a percentage of total population has slightly decreased in the German sector of the CBA, while it has slightly increased in the Dutch sector. According to the data available of the FUAs analyzed, it also could be said that urban networks are denser than non-urban ones.

Agricultural areas have decreased in the entire CBA. Share of agriculture and fishing in the German side of the border is above the country value but in DEA33 Munster and DE944 Osnabrück, Kreisfreie Stadt, while the contrary happens in the Dutch side of the border. It is

noteworthy that the people employed by agriculture and fishing has increased from around 4% to almost 6% in NL225 Achterhoek (while share in GVA has maintained a regular negative trend), despite a negative trend is observed in the last years.

Multimodal accessibility is over the ESPON average in the entire CBA although it has decreased from 2001 to 2006. GDP has increased in every region (NL225 – Achterhoek shows the most intense growth), being DE944 Osnabrück, Kreisfreie Stadt and DEA33 Münster, Kreisfreie Stadt the areas with a highest GDP.

Unemployment rate is lower in the German side of the CBA than the corresponding country value, but in any case higher than the one recorded in the Dutch side. Both the highest and lowest youth unemployment rates are found in the German side of the border. DE944 Osnabrück, Kreisfreie Stadt (11.1%) almost meets the country average (11.2%), while the corresponding rate in DE94B Grafschaft Bentheim is 5.6% (under the Dutch average, which is 6.6%).

The figures on tertiary education that could be obtained on both countries were excluded from the analysis due to statistical harmonisation issues. These have been caused by the different calculation methods applied on both sides of the border: while in Germany tertiary education statistics include only universities, universities of applied science and a few business academies, in the Dutch area prevails a broader definition of tertiary education.

Days with ozone concentration exceedances range from 12 to 15 (over the EU average of 10 days). The extension of the NATURA 2000 areas in relation to the whole area is below the EU and corresponding country averages in all cases.

5. General conclusions

5.1. Overall reflections derived from the MTA

Borders are almost synonymous with political, demographic and economic remoteness. They are usually far from the capital city of a given country, and they also behave as functional and territorial discontinuities. Indeed, borders still impose a barrier on socio-economic systems through aspects such as transport infrastructures, customs, difficulties in accessing complementary natural resources and labour markets, and even language. This barrier effect implies that, broadly speaking, economic activities do not tend to concentrate close to the national borders and public institutions normally have a limited interest in investing in fixed capital in these areas.

However, the growing integration of European regions, where many of the traditional barriers that characterise borders have been abolished, should therefore lead to the development of many border regions that could exploit their formerly hindered potential, and eventually to an increase in population and GDP growth along the borders. This should be particularly true for the centrally located border areas, which should be more attractive from a location theory perspective. At the EU level, the integration of different countries is being accelerated even more by the different programmes focused on cross-border cooperation, as well as by existing funding mechanisms put in place in order to reduce regional disparities and increase territorial cohesion.

Given that the present position of borders is a consequence of a complex historical, cultural, geographical, legal and political background, the analysis conducted in ULYSSES has been aimed at understating how the borders function in different contexts and the impacts of the general challenges they pose, rather than in identifying an overall pattern on the behaviour of cross border regions. To a certain extent, this focus is determined by the initial design of the project, as the analysis of a restricted amount of units of analysis can be understood as way to evaluate the constitutive diversity of the observed phenomena.

Against this backdrop, and considering also that the scope of the ULYSSES project in general, and the quantitative analysis in particular, did not allow for a thorough and scientifically sound analysis of regional border effects, there are some aspects that can be highlighted from the different MTA, as well as from the factor and regression analysis that was performed in the EU27 regions:

The **first** one is that the differences in the CBA seem to be pretty much a consequence of their overall location and not so much of their border position. This means that the central European CBA are performing at a similar level than other centrally located regions, while border regions in peripheral countries perform similarly as other peripheral regions. It is also interesting to highlight that the importance of the central location reaches a point where the economic development of a region is better explained by high population densities and potential accessibilities than by the investment in R&D. Nonetheless, it is partly true that most of the border regions that have been analysed tend to occupy remote positions, namely in countries at the fringes of the EU. It is also true that in these cases the border regions are marked by a strong relative presence of the public sector, since the private sector is less developed (e.g. Karelia or the Alentejo - Extremadura CBA) and are therefore more susceptible to its eventual contraction.

The **second** one is that borders keep playing a major role in explaining the behaviour of the different regions, but by dividing different national realities. For example, when two countries perform very differently for a given indicator, their border regions are very likely to mimic the national realities, even if they share a large set of characteristics with the border regions on the other side.

The **third** one is that the border condition seems to be more relevant at the regional than at the local level. For example, while the position of the total CBA in the national or European context is clearly relevant, the settlement patterns at the LAU 1 or 2 levels often seem to be indifferent to the border. The distribution of major urban centres is also by no means in a direct relation to the border and seems to depend

more on regional idiosyncrasies. For example the river borders, such as the Rhine Valley, tend to attract major agglomerations while the mountain borders, such as the Pyrenees, tend to repel them. The tendency for population to grow fastest in the more densely populated areas also means that in some cases the historic tendencies are simply reinforced.

A **fourth** one is that the cross border commuting levels between different regions still tend to be low, when compared to the commuting between regions of the same country. The administrative, legal and cultural barriers between countries seem to keep on functioning as a major deterrent, even in situations when there are large regional asymmetries in unemployment and economic development and relative ease of mobility. Of course this situation is not homogeneous, and the densely populated borders in Central Europe show relatively high numbers with a tendency for growing. But even in these cases, the cross border commuting is still a small fraction of the regional commuting at the national level.

The **fifth** is that the borders seem to keep functioning as a limit for the diffusion effects of development poles. The analysis of the performance indicators shows, for example, that large asymmetries in the GDP growth on different sides of the border persist, while at the national levels there appears to be a stronger tendency for spatial autocorrelations between bordering regions (although this should be confirmed by a more detailed statistical study). This essentially indicates that, besides the European effort in promoting territorial cohesion and valuing the regional dimension in policy design (which can be associated with a slight decline in regional disparities across the EU 27 in the last decade), the national level maintains a prime role in regional development.

To summarise, despite the significance of national level, cross-border issues should not be neglected in EU or national policies, as borders keep affecting the performance of the regions and continue to challenge the local actors. Borders also create opportunities at lower spatial levels and it appears of great importance for the border regions that cross-border cooperation is supported both in policy and financial terms by European and national policies.

5.2. Specific reflections derived from the cross-border institutional analysis

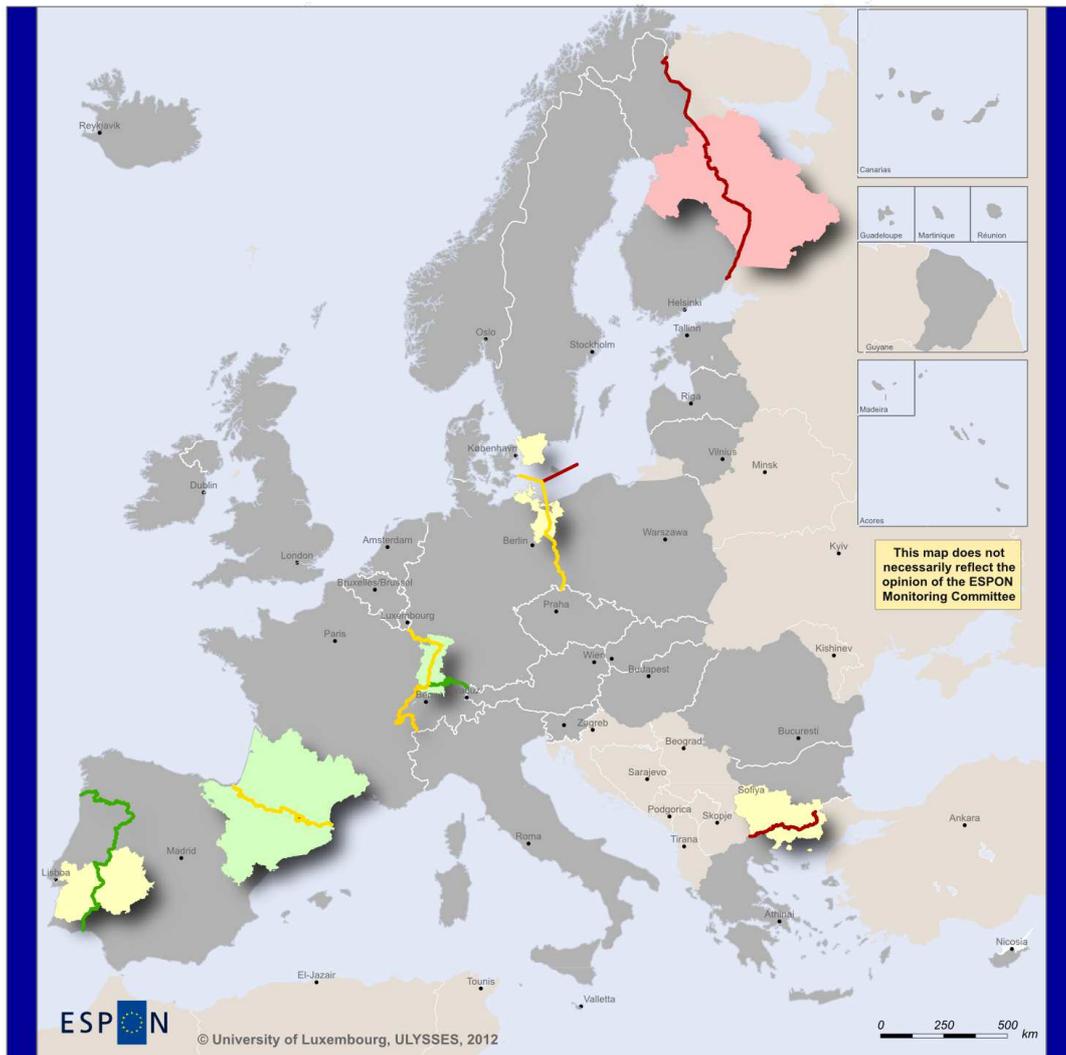
Border regions are often called 'laboratories of Europe', and this label is also confirmed by the ULYSSES project: the 'contact zones' of different national systems reveal very clearly the added value and, at the same time, the challenges of European integration. The regions analysed in ULYSSES project show the territorial diversity of Europe, and they also show very different characteristics with regard to governance.

The map below shows the overall picture for the ULYSSES regions by visualising the indicators analysed in ULYSSES: The border effects due to differing political structures are mapped and represented by the borders (lines) in different colours. The main indicators behind this *structural dimension* are the political status of the border, the planning system, the language barriers, etc. The *activity dimension* in cross-border governance is represented by different colours of the regions themselves (surfaces). Here, the most important indicators refer the INTERREG participation, as well as to the institutional thickness and to cross-border spatial development strategies, among other indicators.

The map shows a synthetic and generalised picture. The results must not be misunderstood in a way that it would *evaluate* institutional settings from a normative setting; the approach is a purely analytical one. A more detailed description is given in the specific chapter on the respective MTA. At this point, we can draw some general conclusions:

- Some patterns of the map confirm certain well-known characteristics of European borders: the internal EU 15 borders are, from a structural point of view, much more favourable for cross-border governance than, for example, external EU borders or borders with transition states. It is not surprising that the cooperation in the Upper Rhine region is closer than that one in Karelia. These structural differences show that territorial cohesion remains a challenge also with regard to border regions.

- At the same time, the map illustrates that the structural dimension cannot be explained in a *deterministic* way. Institutionalised cross-border cooperation does have a considerable *scope of action*. Just to give an example: Though the challenges in the Pyrenees region are not more important than in many other regions, the cross-border institutionalisation has been particularly intensive.
- The pattern also indicates that socio-economic development alone does not determine cross-border governance, neither. For example, both the mountainous area of the Pyrenees and the densely populated Upper Rhine area with a high degree of functional integration show similar patterns in the cooperation schemes, despite all socio-economic differences.



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Regional level: NUTS 2 and 3
Source: ULYSSES, 2011
Origin of data: ULYSSES, 2011
© EuroGeographics Association for administrative boundaries

**Character of the border
(Structural dimension)**

- Barrier
- Interface
- Link

**Character of the cross-border cooperation
(Activity dimension)**

- Neighborhood
- Cooperation
- Integration

Map 8 Structural Dimension and activity dimension of the ULYSSES regions' institutional setting

To sum up, on the basis of the six regions of the ULYSSES project the map shows the *diversity* of borders and border regions in Europe also from the institutional point of view: The structural and the activity dimension have very different values. Obviously, a full equity of these spatial patterns in European border regions is not a reasonable objective, in particular not in the short and medium term. Territorial diversity has to come along with different institutional settings, and the involved institutions have to face the respective challenges *on the ground*. This means that, from the perspective of territorial cohesion, following the principle of tailor-made strategies, all regions have to develop their own ways in order to exploit their cross-border potential.

6. Lessons learnt for policy development

Generalising the crucial findings from the ULYSSES study and simplifying to a certain extent we can state the following points that are of relevance for European cross-border policy in general:

- a) **Borders matter:** even though the specific territorial trends found within cross-border areas seem to be more linked to national trends rather than cross-border effects, the evidence collected by ULYSSES project shows as (i) borders keep playing a major role in explaining the behaviour of the different regions by dividing different national realities; (ii) border effects are clearly perceivable at the national and regional levels; (iii) cross-border commuting levels between different regions still tend to be low in comparison to the commuting between regions of the same country, and; (iv) borders seem to keep functioning as a limit for the diffusion effects of development poles.
- b) **Geography matters:** the MTA and DFS conducted in ULYSSES illustrate that local geographic conditions impact on territorial development within cross-border areas in many ways. Indeed, borders are very diverse across Europe and may have different implications depending on the sometimes neglected geographical features that characterise such borders. These specific features should be taken into account also at the European level while implementing policy measures aimed at reinforcing territorial cooperation within cross-border areas. In other words, adopting a place-based approach for cross-border cooperation entails approaching different types of cross-border areas with differentiated policy strategies and instruments.
- c) **Regional delimitation matters:** analogously, the territorial analyses made evident as the most comparable regional statistical units available across Europe, namely NUTS 2 and 3 regions, have totally different connotations. A good example to illustrate this is the Spanish province of Badajoz (ES431), a NUTS 3 region included in the Extremadura-Alentejo CBA, which in spatial terms is almost as large as the entire Upper Rhine CBA, including 22 different NUTS 3 regions. From a slightly different perspective, some CBA seem to comprise a number of NUTS 3 areas falling outside the actual range of measurable cross-border effects (e.g. the French department of Lozère and the Spanish province of Teruel, both included in the Pyrenees CBA), while the delimitations of certain NUTS 3 regions hide internal differences linked to specific territorial domains (e.g. depopulated mountain areas and densely populated plains and valley bottoms included in the same NUTS 3).
- d) **Scale matters:** from an operative perspective and in connection to previous points, the multi-thematic analysis evidenced that (i) the geographic scale at which data is produced/collected conditions the final results of the analysis in various ways; (ii) many of the topics covered would require further analysis, as data availability for specific territorial domains and levels of detail is sometimes very limited; (iii) ESPON data is thought to be a precious asset in approaching the cross-border issue at the European level, but its reference scale seems somehow inappropriate for designing tailor-made strategies for single cross-border areas.
- e) **Cohesion matters:** both the multi-thematic analyses and the governance analysis often show clear differences between the different parts of each border region, between the border regions and their domestic hinterland, and amongst the border regions across Europe. Even if cross-border cooperation is not about mainstreaming and standardising regional development, the goal of a balanced territorial development remains a challenge, also in the regions of the 'old' EU Member States. It has to be underlined that achieving territorial cohesion has to be based on a variety of measures, ranging from investment in hard infrastructure to the setting up of a territorial development scheme on a regional level.
- f) **Diversity matters:** Obviously, the diversity of the involved territories must not be regarded as a barrier to a successful territorial development. Complementary labour markets and cultural richness are typical examples for successful regional development, also in border regions. The challenge is to enact place based approaches that make use of the territorial potential. This is also true for the

institutional setting that has to be based on local and regional particularities and, at the same time, that has to be strong enough to achieve its goals.

- g) Territorial cooperation matters:** All ULYSSES regions have a certain experience with bi- and multilateral cross-border institutions. In some regions, like in the Upper Rhine, a certain consolidation of the multiple structures might be an option; in others, a broader cooperation basis could be useful. In all regions, the institutional setting shows the overarching importance of the structural funds, in particular with regard to the INTERREG programme. After two decades of European programmes for territorial cooperation, this support is still of major importance. At the same time, the always limited duration of the projects is not easy to handle in practice: fluctuation of the personnel and the perpetuation of the most promising projects – like the territorial monitoring projects – is a permanent challenge.

Moreover, the new European tool of the EGTC and comparable legal instruments are broadly tested and adopted within the ULYSSES regions. Even if this tool is currently undergoing a reform process, it can be regarded as one of the success stories of cross-border governance, complementing the hitherto developed multiple forms on a bi- and multi-lateral level. This example shows that support from the European level is important also beyond financial instruments.

- h) Spatial development strategies matter:** The overall objective of the ULYSSES project is to support cross-border spatial development strategies. In this regard, we can state two main aspects:

Firstly, the knowledge basis for cross-border regions is not comparable with the ones of domestic regions. Also in this regard, the structural funds support is of major importance. The example of the Upper Rhine project for a joint Geographical Information System (“GISOR/SIGRS”) is just one example for this. Again we see both the importance of the European programmes to launch important developments and the challenge to maintain the knowledge, to keep it up to date and to lead over to stable structures.

Secondly, most regions have already formulated strategic elements for territorial development, either in form of more analytical studies or of joint political declarations. However, we see a certain tendency that these documents are often quite abstract and not always institutionalised in a political way. In many regions a stronger positioning of territorial development strategies seems to be the logic next step. In some regions, a series of studies and documents exist, and a consolidation of the rich material might be a promising option, too.

- i) Knowledge matters:** when it comes to territorial development and cross-border cooperation, it seems evident that reciprocal knowledge of current territorial trends by all parties is essential in order to boost successful strategies. This calls for a joint effort for producing focused, complementary and tailor-made analyses within all the cross-border regions aiming to achieve accurate knowledge of the territorial trends active in those areas. In general, spatial development strategies will only be taken seriously if the knowledge basis is solid and meaningful with regard to cross-border aspects.
- j) Institutionalisation matters:** analogously, cross-border strategies related to spatial planning will only be able to influence later territorial development if the key messages will be institutionalised in political way, in particular with the approval of cross-border committees, the domestic partner regions and stakeholders. This would definitively set the agenda for CBA and ensure up-take at lower territorial levels. Additionally, institutionalisation would allow the CBA to rely on a shared strategic objective to lobby national or European authorities in support of local actions, especially taking into account that the Territorial Agenda 2020 explicitly welcomes “all initiatives coming from public authorities at diverse levels, contributing to develop long term territorial strategies across borders, and ask European Commission to provide its support where necessary” (EC 2011b, p.9).

7. ESPON contribution and further analytical work

One of the main objectives of the ULYSSES project was the promotion of the ESPON research results as a yardstick for decentralised cross border spatial development. For this strategy several aspects have been envisaged. The first one was the use of ESPON data, namely the data that has been gathered by the ESPON database project. The second one was the use of concepts that have been developed by the successive ESPON projects. The third one was the use of ESPON tools, such as the mapping guide or the GIS files.

This data was afterwards completed with other European and local sources on each of the themes: demography, polycentricity, urban-rural relationship, accessibility & connectivity, Lisbon/Europe 2020 and Gothenburg Strategy objectives. Nonetheless, there are significant shortcomings and data gaps for all of them, which stresses the importance of further analytical work that could lead to a deeper understanding of the phenomena at work, their manifestations and causes:

- d) A first major issue is the **adaptation of many of the ESPON data and concepts to lower geographical scales**. In fact, many of the ESPON projects have been established at the European level and are poorly suited for evaluating local or even regional realities out of the broader context. When analysing cross border realities this issue becomes clear in several aspects. One of them is that much of the data has been treated at the NUTS 3 level. As NUTS 3 units in many countries cover large areas, they can include border areas, as well as areas that can hardly be classified as such. Therefore, for analysing specific border effects, data at least at the LAU 1 level becomes necessary.

Another aspect is that often the concepts themselves are more suited for the European level. For example, when looking at the two major projects that have dealt with polycentricity (the ESPON 1.1.1 and the ESPON 1.4.3), it becomes clear that the most elementary unit on which this concept was based – the Functional Urban Area (FUA) – is already formatted for a large scale analysis. In the ESPON 1.4.3, the FUA have been established by aggregating LAU 1 and LAU 2 that form a densely populated continuum, set to minimum threshold regarding its inhabitants. Therefore, the small urban centres that characterise many of the low density cross border areas are completely left out of this kind of analysis. These centres, while not being relevant at the European level, are certainly relevant for the regional level.

- e) A second major issue is the **need for more frequent data updates**. Much of the ESPON data has been produced by the 2006 projects and uses data from the late nineties and early two thousand. Often, the NUTS delimitation of 1999 was used, which has been subject to significant changes in many countries, further limiting its usability. There have been, nonetheless, some noteworthy efforts to update some selected indicators, namely the composite Lisbon Strategy performance benchmark and the potential accessibility indicators for different modes of transportation.
- f) A third major issue is the **further improvement of the data coverage on some of the main themes** that have been analysed by the ESPON. As the ESPON programme is not focused on primary data collection, data insufficiency cannot really be attributed to the programme, but is more related: (i) to general difficulties in guaranteeing uniform procedures in data collection and treatment at the European level; (ii) the simple absence of data on some themes even at the national levels, and; (iii) difficulties in getting major agents to share the data they possess.

Good examples of these situations are the cases of the connectivity or urban-rural relationship. Concerning connectivity, even straightforward indicators such as internet connections by household, are rarely available for low geographical scale. Essentially, there seems to be a great difficulty in establishing a uniform procedure for getting the data from the different agents in the telecommunication markets (namely the Internet Service Providers) throughout Europe and making it available for the wider public in a frequent manner. As for the urban-rural relationship, and although the theme has been subjected to many studies, namely in the ESPON program, there is still no data available at the European level to actually evaluate the interaction

between rural and urban areas (meaning the flow of people, capital, goods and information). This means that the analysis of this theme is essentially dependent on structural indicators, such as land cover patterns or the distribution of employment and GVA by economic sectors that are commonly linked to rural or urban lifestyles. At least, the land cover data is available through GIS and can therefore be adapted to different geographical scales. But, since the urban-rural typologies established by the ESPON and by the EUROSTAT are only available at the NUTS 3 level, it is not possible to link these indicators with rural or urban realities at the scales that would be desirable.

Other examples of significant shortcomings in the data coverage can also be found regarding polycentricity and economic integration. In polycentricity the FUA classification should essentially encompass a morphological dimension, which deals with the distribution of urban areas in a given territory, and a relational, which is based on the networks of flows and cooperation between urban areas at different levels. But, actually, the data is essentially based on morphological and structural indicators and the dynamic aspects of the city systems are very poorly covered. Therefore, although some attempts to differentiate FUA according to their functional specialization have been made, a sound analysis of how the different urban agglomerations articulate themselves and interact with their surroundings cannot be made. Regarding economic integration, although there have been some regional attempts to measure regional imports and exports by provenience and destination, this data is not available at a broad scale.

From what has been said until here it becomes clear that for a deeper understanding of the cross-border realities a qualitative leap in data availability is indispensable. Specifically, the following aspects could be considered:

- Try to measure economic flows that occur between the different sides of the border, namely by analysing importation and exportation by region of origin/destination (this information is available only in a very partial manner).
- Measure the significance, direction and motivation of cross-border commuting at low geographical scales (the actual EUROSTAT data is only available at NUTS 2 level and has gaps), to see if it plays an important role in mitigating international labour market asymmetries and, if so, whether the further integration of the transport systems would be justified.
- In parallel to cross-border commuting, more detailed information on migration would also be very useful, particularly in/out migration on low geographical scales by region of origin, as well as other socio-demographic indicators (age, sex, education level, etc.).
- Try to understand the former two points in relation to wages, unemployment rates and other regional asymmetries.
- Understand the urban-rural relationship at a cross border level: it would, for example, be very interesting to analyse if the urban areas on one side of the border are being used for service provision or as regional markets for rural areas on the other side of the border.
- Study the possibility for deepening joint public service provision to limit redundancies: in many cross border areas there are protocols in place for sharing public infrastructures, such as health facilities; a deeper knowledge of their extend, reach and nature could be an important aspect in understanding and benchmarking cross border integration.

In conclusion, basing on the lessons learnt in ULYSSES through the six MTA and the seven DFS, it can be concluded that ESPON programme has proven to be a good reference framework for cross-border spatial cooperation across Europe, as it helps increasing the value added of this type of cooperation in three interconnected ways:

- Firstly, ESPON offers specific and comparable data at the European level, which serves as reference to understand how specific cross-border areas are positioned

with respect to European and national standards for most relevant territorial indicators.

- Secondly, ESPON contributes to the development of a shared view of cross-border reality, by means of:
 - The achievement of a common understanding of key aspects of territorial cooperation through policy and academic discussion of cross-cutting governance issues within ESPON space.
 - The generation of a basic consensus on the main challenges currently faced by cross-border areas and those expected in the years to come, which can eventually be translated into broad lines of action to be adapted to local conditions.
- Thirdly, ESPON allows identifying those topics that require further analysis and specific focus at lower spatial levels.

Indeed, the value added of ESPON should be totally compatible and complementary to any additional tailor-made analysis built against this backdrop, which by definition needs to be focused on local specificities through fine-grained data produced at lower geographical levels. Hopefully, this local dimension will be further addressed within all the CBA involved in ULYSSES, using the results of this project as a starting point for cross-border spatial development planning.

Glossary

AEBR: Abbreviation of Association of European Border Regions.

CBA: Abbreviation of Cross-Border Area.

DFS: Abbreviation of Data Fact Sheets.

FUA: Abbreviation of Functional Urban Area, that is to say, the municipality (or a cluster of municipalities forming an urban agglomeration) and its related labour basin.

GDP: Abbreviation of Gross domestic product, which refers to the market value of all officially recognized final goods and services produced within a country/region in a given period.

GVA: Abbreviation of Gross Value Added, which is a measure in economics of the value of goods and services produced in an area, industry or sector of an economy.

EGTC: Acronym of European Grouping for Territorial Cooperation. It allows public entities of different Member States to get together under a new entity with full legal personality.

LAU: Abbreviation of the Local Administrative Units, a low level administrative division of a European state, ranked below a province or region. LAU are basic components of Nomenclature of Territorial Units for Statistics regions (see NUTS below). For each EU member country, two LAU levels are defined:

LAU 1: LAU 1 were previously called NUTS-4 until the NUTS regulation went into force in July 2003. For some countries, the LAU-1 level is not defined, and thus equivalent to the NUTS-3 level.

LAU 2: LAU 2 were previously called NUTS-5, until the NUTS regulation went into force in July 2003. LAU 2 represents the lower administrative level (formerly NUTS level 5), corresponding to municipalities or equivalent units in the 27 EU Member States.

MTA: Abbreviation of Multi-Thematic Territorial Analysis

NACE: Abbreviation of *Nomenclature Statistique des Activités Économiques dans la Communauté Européenne*. The Statistical Classification of Economic Activities in the European Community is a European industry standard classification system consisting of a 6 digit code.

NUTS: Abbreviation of the Nomenclature of Units for Territorial Statistics. It represents a 'geocode standard' for referencing the subdivisions of EU space for statistical purposes.

NUTS 0: First level definition of the EU space, corresponding to countries.

NUTS 1: Second level definition of the EU space, corresponding to groups of regions or states.

NUTS 2: Third level definition of the EU space, corresponding to regions.

NUTS 3: Fourth level definition of the EU space, corresponding to districts, departments or provinces.

PCA: Abbreviation of Principal components analysis.

TPG: Abbreviation of Transnational Project Group.

ULYSSES: Acronym of the project 'Using Applied Research Results from ESPON as a Yardstick for Cross-Border Spatial Development Planning'.

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C. Scientific Report

The Scientific Report of ULYSSES (in a separate folder) includes the following documents:

Multi Scale Territorial Analyses

1. Upper Rhine
2. Working Community of the Pyrenees
3. Greece – Bulgaria cross-border area
4. Euregio Karelia
5. Euroregion Pomerania
Extremadura/Alentejo cross-border area

Data Fact Sheets

1. Duna-Koros-Maros-Tisza Euroregion
2. Ems Dollart Region
3. EuRegio Salzburg - Berchtesgadener Land - Traunstein
4. Euroregiono NEMUNAS Marijampoles biuras
5. Friuli-Venezia Giulia
6. Oresund Committee
7. EUREGIO

Annexes

ULYSSES Final Report includes a methodological annex (in a separate folder):

Annex I – Methodology of the multi-thematic territorial analysis

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