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List of authors

University of Gdansk

Jacek Zaucha

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1 Introduction

Performing a desk-based review of theories, trends and policies related to territorial development, territorial cohesion and territorial monitoring is a key prerequisite for proposing and enhancing a territorial monitoring system for the BSR that will work. Failure to do so would result in a business-as-usual outcome, i.e. a collection of variables hardly interpretable in spatial terms instead of meaningful policy indicators able to guide policies with territorial impacts.

For those engaged in spatial research and policy advice it has become evident that the theory lost pace to the policy debate and interventions with regard to use of territories and shape of territorial structures at macro scale. The new economic geography, evolutionary economics or institutional spatial economics have been developed at least in parallel to such important spatial documents as ESDP or the VASAB vision and strategies[1].

Thus, in order to answer the questions: "what should be measured" and "how" a critical examination of the past and ongoing policy discourse has to be provided first of all. This might include a screening of the key policy documents prepared by the EU, EU member states and VASAB itself. Also the findings of the ESPON projects should be considered, in particular when it comes to designing the overall framework of the monitoring system. Therefore, the TeMo project should launch the analyses with a screening of key policy documents prepared by the EU, EU member states and VASAB, followed by a related policy discourse.

2 Key notions

The territorial monitoring system of a macroregion might be rooted in such notions as territorial development, territorial cohesion and territorial integration. They have a lot in common; actually, however, they illustrate slightly different processes.

The territorial (or spatial) development refers to the ..."geographical distribution of the physical features in the built and natural environment and patterns and flows of human activity. It may also embrace the social, economic and cultural aspects of development" (Dühr *et al*. 2010, 32). In brief, such development means changes of territorial structures (settlement structures, transport infrastructure, natural structures, cultural landscapes etc.) and flows and connectivity between them. Their valuation, however, requires normative considerations. Development can be assessed only against policy targets and objectives such as territorial integration or territorial cohesion.

The economic integration has a more or less clear definition based on flows of goods, capital and factors of production. The stages of this process (free trade, a custom union, common market, economic union /monetary and fiscal union, political union) were described by B. Balassa (1961) more than fifty years ago. Unlike economic integration, the territorial (spatial) integration has no clear cut definition or understanding. For instance P. Vartiainen (2002) interprets territorial integration from the point of view of locality (socio-spatial concept) as a basic element of the multi-level settlement and community structure. The integration is therefore close to an interplay between local and global actions. Kai Böhme *et al.* (2011, 34) define territorial integration from the perspective of homogeneity. By "territorial integration" they mean *the process of reshaping functional areas to*

[1] This situation slightly differs from the case of the territorial governance or strengthening of the territorial dimension of public policies, for which theoretical models offer an interesting insight, not yet fully utilised in policy making.

make them evolve into a consistent geographical entity; this entails overcoming the various negative effects stemming from the presence of one or more administrative borders, which hamper harmonious territorial development. This definition puts emphasis on functionality and consistency. Viewed from that angle, territorial integration requires a minimum level of connectivity between different types of territorial structures i.e. the creation of city networks, transport corridors, cross-border labour markets, cross-border development zones and ecological corridors. The broadest definition of spatial integration has been proposed by A. Cornett and F. Snickars (2002). They consider spatial integration as the farthest-reaching concept of integration, embracing both economic and political integration but going beyond them to include also territorial factors facilitating co-operation and intensity of relations. Such understanding of territorial integration assumes existence of important feedback loops (since while the political and economic integration is powered by spatial proximity and adjacency, the socio-economic integration contributes, at the same time, to improvement of connectivity/accessibility). According to Cornett and Snickars (2002) the spatial integration includes features like:

- the development of specific, geographically defined systems of production such as industrial districts, clusters of industries, or systems of innovation;
- a system of urban networks defined according to specific functional links;
- the availability of a regional infrastructure linking the analysed areas together;
- the higher intensity of intraregional flows relative to the outside flows.

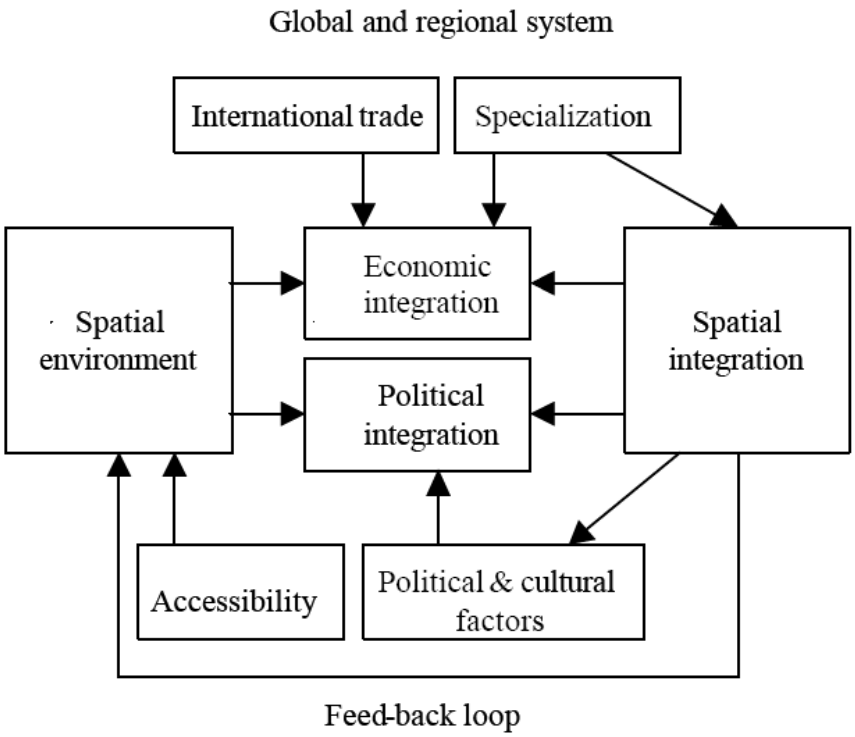

Figure 1 Spatial integration *Source: Cornett and Snickars (2002, 4)*

As illustrated at figure 1 spatial environment (existence of cities, economies of agglomeration, transport networks etc) affect both economic and political integration. If shaped actively in order to support both types of integration (i.e.

creation of cross-border functional linkages, building infrastructure with aim to support cross border integration etc.) this environment becomes a conscious tool or instrument for supporting integration. Therefore spatial integration in the concept of Cornett and Snickars (2002) can be interpreted as objective integration process powered by spatial policy complementing economic and other pro-integration policies.

Similarly to the concept of territorial integration, also territorial cohesion has been subject to different, sometimes not entirely compatible interpretations (Farrugia, Gallina 2008, 33). Although included in the Treaty of Lisbon (Article 3) and becoming one of the main important horizontal objectives of the EU policies, the territorial cohesion lacks a precise, commonly shared definition. This has been highlighted by many researchers (Davoudi 2005; ESPON 2004, 118; Faludi 2005; Medeiros 2011, 11; Mole 2007, 98; Böhme 2011,2; Farrugia, Gallina 2008,7). Böhme (2011, 2) even argues that "over the last years, debates have shown that a precise definition of territorial cohesion is impossible. Because different groups of stakeholders focus on different dimensions of the territorial cohesion idea, any attempt to define it will exclude certain understandings and thus lead to a poorer result." Zillmer and Böhme (2010, 1) go so far as to say that a formal definition might be the end of the territorial cohesion use and popularity. However, the concept as such, though vague, has been appreciated and widely recognised (Dühr *et al*. 2010, 188-189), and even considered as a potentially powerful conceptual innovation by the Commission (Camagni 2011, 79).

Faludi (2004, 1349) argues that the original focus of the concept of territorial cohesion has been on regional economic development. Also in the Territorial Agenda of EU (Territorial Agenda 2007, 2) territorial cohesion is perceived not as a developmental goal as such (i.e. the desired state of territory) but rather as a "prerequisite for achieving sustainable economic growth and implementing social and economic cohesion". But just a year later the Green Book (European Commission 2008) proposed a much broader approach, for the first time putting an integrated pattern of policy making and the state of territory (its diversity as a developmental resource) under the same heading. This interpretation raises the status of the territorial cohesion to that of an important developmental goal, by stating that the „territorial cohesion is about ensuring the harmonious development of all these places and about making sure that their citizens are able to make the most of inherent features of these territories. As such, it is a means of transforming diversity into an asset that contributes to sustainable development of the entire EU" (CEC 2008, 3).

However, the process dimension of the territorial cohesion had appeared in the European debate much earlier. The EU Ministerial Conference on Territorial Development (2004, 16–17) emphasised that the territorial cohesion should be understood as not a mere levelling of social and economic disparities across the space but rather a coherent development of Europe as one entity (mega-region). The emphasis was thus put upon providing more equal development opportunities in accessibility to transport and ICT infrastructure, science and research etc. Hence, the territorial cohesion should entail the coordination of sector policies in their spatial context (i.e. considering their contribution to the coherent European development) and the coordination of spatial development in the vertical direction[2] (the EU Working Group on Spatial and Urban Development 2003, 32).

An interesting transformation of the understanding of the notion of the territorial cohesion can be observed in the debate powered by the documents prepared by the EU Commission. The territorial cohesion as a concept appeared, for the first time, in the Second Cohesion Report (CEC 2001). At that time it was territorial

[2] The vertical and horizontal directions were already promoted in the ESDP (European Spatial Development Perspective).

imbalances, spatial disparities and the differences in the potential for development that were brought into focus. In this context Article 158 of the Treaty was referred with regard to the need of promoting a harmonious development of the Union as a whole. The same reasoning was repeated in the Interim Territorial Cohesion Report (CEC 2004). In this document (CEC 2004, 3) the territorial cohesion was seen as a balanced distribution of human activities across the EU territory, i.e. as a territorial application of the sustainable development paradigm with focus on fair access to services of general economic interest in line with the Art. 16 of the Treaty. As a result, the meaning of the territorial cohesion got very close to the ESDP idea of polycentric development and was perceived as the vehicle for achieving other important objectives of EU. The Third Cohesion Report (CEC 2004b) paid a lot of attention to the territorial cohesion. It has provided a new break-through by extending the concept beyond the limits of territorial disparities and polycentrism. And also the disparities were analysed in this document in a much more detailed way by adding such challenges as development of the regions with geographical handicaps, demographic changes or fragmentation of natural areas (the latter, i.e. fragmentation, without clear relation to the economic and social cohesion). One of the reasons for such strong focus on territorial cohesion in the document may have been the inclusion of the concept into Art. 3 of the draft EU Constitution. The additions to territorial cohesion were aimed at making the sectoral policies exerting a spatial impact and the regional policy more coherent. Thus the process dimension of the territorial cohesion was spelled out for the first time so strongly by the Commission. Also the need to improve territorial integration and encourage cooperation between regions was mentioned in this context. Moreover, in the document the Commission recognized for the first time that "the concept of territorial cohesion extends beyond the notion of economic and social cohesion" (CEC 2004b, 27), thus acknowledging the territorial cohesion as a development objective in itself. The Fourth Cohesion Report hardly offered a new insight into the meaning of the territorial cohesion, attributing the notion to the territorial disparities of GDP, suburbanisation, migrations, cross-border cooperation, polycentric development, access to key services and transport infrastructure (CEC 2007, XII-XIV and 59,100). However, this document continued the tradition of indirect interpretation of the territorial cohesion as a horizontal objective[3] of the EU and therefore discussed the issue under different chapters i.e. in the context of various problems and policies and not in a separate section. The Fifth Cohesion Report (CEC 2010) was the first in the series devoted directly to the economic, social and territorial cohesion put on an equal footing (which could be easily seen from the change of its title). Despite this, the report did not made any attempt to define the notion of territorial cohesion but at least provided some insight into its scope. The territorial cohesion was attributed to the access to services, sustainable development, 'functional geographies' and territorial analysis (CEC 2010, 24). The document underlined the need of territorial co-ordination of policies (at different geographical scales) and, while discussing the functional geography, applied some notions characteristic for the economics of flows. When trying to get the actual meaning of the evolution described above, the following changes in the interpretation of the territorial cohesion can be noticed:

- from a static concept of the state of a territory to a dynamic concept of policy integration in line with the specificity of the given territories,
- from the vehicle or instrument used to achieve the social and economic cohesion to a genuine, independent EU objective,

[3] One can gain such impression from different pieces of the report, for instance from the following statement: „As recognised in the EU Treaty (Article 16), access to services of general economic interest is of major importance in achieving economic, social and territorial cohesion." (CEC 2007, 60)

- from a redistributive approach advocating spatial equalization of prosperity to the recognition of importance of territorial factors in the process of development and satisfaction of human needs.

Those changes match the evolution of EU Cohesion Policy, replacing or enriching similar but much narrower concepts such as territorial impact assessment (Dühr et al. 2010, 230), EU Cohesion Policy eligibility system for distribution of financial resources and programming (Hübner 2011, 6).

In EU member states the meaning of the territorial cohesion slightly varies. The most common interpretations of the notion are summarised below (Szlachta and Zaucha 2010):

- territorial cohesion as a means of enforcing territorial aspects in general, and in economy, social planning and decision-making in particular,
- territorial cohesion as a method of planning and development taking into consideration the territorial capital (potential) of places, settlements and regions, and their interrelations,
- territorial cohesion as an addition to economic and social cohesion, to include also the areas with geographic disadvantages (like mountain areas, islands, areas with severe climate, geographically remote areas or border areas).

There are only few comprehensive definitions of the territorial cohesion in the contemporary literature[4]. Szlachta and Zaucha (2010) define not the territorial cohesion as such but the territorially coherent area of a country or region, describing it as a territory that would appear as a network of mutually linked functional areas of varied spatial ranges to render citizens an access to workplaces and public services indispensable for development and preservation of social and human capital. The prevailing attitude is to interpret the notion of the territorial cohesion in the context of the integrative policy-making process. For instance, Faludi (2009) considers the territorial cohesion as a „situation whereby policies to reduce disparities, enhance competitiveness and promote sustainability acquire added value by forming coherent packages, taking account of where they take effect, the specific opportunities and constraints there, now and in the future. Territorial cohesion policy refers to measures promoting good territorial governance with the aim of achieving coherence as described". Medeiros (2011) defines territorial cohesion as the process of promoting a more cohesive and balanced territory, by: (i) supporting the reduction of socioeconomic territorial imbalances; (ii) promoting environmental sustainability; (iii) reinforcing and improving the territorial cooperation/governance processes; and (iv) reinforcing and establishing a more polycentric urban system. The farthest-reaching understanding of the concept of territorial cohesion has been proposed by the European Council of Spatial Planners. They perceive the territorial cohesion not just as a means to achieve a more effective policymaking but rather as an overarching (macro) goal of the policy, where the social, economic and spatial dimensions of the territorial cohesion are resonated in three horizontally integrated policies: social, economic and spatial. In such case the territorial cohesion might be considered as "the Connectivity of and among Economic, Social and Physical Systems, which enhances their overall Effectiveness for innovative Sustainable Development" (Vogelij 2010, 2).

Also the recent key EU spatial document, the Territorial Agenda of the EU 2020 (2011) has not resulted in a commonly shared definition of the territorial cohesion. However, the process dimension of the concept has been once more strengthened by stating that the territorial cohesion "is a set of principles for harmonious, balanced, efficient, sustainable territorial development". The

[4] For a comprehensive list see Medeiros (2011, 12)

following principles have been mentioned in this context: equal opportunities for citizens and enterprises wherever they are located; convergence between the economies of better-off territories and those lagging behind; development best tailored to the specificities of an area; as well as continued networking, cooperation and integration between various regions of the EU at all relevant territorial levels. But simultaneously the document underlines the importance of the territory as developmental assets by stating that the territorial cohesion should allow to make the most of the territorial potentials.

The most extensive ever conceptual analysis of the territorial cohesion has been provided by R. Camagni (2010) - Tequila Model and E. Medeiros (2011) – Star Model. The Tequila Model, appearing also in the ESPON 3.3 project (ESPON 2005, part 2, 77), enumerates the following components of the territorial cohesion: (1) territorial quality, (2) territorial efficiency, (3) territorial identity (Figure 2). The model is interesting in that it offers a new insight into the territorial cohesion, compared to the already discussed documents and reports. Also the approach to the territorial cohesion in this model is more comprehensive. The model:

- acknowledges the key role of the territory in growth achievement by stressing territorial aspects of competiveness, efficiency in the use of territorial resources etc,
- underlines the importance of territorial factors for achieving eco-development,
- highlights the "territoriality " of many social factors such as culture or social capital that play important role in sustaining growth but also in direct satisfaction of human needs.

The Tequila model properly encapsulates different roles of the territory that make the territorial cohesion concept so complex. It shows the territory as a growth resource (economies of agglomeration, natural resources, accessibility etc.), an indispensable frame securing interactions between developmental agents (diffusion of values, attitudes and ideas etc.), a unit for addressing public policies and, finally, a public good satisfying human needs (cultural landscapes, lack of urban sprawl, transport infrastructure etc.). The model highlights the important dichotomy of territory in human life: i.e. its function as the vehicle for achieving other important goals such as prosperity or social justice, and the role of the ultimate objective of human activities. Sometimes the functions reinforce each other e.g. cultural landscapes can enhance tourism and increase prosperity of a given place, in some cases they might be in conflict, though. The model is in line with the understanding of the territorial cohesion as provided in the *Territorial State and Perspectives of the European Union* report (Damsgaard *et al*. 2011) in which the cohesion is seen as a concept amalgamating diverse development paradigms such as convergence (polycentricity), sustainability, territorial competitiveness and regional vulnerability.

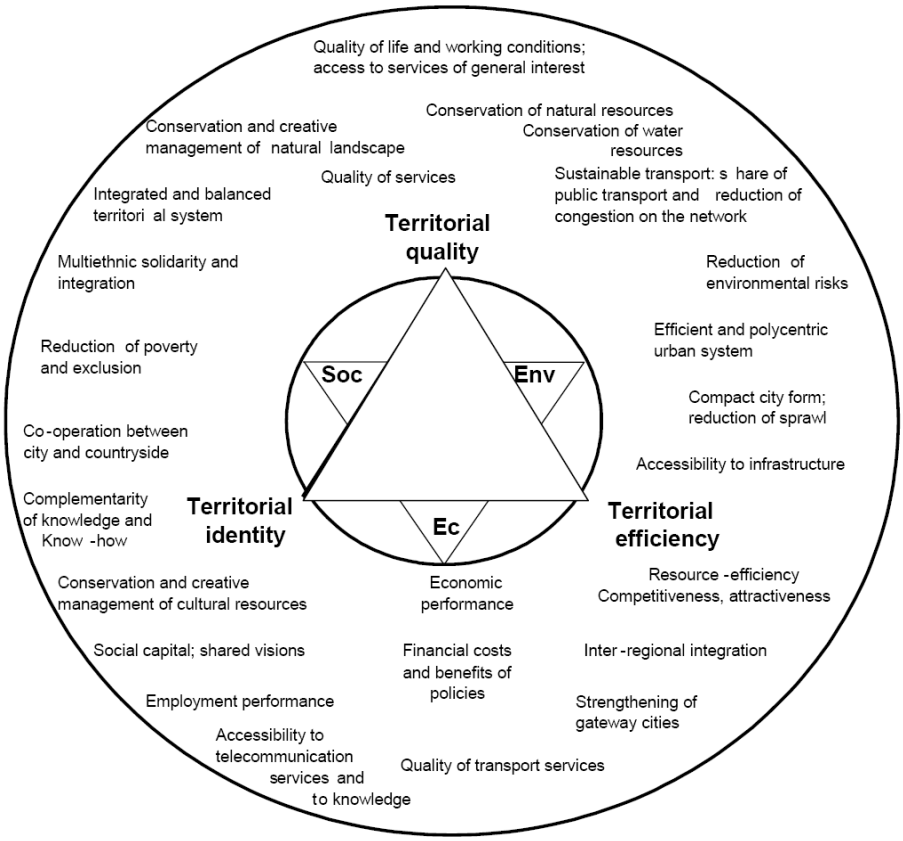

Figure 2 Components of the territorial cohesion in the Tequila Model

Source: Medeiros 2011, p. 17 drawing on Camagni 2010,

The Star model proposed by E. Medeiros (2011, p.17) originates, among others, from the critical analysis of the Tequila model. In particular, Medeiros argues that the Tequila model does not provide a sufficiently prominent place to the concept of polycentric development and territorial governance and that it erroneously positions the concept of the territorial efficiency between economic and environmental dimensions, while it should cover all territorial dimensions including the social and institutional ones (Medeiros 2011, 19 and others). The Star model features four dimensions:

a) Socioeconomic Cohesion dimension, also referred to as the distribution dimension of the territorial cohesion, is the economic and social cohesion interpreted in the traditional way, treated as part of the territorial cohesion pursued in order to alleviate excessive socioeconomic imbalances in space (the origin of the territorial cohesion concept).

b) Environmental Sustainability dimension following the ESDP idea of wise management of the natural and cultural heritage under which environmental consequences of territorial processes should be considered, i.e. the contribution of territory to conservation and development of nature or climate change adaptation and mitigation etc.

c) Territorial polycentricity dimension (mainly morphology) following the ESDP idea of polycentric and balanced spatial development in the EU as a fundamental goal of territorial development also contributing to the socioeconomic cohesion.

d) Territorial cooperation/governance dimension covering two aspects of one process – that of bringing territories closer together. The territorial governance is understood both as a (i)" process of the organization and co-ordination of actors to develop territorial capital in a non-destructive way in order to improve territorial cohesion at different levels" (Medeiros 2011, 22 drawing on ESPON 2006, 13) and as (ii) territorial co-operation offering an alternative to the typical 'hierarchical type of government'(Medeiros 2011, 23) and allowing to integrate public and private actors in management of territories.

The main weakness of the Star model is insufficient focus on competiveness as a dimension of territorial cohesion linked to territorial capital or territorial potential.

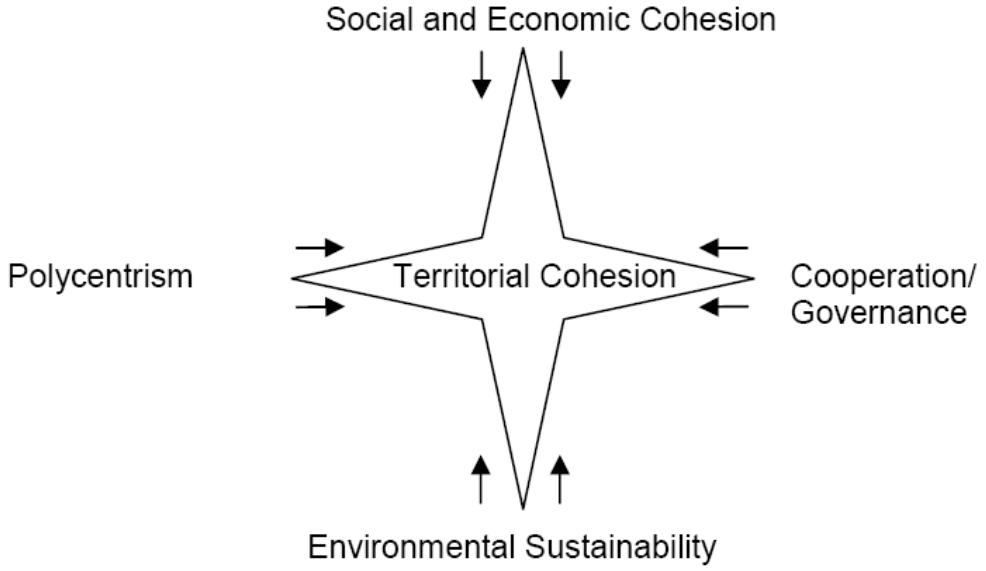

Figure 3 Components of territorial cohesion in the Star Model

Source: Medeiros 2011, 17

As a by-product of the search for territorial cohesion indicators, the INTERCO project also came up with proposals of main dimensions or even functions (roles) of the territorial cohesion (referred to as facets of the territorial cohesion, thematic entrance points of the territorial cohesion or storylines) (Böhme 2011; Gløersen and Böhme 2011). The project identified the following, non-mutually exclusive storylines on the territorial cohesion:

- territorial cohesion is about competitiveness that implies a strong focus on territorial potentials and the support of smart growth and the connectivity of Europe's economic centres but also on diversity of territories as well as the diversity of factors,
- territorial cohesion is about balanced development focusing on European solidarity and stressing inclusive growth, fair access to infrastructure services and the reduction of economic disparities,
- territorial cohesion is about place-based policy making, paying particular attention to local development conditions , identification and exploitation / use of tangible and intangible endogenous potentials, local networks (incl. clusters) and specificities of places and their comparative advantages,

- territorial cohesion is about the environment, ecosystem approach, resource-efficient and greener economy, tackling climate change,
- territorial cohesion is about the need to maintain dialogue with other sectors to strengthen the territorial dimension in various policy fields with key concerns on a better use of synergies between different policies (vertical and horizontal coordination) as well as on the actual costs of non-coordination.

The INTERCO came up with following dimensions of the territorial cohesion: strong local economies ensuring global competitiveness, innovative territories, fair access to services, markets and jobs, inclusion and quality of life, attractive regions of high ecological values and strong territorial capital and integrated polycentric territorial development (ESPON 2011, part B, 11).

Finally, one of the best descriptions of the content and the scope of the territorial cohesion is provided in the ARL paper (Böhme *et al*. 2008). The ARL came up with the five points illustrating what territorial cohesion is about:

- recognizing the territorial diversity,
- identifying potentials in relation to integrated development strategies in line with geographical specificities,
- acknowledging the territorial context, e.g. endogenous development potentials and fragilities, as well as exogenous factors such as the impact of developments in other territories, and the impacts of different sectoral policies at various levels of decision making,
- ensuring fair access to infrastructure and services,
- refining governance processes to encapsulate local and regional tacit knowledge and resources, needed for the development of integrated strategies and the identification of territorial potentials and fragilities,

Despite all of these documents, models and discussions, the concept of the territorial cohesion tends to remain general, referring to territorial diversity and harmonious development of all places (which is perhaps the reason for its attraction and common acceptance). The analysis conducted above may, nevertheless, lead to some conclusions on the essence of the territorial cohesion:

- Firstly, the territorial cohesion has become a separate, independent goal of the EU on the equal footing with economic and social cohesion, and in some models it is even treated as an umbrella concept embracing the latter,
- Secondly, the territorial cohesion brings to the forefront the necessity of temporal trade-offs, due to domination of the long-term perspective in the territory-shaping processes,
- Thirdly, the territorial cohesion pinpoints the need to take into consideration specificities of different type of territories in different types of human activities and interventions,
- Fourthly, the territorial cohesion remains a heterogeneous concept covering different issues. Two of them, however, seem to be the most prominent: governance (the integration of policies affecting the same territory in order to improve policy efficiency) and territory as a developmental asset (territorial capital, territorially bound social, institutional and natural resources).

Although those conclusions might seem pretty theoretical, they actually offer clear guidance for development programming at different geographical scales, including the EU level. Assuming that it is the smart, inclusive and green growth that is an overall objective of our activities as stipulated by the Europe 2020 Strategy, the following should be stated.

1. The message conveyed by the economic cohesion to decision makers is that attention should be paid to territorial distribution of prosperity achieved as a result of such development and excessive disparities should not be tolerated even if this might slow down the pace of the growth of the entire EU.
2. The concept of social cohesion conveys a message that convergence of prosperity by simple redistributive (welfare-type) measures is not sufficient, that all the EU citizens should be provided fair access to jobs and self-development opportunities even if the pace of the growth of the entire EU could be slowed down as a result.
3. The message contained in the concept of territorial cohesion is twofold. First of all, it tells that territory matters for smart, inclusive and green growth and therefore spatially blind policies should be turned into territorially sensitive policies i.e. ones tailored to the specificity of a given place as postulated by Barca (2009) in its place-based concept. In that context territorial cohesion means just a smart, green and inclusive growth achieved through horizontally integrated policies: social, economic and spatial as suggested by Vogelij (2010, 2). All the said is about the efficiency of development policies. The second message is that decision makers should pay attention to the quality of territory just as they pay attention to territorial distribution of prosperity or opportunities for self-development. In other words, sometimes it is well-worth to promote polycentricity of urban network and maintenance of strong performance of inner cities, protect cultural landscapes, limit urban sprawl and territorial fragmentation even at the expense of the pace of the growth of the entire EU.

And thus the concept of economic, social and territorial cohesion carries with it important concerns about trade-offs between growth and other values shared by societies and expressed in the process of public choice. In addition, however, the territorial cohesion entails important efficiency aspects that are not so clear (although highlighted in some OECD analysis) with regard to economic and social cohesion.

Summing up the entire section on the key notions, an apparent lack of consensus on their scope, content, interpretation and functions can be noticed. The following can, nevertheless, be concluded:

1. Growth and development belong to the most general and overarching policy goals, and usually carry positive connotations (despite the negative externalities which they might cause). They are associated with satisfaction of human needs or sustainable human well-being (Stiglitz, Sen, Fitoussi, 2009).
2. The socio-economic and territorial development notions are governed by different sets of values. While they sometimes reinforce each other (as the case is with territorial efficiency or agglomeration economies through networking), they also happen to be in conflict as regards the use of space. It is important to acknowledge that territorial development can be governed by its specific values and objectives (e.g. polycentric development) of at least uncertain relation to smart, inclusive and green

growth. In some models territorial cohesion seems to play the function of the ultimate objective of territorial development.

3. The territorial cohesion concept remains heterogeneous. It concerns both the desired state of territory and the way in which the territory should be managed in order to achieve both the desired state and the high level of prosperity (economic well-being) of the territory's inhabitants.
4. While the concept of the territorial cohesion brings the territory closer to the idea of smart, green and inclusive growth through the notion of territorial efficiency, it also puts some territorial values (the quality of territory) on top of such growth (thus becoming a "mitigating" factor of negative consequences for the application of the current economic model – see Farrugia, Gallina (2008)). This has been noticed by many scholars[5] and professionals, e.g. by P. Schön (2005) who pointed out that territorial cohesion aimed at strengthening both endogenous potential and territorial equity (equality) and by K. Böhme *et al*. (2008) claiming that „territorial cohesion address both territorial potentials and fragilities".
5. Territorial cohesion is integrative from its very nature nature. Its "focus is on territories and not on sectors, implementing territorial cohesion requires coordination of economic policies of member states as well as of sectoral policies and actions of the EU" (ESPON 2011, part C, 3).
6. Territorial integration is less frequently considered as an objective of territorial development; at least as far as EU documents are concerned. In some analyses it has been treated as part of territorial cohesion. However, the two concepts are not identical. For instance, territorial integration may be achieved through, for instance, co-operation between large cities at the expense of the smaller ones, thus contradicting the objective of polycentric development. In a majority of cases, however, territorial integration supports territorial cohesion e.g. by contributing to the formation of functional areas in line with the idea of functional geography. For instance, INTERCO authors put it clearly that „territorial cohesion is not conceivable without a high degree of cooperation between territories and between actors, at each step of the policy process" (ESPON 2011).

3 VASAB documents, their focus and content

The initial VASAB document, viz. the VASAB vision and strategy(-ies) (VASAB1994), was based on four values, including: development, environmental sustainability, freedom and solidarity (figure 4). The two initial evolved with time to form the objective of the sustainable development, while two others slightly dissolved within the EU *acquis* (with the gradual accession of majority of the Baltic Sea region /BSR/ countries to the EU). A more thorough examination of what VASAB promoted in its vision eighteen years ago (VASAB 1994,52-54) reveals, in fact, the ideas of: regional integration, economy of flows, agglomeration economies (also through networking), sustainable development, enhancement of local endogenous potential, integrative approach to programming development and balanced socio-economic development in space (with focus on specific types of territories). Integration was given prominent place not only due to the efficiency reasons but also as an axiological paradigm of enhancement of "mutual enrichment among regions and nations" (VASAB 1994,

[5] Also in Damsgaard et al. (2011) the territorial cohesion is characterised as "harmonising different development paradigms such as sustainability, convergence (solidarity between regions), and regional competitiveness" and using a normative statement that "the best balance of economic, environmental and social needs has to be specific to each particular territory" .

52). In that vision the concept of spatial cohesion was also put forward (VASAB 1994, 10-11) as a complement to the economic and social cohesion. Nowadays it might be interpreted in the context of economy of flows (networking and co-operation), but its initial focus seemed to be on counteracting territorial disparities in growth and prosperity.

Figure 4 VASAB values, as formulated in VASAB 1994

Source: own elaboration drawing on VASAB 1994

The core of the VASAB vision was formed by fourteen goals (Zaucha 1998). Divided into four pillars: the settlement structure (pearls), transport network (strings), open areas (patches) and functioning of the spatial planning system, they can be presented as the following statements:

- A competitive system of cities gains value by co-operation across the Baltic Sea and with Europe.
- The system of cities ensures spatial cohesion.
- Links provided between urban areas and rural hinterland support regional economic and environmental balance.
- The cities offer an attractive urban environment for inhabitants and investment.
- The Baltic Sea Region (BSR) mobility network facilitates environment-friendly transport.
- The mobility network provides conditions for effective integration within the BSR and with the world.
- Energy production relies increasingly on renewable and environment-friendly sources of energy.
- Cross-border co-operation contributes significantly to spatial economic and social cohesion.
- Islands function as a tourist core in the BSR.
- The coastal zone is planned, careful balance between development and protection being maintained.
- A Baltic Network of nature areas is designated and protected,
- Spatial planning contributes to harmonization and spatial cohesion across borders,

- Spatial planning is based on the principles of subsidiarity, participation and transparency,
- Spatial planning contributes to the co-ordination of sectoral and regional planning.

Figure 5 below present all VASAB goals in an integrative manner.

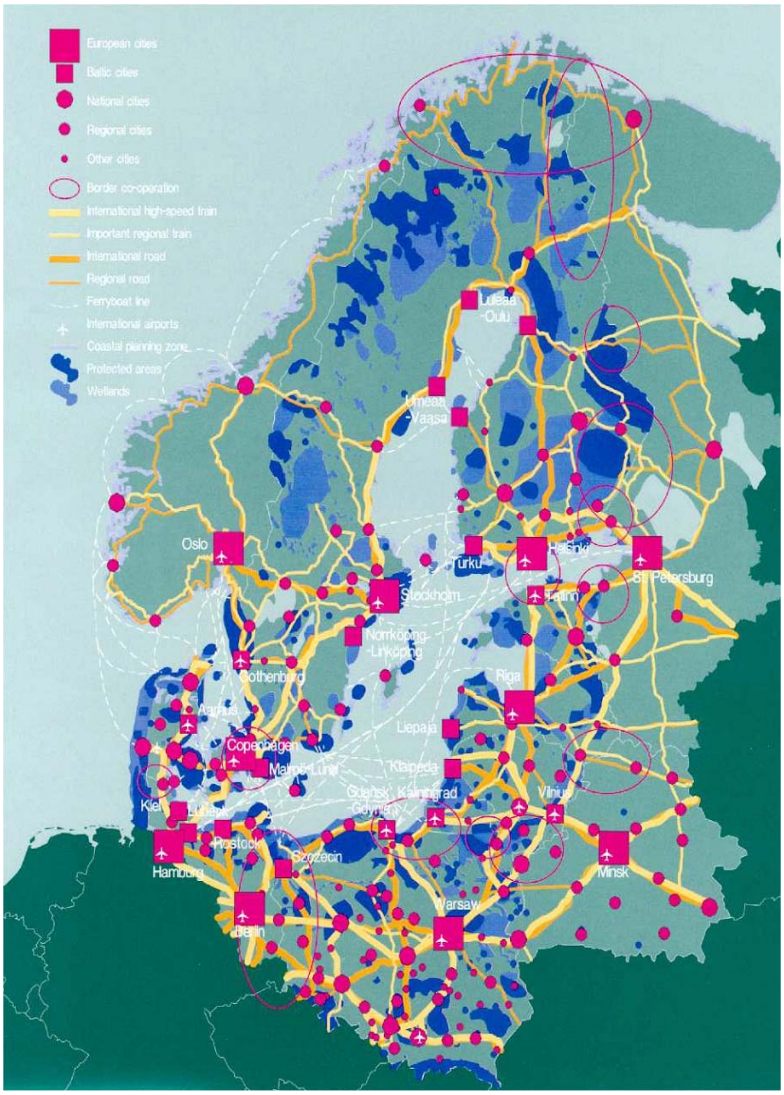

Figure 5 VASAB vision of 1994

Source: VASAB 1994

The next VASAB document named "[From Vision to Action (Zaucha 1996) paved the way for implementation of the VASAB Strategy of 1994. It listed eight pilot projects that VASAB countries agreed to execute (figure 6). The common recommendations for spatial planning of the coastal zone in the Baltic Sea Region were also attached to the document. The most important part of "From Vision to Action" was devoted to the need of integrative implementation of the VASAB strategy of 1994, i.e. to the close co-operation of VASAB with other Baltic networks and stakeholders (e.g. the ministers for regional development, ministers for environment, ministers for transport). The document also extended spatial planning to the marine (with focus on sea transport) and meant the first VASAB attempt to elaborate a spatial monitoring system for the region.

a. Orsha-Minsk-Brest zone

b. THTR Zone (Tampere-Helsinki-Tallinn-Riga)

c. Karelia-Atlantic zone (Petrozavodsk-Vaasa-Umea)

d. TEM/TER (the South East Baltic co-operation)

e. Arch of Bothnia (Lulea-Haparanda-Tornio-Kemi-Olu city networking)

f. Project on tourism development of German-Polish border

g. Project of transborder co-operation of Latvia, Lithuania and Belarus,

h. Common recommendations for spatial planning of the coastal zone in the Baltic Sea Region.

Figure 6 VASAB pilot projects and common actions of 1996

Source: Zaucha 1996, 21

The third VASAB document, titled "VASAB 2010 Plus" (VASAB 2001), took form of an Action Programme. Its underlying paradigm was sustainable development. Such development was defined by VASAB as the development (of territorial structures) enhancing the ability of future generations to meet their needs, while balancing the developmental goals without promoting one single goal to the detriment of others (Damsgaard, Groth 1998,6). The key themes offered, in fact, a kind of operational definition of the transnational sustainable development strongly rooted in spatial concepts and notions.

The document identified several challenges for spatial policies regarding: the BSR global position (competitiveness, diversity, unity), socio-economic development and integration, natural environment, settlement system, internal structures of urban regions, mobility and energy networks, rural and cultural landscapes, coastal areas, BSR islands, national spatial development plans and, finally, spatial cohesion. The last term was defined in the document (VASAB 2011,15) by explaining that spatial cohesion meant low disparities across BSR

borders regarding innovation and welfare, spatially more balanced growth within countries, and connectivity necessary for regional competitiveness and pan- Baltic integration. As an illustration of that particular issue a map was developed showing the regional GDP/per capita disparities (figure 7).

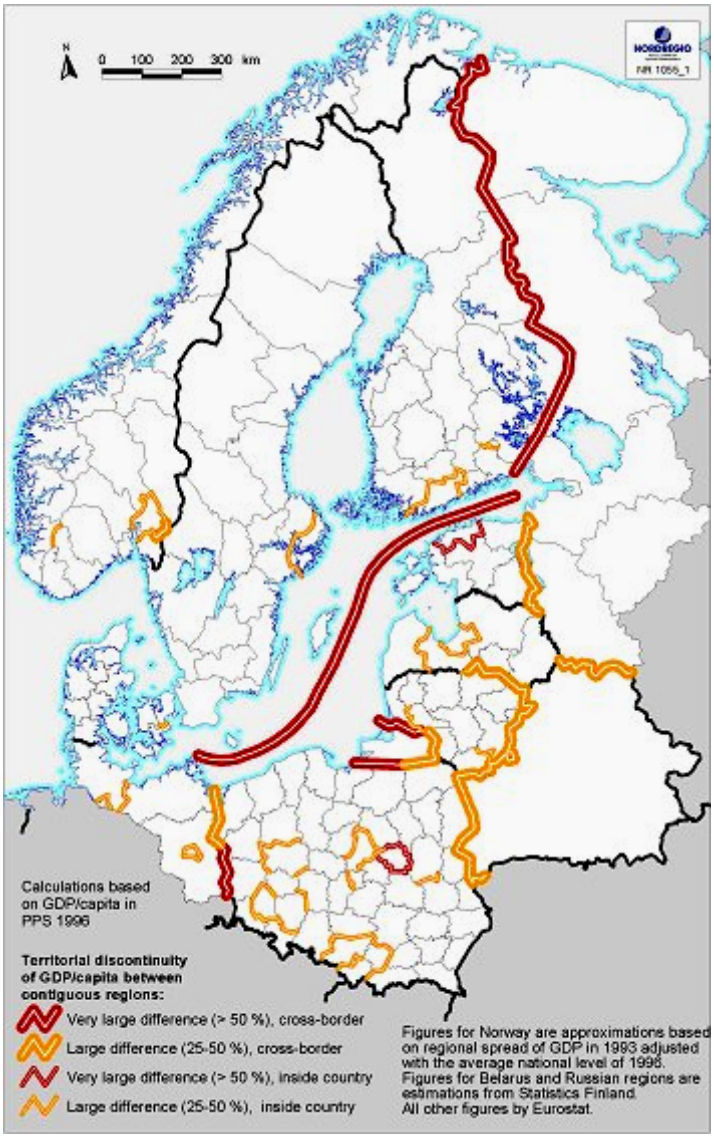

Figure 7 Regional GDP/per capita disparities in the Baltic Sea region in 1996

Source: VASAB 2001, 25

The focus of the Action Programme was on issues requiring transnational co-operation of spatial planners in order to enhance sustainable development. Such development was seen in the context of other important European documents such as the ESDP and CEMAT Guiding Principles. The six key themes identified by VASAB and listed below (figure 8) were considered as a VASAB vehicle for implementation of the ideas underlying those aforesaid documents under BSR specific conditions. The key themes offered a balanced policy mix with regard to sustainable spatial development:

1. Co-operation of urban regions on key issues of sustainable development.

2. Strategic development zones important for transnational integration within the BSR.
3. Transnational transport links important for integration across-BSR and with Europe.
4. Diversification and strengthening of rural areas.
5. Development of transnational green networks, incl. cultural landscapes.
6. Integrated development of coastal zones and islands.

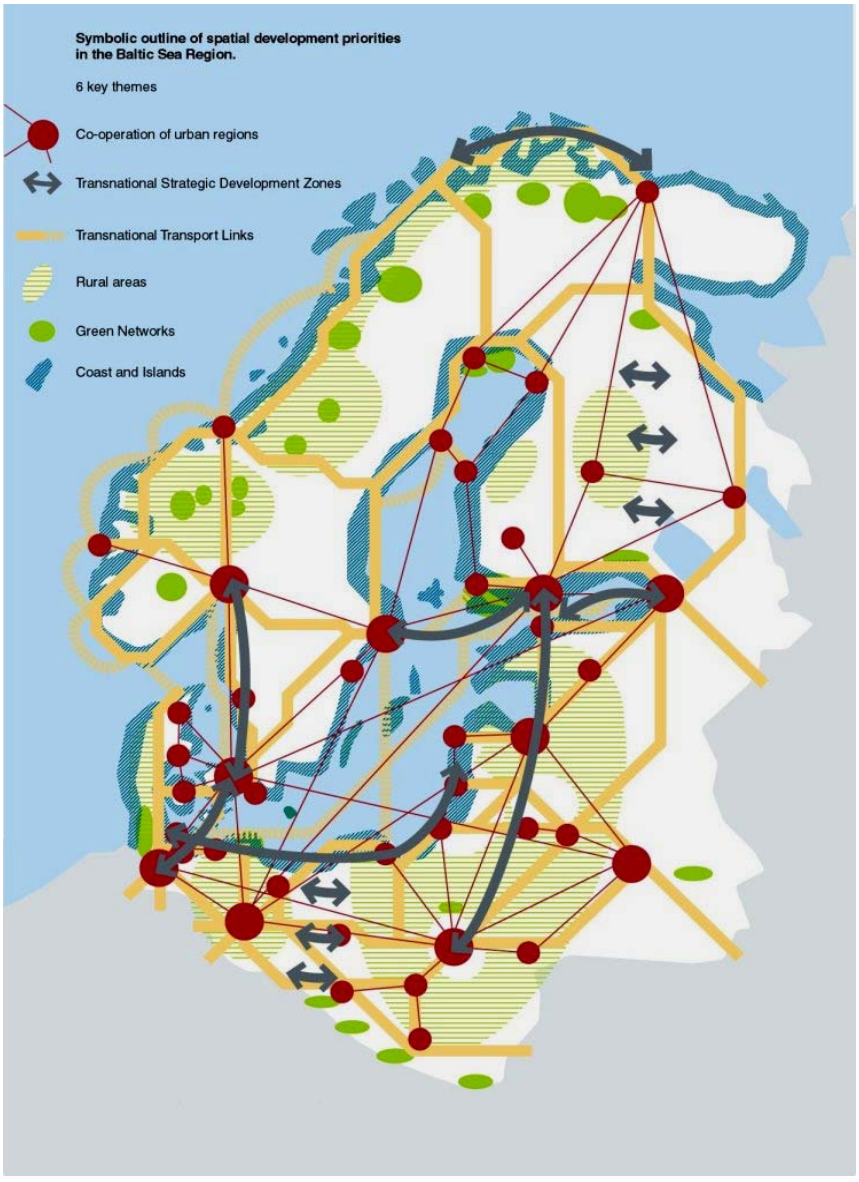

Figure 8 VASAB key themes of 2001 at one map

Source: an unpublished map from the archives of the VASAB Secretariat in Gdańsk

A closer look at the themes reveals that a new territorial concept of spatial development zone was, in fact, proposed and elaborated in the "VASAB 2010 Plus". Strategic development zones were defined (VASAB 2001,25) as relatively

large territories (exceeding the capacities of inter-municipal co-operation) characterised by the superposition of some (or all) of the following characteristics: closeness to borders, high trans-border disparities in economic and social indicators, high development potentials to be activated by transnational cooperation, relatively low cross-border exchange intensity (trade, business contacts, private travelling), and – finally - deficient infrastructure and regulations for border crossing. Such zones were considered as possessing significant economic growth potentials not adequately used. The concept was implemented in several BSR countries e.g. in Poland (Matczak *et al.* 2004), Germany, Lithuania, Latvia and Estonia, but only with moderate achievements.

Preparation of the "VASAB 2010 Plus" had been proceeded by the comprehensive analytical work financed[6] by the VASAB Plus project of INTERREG II C. Several spatial trends and spatially sensitive processes had been examined and the results were presented in analytical monographs on the spatial development of the BSR (Groth 1998;2001; Groth *et al*. 2000; Hanell *et al*. 2001; Platz 2001). The pity was that those efforts were not continued on a systematic basis. Only ten years later similar but different (adjusted to a new spatial situation) spatial analysis (Schmitt and Dubois 2008; Zaucha *et al.* 2008) were conducted as a part of preparation of the VASAB Long-Term Perspective /LTP/ (VASAB 2009).

With the massive enlargement of the EU in 2004 the issue of spatial integration popped out on the VASAB agenda once more, while the sustainable development was still recognised as an important VASAB objective. As the Gdańsk Declaration put it, "a major goal of the VASAB cooperation is the better spatial integration of the BSR and the improved integration of the BSR with other areas of Europe, resulting in territorial cohesion" (VASAB 2005,3). In this document the territorial cohesion was recognised by VASAB and understood as an improvement of accessibility and connectivity, and therefore it was closely associated with the concept of the spatial integration. i.e. the earlier said collaboration, intensification of flows, links and connections in space. The background document to the Gdansk Declaration titled "Connecting Potentials" was strongly anchored in the paradigm of the growth, competitiveness and innovations (providing a link to the Lisbon and Gothenburg Agendas). The document recapitulated the experience with implementation of the VASAB action programme of 2001 and proposed focusing on four issues only: polycentric urban networking, spatial accessibility, transnational development zones and management and planning of the sea and coast. The first three themes are ones well-known from the previous VASAB documents. VASAB experience only proved that it was worthy to focus on them. They offered a specific added value in terms of transnational spatial co-operation. However, maritime spatial planning was a new task for VASAB that first time appeared in this document.

In the recent VASAB strategy (VASAB Long-Term Perspective /LTP/ for the Territorial Development of the BSR) (VASAB2009) the territorial integration still remains an important developmental objective, while more attention is given to the notion of the territorial cohesion (Zaucha and Fischer 2009:624). In fact, the LTP is written as an illustration how regional co-operation (ministerial network) such as VASAB can complement the EU Cohesion Policy with a territorial dimension and how it can enhance territorial cohesion at a larger geographical scale – both terrestrial and maritime. The meaning of the territorial cohesion has changed since 2005, though. It evolves towards an umbrella (overall) concept capturing the contribution of territorial structures to development. Despite the misleading "cohesion" component in its name, the concept should not be erroneously mistaken for the convergence of well-being or level of living in space

[6] In a similar manner the preparation of the LTP (VASAB 2009) was financed by the TACIS/INTERREG III B project EastWest Window .

but it should rather point out towards accumulation and maintenance of the territorial capital and/or more integrative management patterns in space (i.e. the integration and territorialisation of policies).

The LTP has been growth driven. This can be easily seen from the composition of the action agenda (22 actions related to urban networking and urban-rural co-operation, internal and external accessibility and maritime spatial planning/management listed in the box). Figure 9 presents the LTP actions at one map.

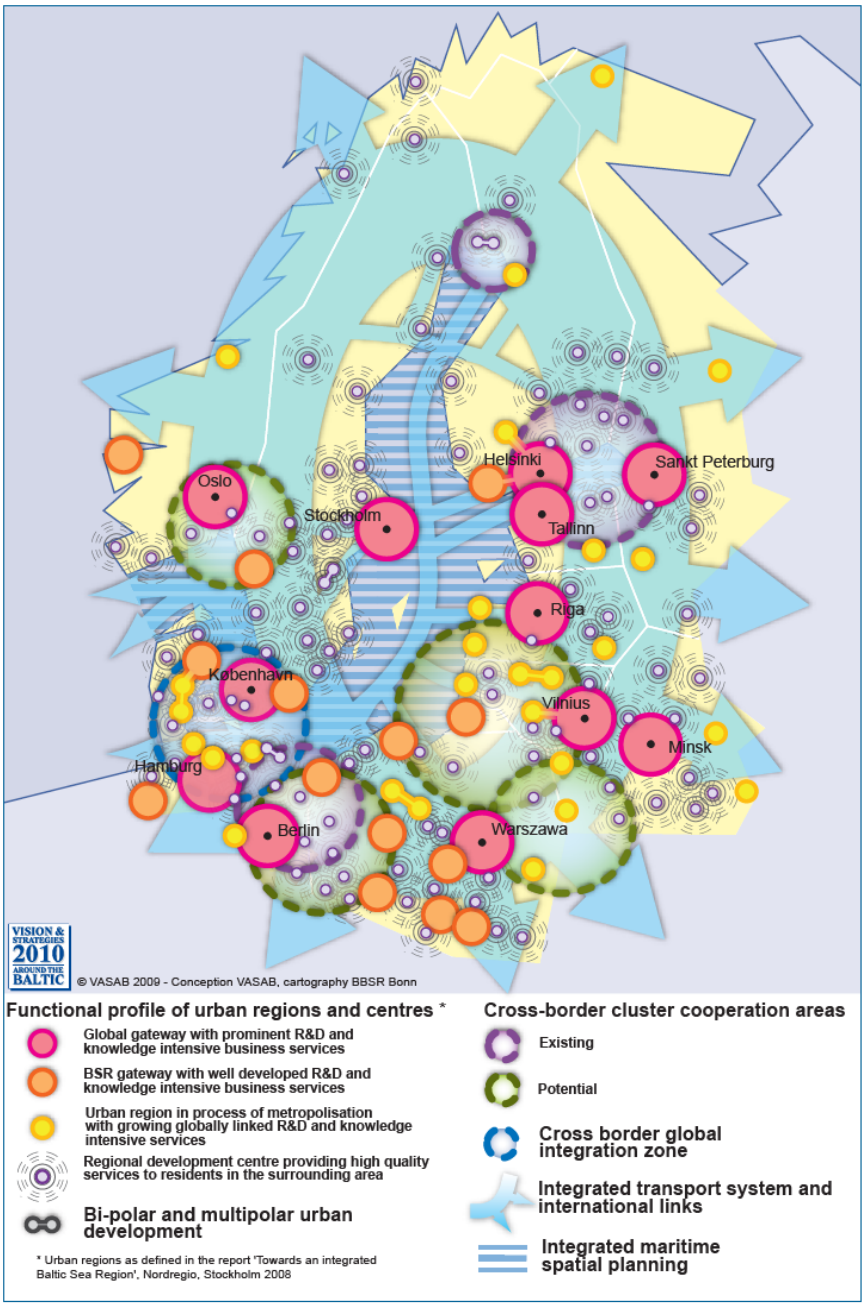

Figure 9 Main actions of the VASAB Long Term Perspective of 2009

Source: VASAB 2009, 13.

ACTION AGENDA OF THE LTP

ACTION AGENDA 1: Develop and implement a BSR cooperation strategy for the metropolitan areas of the whole Region by involving relevant urban cooperation actors (e.g. business support organisations, investment agencies, marketing agencies and national/regional authorities, etc.).

ACTION AGENDA 2: Implement transnational networking actions to connect the research and development potentials of the eastern and western BSR metropolises and thereby to enhance the innovation potential of the Region.

ACTION AGENDA 3: Map the territorial cluster potentials of non-metropolitan areas in North-West Russia and Belarus and develop measures for facilitating the knowledge and technology transfer to these territories

ACTION AGENDA 4: Develop the measures for harmonising the investment plans of Saint Petersburg with the macroregional economic integration needs.

ACTION AGENDA 5: Create and spread within the BSR a model solution on using a stakeholder approach in enhancing the potential of small and medium-sized cities and towns within the metropolitan areas as international centres of innovation and specialised services.

ACTION AGENDA 6: Consider launching cross-border cluster cooperation initiatives with North-West Russian entities in the economic branches with high BSR integration potential.

ACTION AGENDA 7: Launch joint transnational and cross-border initiatives to combine the development of metropolitan areas and their rural surroundings in a better way.

ACTION AGENDA 8: Activate transnational networking initiatives to facilitate the foreign direct investments into small and medium-sized cities outside the metropolitan areas, based on the documented success stories in the BSR and other macroregions.

ACTION AGENDA 9: Organise a pan-Baltic conference to work out measures for counteracting the impact the demographic trends and labour market development have on the urban-rural polarisation and social cohesion in the Region.

ACTION AGENDA 10: Address the obstacle of cross-border deficits in primary (TEN-T) and secondary (interregional connections) transport networks of the BSR countries for developing transborder labour markets in the Region.

ACTION AGENDA 11: During the revision of the EU transport policy and follow-up work on the EU Strategy for the Baltic Sea Region, consider the following examples of road and rail links, the current state of which pose the challenge for the integration of transport networks in the BSR from the macroregional perspective (7 links named).

ACTION AGENDA 12: In the EU Strategy for the Baltic Sea Region and its follow-up work, consider the following air transport issues of relevance to the BSR territorial cohesion (3 items named)

ACTION AGENDA 13: Monitor the trends in airborne connectivity of the BSR metropolises and report about the prevailing shortcomings and the possible improvement measures at the transnational political meetings

ACTION AGENDA 14: Develop the Motorways of the Sea in the Baltic Sea Region as a systemic solution to enhance the cross-border scale integration and a transfer of goods between the EU, the eastern neighbours, Central Asia and the Far East. Consider in the revised EU transport policy the extension of the Baltic Sea

Motorways system to include further short-sea links between the EU ports, as well as connections from the EU ports to Kaliningrad and Saint Petersburg.

ACTION AGENDA 15: Initiate work on the intelligent sea transport corridors in the BSR (separated and electronically monitored traffic routes) by activating at least one pilot project for a corridor with high traffic volumes in an environmentally sensitive area.

ACTION AGENDA 16: Analyse the territorial development implications of more East-West connections to secure a fully integrated BSR transmission grid.

ACTION AGENDA 17: Consider a BSR Energy Supergrid to interconnect the power plants producing renewable energy in the BSR sea areas as a possible component of actions towards a fully integrated BSR transmission grid.

ACTION AGENDA 18: Analyse and demonstrate solutions for better utilisation of renewable resources on the pan-Baltic scale and thus a higher energy independency of the Region (exemplary topics named).

ACTION AGENDA 19: Map the coverage status for the ICT services in the BSR cross-border territories and develop joint initiatives to address the detected disparities.

ACTION AGENDA 20: Arrange a BSR conference together with relevant stakeholders in order to develop a common approach for the Baltic Sea Maritime Spatial Planning.

ACTION AGENDA 21: Prepare and implement demonstration projects for some Baltic Sea areas of severe use conflicts (e.g. the Gulf of Finland, the Gulf of Riga, Norra Kvarken, southern part of the Gulf of Bothnia, including the archipelagos, the Danish straits, and offshore areas south and east of Öland and Gotland, as well as other appropriate Baltic Sea locations).

ACTION AGENDA 22: Initiate joint capacity building actions in maritime spatial planning to ensure exchange of experience, promote education availability and to increase competence in that field at the BSR level.

In fact, all VASAB documents pay great attention to the BSR divides. This has not changed since the beginning of the VASAB existence although the definition of divides and their composition has slightly evolved over time. Divides were treated both as a policy problem and a source of particular market potential. A comprehensive list of divides addressed by VASAB in a number of documents is listed below:

- a divide, reflecting political circumstances, between countries being EU members and countries not foreseeing EU accession;
- an East/West divide, reflecting, on the whole, sharply differing levels of economic development;
- a North/South divide, reflecting, in the first instance, sharply differing population densities;
- a variation between small/large countries, influencing the relative importance of the Baltic Sea Region to a respective country;
- a physical divide resulting from the fact that the Baltic Sea takes a central part of the Region.

These divides have influenced VASAB thinking on both the integration and the spatial cohesion. Therefore in addition to the set of spatial planning objectives which promote spatial cohesion and integration in all pan-European regions (such as polycentric urban development, equal access to infrastructure and knowledge and careful management of nature and cultural assets), the VASAB has

formulated some specific objectives related to those issues in the Baltic Sea Region, which include:

a. improving physical links, mainly transport systems across the Baltic Sea Region and between the Baltic Sea Region and the rest of Europe;
b. sustaining population in the already extremely sparsely populated areas of the northern part of the Region;
c. enhancing integration across the sea;
d. supporting transformation of the sectors lagging behind (primary sectors in particular) in the eastern part of the Baltic Sea Region;
e. assisting Russia (the Kaliningrad exclave in particular) and Belarus to integrate with the rest of the Baltic Sea Region.

The above presented evolution of the understanding of the key goals guiding territorial development in the BSR leads to the conclusion that their actual names, definitions and interpretations are context-dependent. The goals and objectives have evolved in line with the changes in the spatial structure of Europe, its political and economic geography, quality of life of European citizens, and consciousness of an average citizen. Such evolution has not been of a catastrophic character. Just the opposite, the new concepts have rather complemented and extended the existing ones, thus reinforcing one another. Therefore for designing a long-term oriented monitoring system of the territorial development instead of focusing on a single concept, an attempt would be recommendable to capture all the important "building blocks" of the European and BSR debate on the rationale of territorial development – in order to identify the main components that should be monitored in a long run

4 The strategic documents at the European level - spatial policies and the EU Cohesion Policy

4.1 Intergovernmental process

While the "Europe 2000" and Europe 2000+" reports presented a rather dominant descriptive and analytical attitude it was the "European Spatial Development Perspective" that paved the way for macro-scale territorial approach in policy making. The ESDP provided three integrated policy guidelines for spatial development of the EU territory:

1. Polycentric Spatial Development and a New Urban-Rural Relationship with focus on: polycentricity and balanced development, dynamism and competitiveness of cities, indigenous development of rural areas and functional urban-rural linkages.
2. Parity of Access to Infrastructure and Knowledge covering: development of transport and communication infrastructure at different geographical scales (accessibility), intermodality (integrated transport and communication), access to public services, diffusion of innovation and knowledge.
3. Wise Management of the Natural and Cultural Heritage encompassing: ecological networks, protection of cultural and natural assets (e.g. soil, water resources, cultural landscapes) and their wise use, integration of conservation and development policies via integrated strategies.

On top of that, the ESDP promoted an integrative approach to the development through networking and co-operation, so-called vertical and horizontal coordination (ESDP 1999, 35-36).

A year later the Council of Europe, Committee of Planning Ministers (CEMAT 2001) elaborated the *Guiding Principles for Sustainable Spatial Development of*

the European Continent that were adopted by the Committee of Ministers on 30 January 2002 at the 781st meeting of the Ministers' Deputies. The document underlines territorial dimension of sustainable development aiming, in particular, "at bringing the economic and social requirements to be met by the territory into harmony with its ecological and cultural functions and at contributing in this way to long-term, large-scale and balanced spatial development". To achieve these, the document postulates, similarly to the ESDP, close co-operation between spatial planning and sectoral policies. To the traditional three pillars of sustainability (social, economical and environmental), the *Guiding Principles* added, by the way, a fourth dimension: cultural sustainability.

As regards the spatial development policy, it was explained as the policy influencing the spatial structures. Diversity was regarded as „an inestimable potential for sustainable spatial development" and territorially balanced development (polycentric development pattern) as the key value or objective. The *Principles* also put attention to spatial integration at different geographical scales, from the global down to local. A separate section was devoted to the role of private sector in spatial development.

The document stated ten principles of the development of the entire European continent, more balanced regionally:

1. Promotion of territorial cohesion through a more balanced social and economic development of regions and improved competitiveness (with territorial cohesion meaning a polycentric development pattern plus connectivity).

2. Encouraging the development generated by urban functions and improving the relationship between the town and the countryside.

3. Promotion of better balanced accessibility,

4. Developing access to information and knowledge.

5. Reducing environmental damage.

6. Enhancing and protecting natural resources and the natural heritage.

7. Enhancing the cultural heritage as a factor of development.

8. Developing energy resources while maintaining safety.

9. Encouraging sustainable tourism of high quality.

10. Limitation of the impact of natural disasters.

For different types of territories separate principles have been formulated. In general, the aspects (goals) of territorial development are very similar to the ones featured in the ESDP, with an exception of the added components of tourism and natural disasters.

In 2007 the Ministers responsible for urban development and territorial cohesion in the EU countries adopted the Territorial Agenda of the EU. The document reinforces the ESDP approach by operationalising its three guiding principles (referred to as the "aims" in the text of the Agenda) with six priorities for the territorial development of the EU:

1. Strengthening polycentric development and innovation through networking of city regions and cities.
2. Strengthening new forms of partnership and territorial governance between urban and rural areas.
3. Promoting regional clusters of competition and innovation in Europe.
4. Strengthening and extension of trans-European networks.

5. Promoting trans-European risk management, including the impacts of climate change.
6. Strengthening ecological structures and cultural resources as an added value to development.

The Agenda was updated under the Hungarian Presidency of the EU Council in order to better reflect situation of the EU after enlargement and to take into consideration the impact of the economic slowdown. The updated document (Territorial Agenda of the EU 2020) was adopted by the Ministers responsible for spatial planning and territorial development at their informal meeting in May 2011. Territorial cohesion has been regarded as a common goal for a more harmonious and balanced state of Europe and the Agenda itself as the policy framework to support the territorial cohesion in Europe. The function of the document was defined by declaring that it was supposed to:

- provide strategic orientations for territorial development,
- foster integration of territorial dimension within different policies at all governance levels,
- ensure implementation of the Europe 2020 Strategy according to the territorial cohesion principles.

Compared to its predecessor, the Territorial Agenda 2020 pays more attention to integrative development and functional linkages which in the previous draft were mainly restricted to urban and urban-rural co-operation. It attributes more importance to the territorial developmental assets as those that cannot be easily moved in the global economy (a factor important during the period of economic slowdown). It recognises the significance of local and regional actions for development of the entire EU. However, both documents acknowledge diversity of territories as the potential for development, and come up with similar priorities with only moderate differences described above. The priorities formulated under Agenda 2020 are listed below:

1. polycentric and balanced territorial development promotion:

- polycentric and balanced territorial development of the EU as the key element of achieving territorial cohesion,
- cities as centres contributing to the development of their wider regions (the aspect of functional regions),
- polycentric territorial development fostering the territorial competitiveness of the EU territory also outside the core 'Pentagon area',
- city networking improving performance in European and global competition,
- small and medium-sized towns playing a crucial role at the regional level so that polarization between capitals, metropolitan areas and medium-sized towns on the national scale should be avoided.

2. Encouraging integrated development in cities, rural and specific regions:
   - a need for integrated and multilevel approach in urban development and regeneration policies,
   - cooperation and networking of cities contributing to smart development of city regions at varying scales in the long run, a need to build responsibility of city authorities for the development of their wider surroundings,
   - a need to look beyond city administrative borders and focus on functional regions, including peri-urban neighbourhoods,
   - rural, peripheral and sparsely populated territories as providers of ecological functions and other important services requiring enhancement of their accessibility, entrepreneurship and local capacities,
   - urban-rural interdependence to be recognised through integrated governance and planning based on broad partnership,
   - joint unleashing of specific potentials of the Art. 174 territories by actors from different states or regions in an integrated way.
3. Territorial integration in cross-border and transnational functional regions (a new one):
   - integration of territories through territorial cooperation as an important factor in fostering global competitiveness through better utilization of potential divided by borders (the creation of a critical mass for development),
   - a need for transnational and cross border integration of regions to go beyond cooperation projects and to be better embedded within national, regional and local development strategies.
4. Ensuring global competitiveness of the regions based on strong local economies (new):
   - social capital, territorial assets, and the development of innovation and smart specialisation strategies in a place-based approach playing a key role in ensuring competitiveness,
   - integration of local endowments, characteristics and traditions into the global economy, contributing to the reducing of vulnerability to external shocks.
5. Improving territorial connectivity for individuals, communities and enterprises:
   - fair and affordable accessibility to services of general interest, information, knowledge and mobility as an essential component of the territorial cohesion,
   - decentralized, efficient, secure and environmentally-friendly production and use of renewable and low-carbon energy,
   - a need for sea-overland connections, efficient airport-railway relationships and inter-modal transport solutions especially within city-regions,
   - a need for further development of Trans-European networks (TEN-T) linking the main European centres, such as capitals, metropolitan regions and TEN-nodes and improving linkages between primary and secondary transport systems,

- development of secondary transport networks,
- development of transport connections across territorial barriers,
- improving accessibility of urban centres located in peripherial regions.

6. Managing and connecting ecological, landscape and cultural values of regions.
   - well-functioning ecological systems and the protection and enhancement of cultural and natural heritage as important conditions for long-term sustainable development,
   - integration of ecological systems and areas protected for their natural values into green infrastructure networks at all levels,
   - development of joint risk management,
   - special attention – if needed – paid to cultural landscapes in order to make best use of these assets (environment-friendly job creation and strengthening their recreational functions as a complement to conservation),

improvement of regional and local identity by strengthening awareness and responsibility of local and regional communities towards their environments, landscapes, cultures and other unique values.

4.2 Territorial cohesion as the shared responsibility between the EU Commission and the Member States

In the meantime the aforementioned intergovernmental process on spatial planning and development was upgraded through an added Community perspective. Territorial cohesion has become the legitimate component and dimension of the European cohesion policy as a new goal of the European Union (EU) introduced by the Treaty of Lisbon (Art 3.TEU).

An important contribution to the understanding of the first component i.e. the role of territorial cohesion in policy making (as an instrument pursuing integrative territorial approach to policies) has been provided by Barca (2009). His "place-based approach" puts emphasis on endogenous potentials (both already accumulated and potentially obtainable by a given territory) and adjusts intervention to the spatial (territorial) context of local or regional specificity. As stated by Barca (2009, p.4), such an approach shows an intentional focus on: 'the place specificity of natural and institutional resources and of individual preferences and knowledge; the role played by the (material and immaterial) linkages between places; and the resulting need for interventions to be tailored to places'. Barca highlights the role of appropriate institutional set up processes able to foster a dialogue between endogenous and exogenous developmental forces.

The recently adopted EU "Europe 2020" strategy pays little attention to the territorial issues, although territorial development remains one of the key preconditions for its successful implementation. Therefore, the Polish Presidency of the EU Council has made an attempt to identify the linking issues between this document and the Territorial Agenda of EU 2020. In effect, five territorial keys were identified that require attention in the implementation process of the "Europe 2020" document (Böhme *et al* 2011):

1. Accessibility
2. Services of general economic interest
3. Territorial capacities/ endowments/ assets
4. City networking
5. Functional regions

Territorial Cohesion has been introduced to the programming of EU interventions financed from the Structural (CSF) Funds. In the Commission Staff Working Document *Elements for a Common Strategic Framework 2014 to 2020* (CEC 2012) an emphasis was put also on integrated territorial development. The adjective "territorial" implies development which pays attention to specific features and endowments of different EU territories and regions. Therefore the Commission will want the Member States to make the programmes launched under the *Common Strategic Framework (*CSF) i.e. the former Structural Funds reflect the diversity of European regions, "whether in terms of employment and labour market characteristics, commuting patterns, population ageing and demographic shifts, cultural, landscape and heritage features, climate change vulnerabilities and impacts, land use and resource constraints, institutional and governance arrangements, connectivity or accessibility, and linkages between rural and urban areas" (CEC 2012,12). This statement might be considered as an indication of territorialisation of the EU programming process and abandoning territorially-blind approach based on the "one model fits all" principle. When designing their partnership contracts and programmes the Member States and regions should therefore take into account, among others, development potential and capacity, the major challenges, bottlenecks and missing links and innovation gaps and come up with solutions based on functional geography, i.e. transcending administrative boundaries and national borders in a similar way as the challenges do. The Commission will also ask the Member States to apply an integrated approach that would link Europe 2020 Strategy with regional and local actors while developing the partnership contracts. The key shortcoming is that the Commission has presented the territorial cohesion in this document in the context of development problems intensified by geographic or demographic features (CEC 2012, 12) instead of the development potential.
The proposal of the Common Provision Regulation identifies eleven thematic objectives. This should allow for concentration of funds and increase efficiency of EU interventions. The thematic objectives concern the following issues:

1. Research and innovation.
2. Information and communication technologies (ICT).
3. Competitiveness of Small and Medium-sized Enterprises (SMEs).
4. Shift towards a low-carbon economy.
5. Climate change adaptation and risk prevention and management.
6. Environmental protection and resource efficiency.
7. Sustainable transport and removing bottlenecks in the key network.
8. Employment and support to labour mobility.
9. Social inclusion and combating poverty.
10. Education, skills and lifelong learning.
11. Institutional capacity building & efficient public administration.

At present the objectives are spatially blind. The notion of territory has been used only a few times in the document (CEC 2012b) with regard to three priorities only: (i) social inclusion in the context of the territorial dimension of poverty (its spatial concentration) and social innovation as a vehicle for enhancement of territorial cohesion, (ii) education as a means of reducing territorial disparities, and, finally, as the (iii) institutional capacity in the context of territorial pacts. Also the maritime spatial planning has been mentioned under the theme of environmental protection and resource efficiency.

For the sake of promoting integrated approaches to territorial development, the proposal for a Common Provisions Regulation provides for two new mechanisms

to facilitate the development of local and sub-regional approaches: the Community Led Local Development and Integrated Territorial Investments for the ERDF, ESF and Cohesion Fund (CEC 2012, 9). The first mechanism is supposed to provide support for 'bottom-up' actions defined by local stakeholders in line with the local needs and specificities but respecting priorities set at a higher level. Such actions can be eligible only on part of Member State territories as defined in the partnership contracts. Integrated approach, territorial point of departure and attention to different needs of different territories can be spotted here. The second mechanism supports integration of funding sources and policies. „An Integrated Territorial Investment (ITI) is an instrument which provides for integrated delivery arrangements for investments under more than one priority axis of one or more operational programmes. Funding from several priority axes and programmes can be bundled into an integrated investment strategy for a certain territory or functional area". Also in this respect a territorial point of departure and support for functional geography can be noticed.

It is extremely difficult to find out at the current stage what type of territorial indicators will be necessary for the preparation of partnership contracts and operational programmes. One can only guess that they might include standard accessibility indicators to education and ICT, indicators dealing with transport and general accessibility, indicators related to territorially bound resources in – first of all - the domain of renewable energy, indicators on poverty, inclusion, human capital and social capital at low (local) level of spatial resolution, indicators on functional labour markets, networking and economy of flows, on fragmentation and connectivity of biotopes, and – last but not least - on several spatial aspects related to exploitation of the maritime space. However, this is only a guess.

4.3 EU Strategy for the BSR

The European Union Strategy for the Baltic Sea Region (EUSBSR) was adopted by the European Commission in June 2009, and endorsed by the European Council in October 2009 (CEC2009). The strategy tackles the problems that cannot be solved on a national level but for which the EU level is too high to be efficient according to subsidiarity principle (e.g. eutrophication, overfishing, climate change, energy dependency and energy grids, accessibility, cross-border crime adaptation to effects of extreme weather events and safety at sea including reduction of the risk of oil spills).

The original document of 2009 was based on four main pillars: (i) Environmentally sustainable Region, (ii) Prosperous Region, (iii) Accessible and attractive Region, (iv) Safe and secure Region, that can be interpreted as key objectives of BSR development. The Strategy has been complemented by the action plan (CEC2009a) presenting an indicative set of priority areas under ach pillar. Coordination of each priority area is allocated to a member state but sometimes also to regional authorities. On top of that strategy contains nine so called horizontal i.e. cross-cutting action. As indicated by the EU Commission (CEC 2009) they are fundamental to the entire strategy. These include research, maritime issues, spatial planning, implementation of the EU legislation, coordination of EU funding and strengthening of the Baltic identity.

The priority areas are implemented through detailed actions. Some actions are strategic for the Baltic Sea Region as they are designed to address specific and important issues for its regions, citizens and enterprises. Others are cooperative, meaning they are based on the benefits in improving cooperation on issues where member states and stakeholders are ready to do so. No specific funds have been

allocated for the strategy implementation in the EU budget[7]. In addition to that also, examples of *flagship projects* i.e. projects with high significance are presented. Horizontal actions are implemented by flagship projects only. Table 1 depicts the structure of the Action Plan, for better overview see numerous analysis of the strategy content e.g. Zaucha and Török (2011).
Currently The strategy was revised in 2012. The European Commission Communication on the review of the EUSBSR was published on 23 March 2012, and on 26 June 2012 the General Affairs Council endorsed the Council Conclusions on the completion of the review of the EUSBSR. The European Commission presented the reviewed Action Plan in February 2013 with the three overall objectives: *save the sea, connect the region* and *increase prosperity; 17* priority areas and 5 horizontal actions. The three key objectives and associated subobjectives are presented in table 1

Table 1 The structure of the Action Plan of the EU Strategy for the Baltic Sea Region

Save the sea	Connect the region	Increase prosperity
• Clear water in the sea	• Good transport conditions	• Deepening and fulfilling the single market
• Rich and healthy wildlife	• Reliable energy markets	• Implementation of Europe 2020 Strategy
• Clean and safe shipping	• Connecting people in the region	• Improved global competitiveness
• Better cooperation	• Better cooperation in fighting cross-border crime and trafficking	• Climate change adaption

Source: EU Commission.

The objectives are made more concrete through concrete indicators and targets. Targets are related to the sub-objectives.
There are also five horizontal actions (each with agreed targets) One Horizontal Action out of those five is directly related to territorial cohesion i.e. "encouraging the use of Maritime and Land-based Spatial Planning in all Member States around the Baltic Sea and develop a common approach for cross-border cooperation". Its main aim is to achieve territorial cohesion perspective of the BSR by 2030 i.e. the BSR will be "well-integrated and coherent", and it will „overcome the socio-economic development divides between its individual parts" and will turn „the global challenges into assets". (CEC 2013,171). The Horizontal Action will be coordinated by VASAB (terrestrial part) and HELCOM with VASAB (maritime spatial planning-MSP). VASAB will be responsible to implement its LTP as a main vehicle to advance land-based spatial planning. As a part of this task the need to establish a monitoring system that would provide evidences on territorial development and cohesion in the BSR has been clearly spelled out.

[7] *The strategy will not involve additional EU funding or require new EU legislation. This is because it is essential to ensure that available resources are used in the most effective way before employing new funds.*

"This monitoring system shall comprehend a policy dimension, related to the promotion of territorial cohesion in the Baltic Sea Region, and a methodological dimension aimed at developing a tool (indicator based) for monitoring the territorial development in the Baltic Sea Region. „ (CEC 2013, 171) Concrete target and indicators were formulated with regard to maritime spatial planning mainly: "Drawing up and application of trans boundary, ecosystem-based Maritime Spatial Plans.".

From the point of view of the BSR monitoring system the strategy possess some important futures. The strategy put together knowledge about the Baltic Sea Region available so far in different reports and studies forming solid diagnosis base. It also created demand for Baltic analysis, discussions and debates. Finally it kept high BSR at EU political agenda.

The EU strategy for the Baltic Sea Region constitutes a brand new phenomenon a macroregional strategy.

*European Union Strategy for the Baltic Sea Region, defines macro-region as "**an area including territory from a number of different countries or regions associated with one or more common features or challenges.**" This carries no implication of scale: however, in an EU context a macro-region will involve several regions in several countries but the number of Member States should be significantly fewer than in the Union as a whole.* (Samecki 2009)

As pointed out by Held (2011) the added value of macro-regional approach is among others in territorial starting point – an EU policy development process, multi-level governance ambitions (mobilization of numerous stakeholders), and transnational methods of work such as maritime spatial planning.

Therefore appearance of the strategy can be also understood as an advent of uniform "one size fit all" solutions in EU Policies and increased role of macro-regions. As pointed out by Rostocks (2009:9) it seems that the EU Commission and European Council has recognised *that the various regions of the EU may perform different functions and that each can excel in something different. The task of the EU would thus be to approach the uniqueness of its regions in a strategic manner, to accentuate their strengths and make them work for the benefit of the EU*. All these can be taken as evidence that the macro-regional approach is in line with the place based paradigm of policy making propagated by Barca (2009). At least it offers an opportunity to make a shift towards integration of policies and increase of their efficiency. As such it can help implementation of the concept of the territorial cohesion. However, the implementation of the EU BSR strategy (at least so far) has turned down those expectations and at least can be assessed as disappointing.

The main weakness of the Strategy (2009 version) is its limited place based character. The strategy lacks vertical mechanism of strategic debate. The reason was that Commission limited its efforts to technical drafting of the document being prompted by wishes of stakeholders and national governments. As the result the Strategy is too complex to become fully implementable. In fact the Strategy is an inventory of all possible efforts benefiting Baltic Sea Region. Antola (2009, 36) names such a strategy a Christmas Tree Strategy. The strategy has failed to identify key priorities or the most promising developmental engines for the Baltic Sea Region. As pointed out by (Schymik Krumey 2009, 16) less would be more in such circumstances. In addition to that the Strategy puts insufficient attention to the policy integration. Despite ambitions to integrate different processes in the Baltic Sea region the strategy remained a rather sectoral oriented document creating insufficient mechanisms for cross sectoral integration.

The attention paid to cross-cutting tools and instruments such as spatial planning, education, innovations at least so far has been low.

Although a revised draft strategy is slightly more integrated its territorial dimension is still weak. For example prosperity indicators are not related to healthy and strong cities or formation of integrated labour markets around strong urban poles. Energy indicators put focus on interconnections of energy grids not addressing the concept of dispersed energy structures or securing suitable territories for renewable energy development. But of course one can find many territorial considerations between the lines and on top of that spatial planning is secured as horizontal action.

Analysing draft of the revised strategy (CEC2013) one can estimate demand for the territorial monitoring efforts in the future in relation to the BSR development. The key territorial processes and phenomena that would require monitoring will be following

a) development of intelligent transport corridors on the sea (in relation to safe shipping),
b) development of transboundary maritime spatial planning (in relation to better operation),
c) changes in accessibility and connectivity and quality of TEN-T core and comprehensive network elements (in relation to good transport conditions),
d) changes in prosperity and diminishing divides (e.g. GDP/per person, HDI index, employment rate, expenditures on R&D, labour productivity) – the problem is that those indicators should be measured at level of subregions (NUTS2?) instead of the BSR level only to show the territorial EU 2020 pattern (in relation prosperity),
e) implementation of the VASAB LTP (in relation to the renewed horizontal action).

5 Baltic versus European perspective

In order to identify the main components of the BSR territorial monitoring system the European debate should be translated to the Baltic Sea Region specificity and priorities. The results are presented in table 2 which features specific components of the European territorial discourse that were given a prominent place in such VASAB strategic documents as:

- the strategy of 1994 (VASAB 1994),
- the key themes of 2001 (VASAB 2001),
- the key challenges of 2005 (VASAB 2005),
- the action agenda of 2009 (VASAB 2009).

Please note that the arranging of different elements of the European territorial discourse to form broader components is always slightly of arbitrary nature since it has to be based on the knowledge and experience of experts. Different grouping would result in identification of different components of territorial development.

Table 2 Correspondence between European and BSR goals and priorities for territorial development

	EU territorial goals, options and principles	EU strategy for the BSR (amended in 2012)	Main VASAB documents identifying priorities for spatial development of the BSR			
	Key components of European territorial debate (aims, goals, priorities)		**VASAB strategy of 1994**	**VASAB key themes of 2001**	**VASAB key challenges of 205**	**VASAB action agenda of 2009.**
1.	Balanced territorial development encompassing different types of territories	++ (mainly via HA Spatial Planning)	++	++	++	++
2.	Polycentricity of the settlement structure	+ (indirectly in relation to LTP)	+	++	++	++ (enhancement of SMESTO development)
3.	Quality of urban nodes, dynamism and competitiveness of cities, sustainability of their structures, their integrated development	+ (indirectly in relation to LTP)	++	++	++	++
4.	Networking and co-operation between cities, city regions	+ (indirectly in relation to LTP)	++	++	++	++
5.	Functional areas including urban rural co-operation, integration of border areas, coastal zones	+ (indirectly in relation to LTP)	++ (urban, rural, border, coastal zone, islands)	++ (transnational development zones, rural areas, coastal zone, islands)	++ (transnational development zones, coastal areas)	++ (urban, rural,)
6.	Access to services of general interest	+ (some services of general interest like transport, education to some extent health)			+	
7.	Territorial assets/territorial capital (e.g. cultural landscapes, natural and cultural heritage, trust etc.)	++ (mainly via HA Spatial Planning)	+ (mainly cultural landscapes)	+ (mainly cultural landscapes)	+ (sea space)	++ (sea space, local capacities for change)
8.	Critical green mass, for instance: green networks, ecological corridors and preservation of areas of high ecological value	++ (in relation to sea mainly)	++	++		
9.	Access to knowledge and diffusion of innovation	++				++
10.	Regional clusters of competition and innovation	+ +			++	++
11.	Transport Accessibility, Connectivity, Parity of Access to technical Infrastructure, development of TEN-T	++	++	++	++	++ (including ICT)
12.	Intermodality of transport and greening of transport	++	++		++	++ (motorways of the sea)
13.	Territorial governance, coordination of policies	++ (in relation to sea mainly)	++		++ (territorial	

	influencing the same territory				dimension of development policies)	
14.	Diminishing territorial divides or alleviating their consequences[8]	++ (mainly via HA Spatial Planning)	+	+		+ (integration of Russia into BSR)
15.	Developing energy resources	++	++			++ (incl. transmission grid)
16.	Sustainability of tourism development	++				
17.	Trans-European risk management including the impacts of climate change and preparedness to natural and man-made disasters	++				

Own elaboration

Table 2 reveals a rather stable picture of the BSR priorities for territorial development. It can be noticed that within the last 13 years one only few new elements i.e. innovation and clusters in expense of nature protection were added. One should also keep in mind that in the recent VASAB report of 2009 some demographic issues related to the social cohesion and maritime spatial planning were considered as an important field of joint spatial actions. In fact, they were assigned a more prominent role than in the Territorial Agenda of EU 2020 where they were mentioned under challenges and as parts of implementation mechanisms respectively.

The aforesaid analysis might help identify the main components of the territorial development as presented below and embed them into a framework for the BSR territorial monitoring system. Some elements of the European territorial discourse, less frequently mentioned in the BSR documents, have been merged into the more popular ones. The least frequently quoted have been completely missed.

1) Balancing territorial development, diminishing territorial divides or alleviating their consequences (paying attention among others to the integration of Russia into the BSR).
2) Maintaining at least the existing polycentricity level of the settlement structure and – consequently – ensuring access to services of general economic interest for the entire BSR population.
3) Ensuring high quality of urban nodes (dynamic competitive and sustainable large and small cities), and their networking (cooperation of cities and city regions) with focus on diffusion of innovation and enhancement of knowledge- based development.
4) Emergence and development of regional clusters of competition and innovation.
5) Integrated development of functional areas with focus on:
   - urban rural cooperation,
   - coastal zones,
   - islands,
   - integration of border areas;
6) Development of territorial assets/territorial capital.
7) Wise use of the sea space.

[8] The main divides that VASAB has always referred to are between more and less affluent countries (E-W divide), between countries with low and high population density (N-S divide), and between rural and urban areas (U-R divide).

8) Eco-resilience, for instance: green networks, ecological corridors and preservation of areas of high ecological value.
9) Ensuring accessibility, connectivity and parity of access to transport and ICT infrastructure, development of TEN-T.
10) Enhancement of intermodality of transport and greening of transport including motorways for the sea, short sea shipping.
11) Development of renewable energy resources (also at sea) and the BSR transmission grid (integration of energy infrastructure in the BSR);
12) Territorially oriented governance (including vertical and horizontal integration of policies).

Having in mind analysis from the first part of the paper on the various definitions of the territorial cohesion one can take the listed above twelve points as the BSR specific operational interpretation of the concept of territorial cohesion. Therefore territorial cohesion at BSR circumstances can be defined as an overarching (macro) goal of different types of policies, prompting them to support an integrated territorial development of the BSR[9]. Such development requires integration of policies and their mutual (vertical and horizontal) coordination in relation to their impact on BSR territory. The BSR specific objectives of the integrated territorial development have been listed and agreed in the strategic BSR documents including: diminishing territorial divides, enhancing polycentricity of development, contributing to sustainable city (urban regions) development and their networking and co-operation, facilitating formation of functional regions in particular those related to innovations and knowledge based economy but also those with specific territorial endowments, promoting wise use of territorial assets (immovable assets or territorial capital), enhancing accessibility and connectivity and parity access to transport and ICT infrastructure, diminishing pressure on natural and cultural environment and finally opening space of the Baltic sea for sustainable development. In brief the desired process resulting from application of the notion of territorial cohesion is policy integration and territorialisation (making them place-based or territory sensitive) whereas the desired state of territory is depict by the aforesaid objectives or priorities agreed by the BSR countries.

Moreover, any monitoring system - if tailored to the BSR needs - should also provide spatial planners with clear measurement of the BSR divides as an important contextual factor conditioning BSR policies and efforts. The system should be also flexible enough to take advantage of and serve the monitoring purposes of the EU Strategy for the BSR.

6 Monitoring experience

There are few spectacular examples of successful worldwide monitoring systems, e.g. the HDI (laid down in Human Development Reports and computed under United Nations Development Programme) or GCI (published in Global Competitiveness Reports by the World Economic Forum). Also GDP per capita in PPP, despite massive criticism (Stiglitz, Sen, Fitoussi, 2009), is still used worldwide for monitoring changes in the level of well-being. However, other efforts to develop functional monitoring systems turned out to be less successful. For instance, the original list of 35 "Lisbon" indicators for the EU15 of 2001 was

[9] The concept of an integrated territorial development has been recently promoted intensively in the draft regulation on the EU Cohesion Policy but in a slightly narrower sense limited mainly to the Community Led Local Development and Integrated Territorial Investments

first expanded to 24 indicators in 2002 and then squeezed down to 1410 structural indicators in 2004 to benchmark the progress towards the Lisbon objectives across the EU[11]. The main reason for those changes was a trade-off between comprehensiveness and coherence of measurement. However, the most striking fact is that the Member States more or less ignored even this narrow set of EU structural indicators, with the exception of Luxembourg being the only EU Member State that monitored its National Reform Programme with exactly those 14 ones. Only six other countries included those indicators in their National Reform Programmes or respective progress reports (Steurer, Berger 2010). The limited applicability of the Lisbon indicators could have been caused by different reasons but the most important were the following:[12]

a) inclusion of indicators which subsequently either were not available for most countries or were too arduous/costly/time-consuming in practical terms to collect,
b) application of indicators that did not have joint relevance for all stakeholders (rather, usually only for those that specifically argued for/requested them),
c) pressure by some stakeholders and interest group to add indicators that were important from the theoretical or political point of view but were too complex to be easy interpreted or lacked background data and information necessary for their computation.

The lesson learned from this experience is that it is extremely difficult to come up with a monitoring system that would be in line with the needs and specificities of all Member States, that availability of information is equally important for the proper construction and content of any indicator, and – finally - that for the indicator system to be successful there has to exist a feeling of ownership and support among its final beneficiaries.

Even more challenging were the attempts to establish systems for routine monitoring of territorial development aspects at the supranational level. One of the main problems is the complexity of territorial processes. This has led to e.g. a setback in the first VASAB monitoring trial in 1996 and the failure to elaborate a system for measuring results of transnational programmes supporting the European territorial cooperation. In the latter case the only feasible solution was the use of proxy measures related to the number of projects or financial allocations. Difficulties in measuring the territorial development are illustrated by the story of the Cohesion Reports. The territorial information presented there usually refers to the state of the territory but hardly to its changes, while the findings (with but few exceptions related to typical indexes as GDP etc.) have not been intertwined between the series of reports. The territorial information published in the Cohesion Reports lacked systematic approach being gathered on an ad hoc basis. For instance, in the 3rd Cohesion Report(CEC 2004) the Commission made use of the following indicators regarding the territorial cohesion: GDP per capita, change in population, accessibility indicators and indicators on fragmentation of natural areas whereas in the next report the

[10] GDP per capita; Labour productivity; Employment rate; Employment rate of older workers; Female participation rate; Educational attainment; Research and Development expenditure; Business investment; Comparative price levels; At risk-of-poverty rate; Long-term unemployment rate; Dispersion of regional employment rates; Greenhouse gas emissions; Energy intensity; and Volume of freight transport.

[11] From 2010 a revised set of structural indicators is to be used for the monitoring of the EU 2020 Strategy, the successor to the Lisbon Strategy.

[12] Drawing on Tomas Hanell ideas, as presented at the TeMo workshop in April 2012.

Commission applied different indicators to the same end with the exception of GDP per capita (Zillmer and Böhme 2010,6).

Monitoring of territorial issues also witnesses the challenge of trade-off between the scope of measurement and simplicity. The monitoring (territorial) systems proposed for wide implementation have been either too demanding (idealistic) in terms of cost, information intake and interpretation to be commonly used by decision-makers as a guidance for their policies (ICZM indicators) or vice versa - they were too narrow and thereby might turn attention of decision-makers to non-measurable development components, thus biasing the efforts towards the measurable issues (the targets of Europe 2020).

The records of efforts to establish territorial monitoring system are long and instructive. Probably the first initiative was that of VASAB, with its already mentioned unsuccessful attempt of 1996. With the establishment of ESPON the work on territorial indicators was then undertaken for the entire EU territory including the EU-associated countries. In 2008 two seminars were organised by ESPON: a workshop on territorial indicators and indices in April and a workshop on monitoring territorial dynamics in November. And next, in 2010, the ESPON launched a special project titled INTERCO (ESPON 211), dedicated to this issue, and in 2011 in relation to this project organised a workshop titled: "Assessing Indicators for Territorial Cohesion".

Despite all those efforts, in the contemporary literature one can find only three[13] comprehensive conceptual attempts to elaborate the monitoring systems for territorial cohesion covering EU territory which were carried through to the end (Farrugia, Gallina 2008; Medeiros 2011; ESPON 2011[14]). There were also some evident failures. The attempts of the ESPON project 3.2 to create the Territorial Cohesion Index (ETCI) did not bring the expected results (Grasland 2008). The conclusions from the research, as summarized by Farrugia, Gallina (2008, 34), were rather pessimistic. The project team pointed out that the existing statistical situation of the EU made it impossible to build any relevant index of the territorial cohesion at the regional level which could embrace the three dimensions of the ESDP.

Monitoring efforts related to territorial integration and territorial development have been even less popular[15]. There has been only one successful attempt related to territorial development of the EU. The ESPON project 4.1.3. examined and tested in practice the monitoring of the territorial development of Europe and came up with a set of routing indicators (i.e. spatial relevant indicators explaining spatial structures and development) and the wish list of indicators which were not available at that time but were identified as being of crucial importance for future spatial monitoring (ESPON 2007).

The above mentioned "successful" monitoring initiatives are presented below, in depth, in a chronological order. However, it is important to note in this context that some scholars expressed serious doubts about the actual usefulness of the

[13] Also ESPON 3.3. project (ESPON 2006b) developed a comprehensive set of indicators related to the dimension of the development referred to as the 'quality', covering also the quality of the territory. Those indicators cannot, however, be taken as a system for measuring the territorial cohesion or territorial development. They rather measure the socio-economic development in space. Their direct attribution to the territorial cohesion by Prezioso (2008, 21) seems interesting but not fully justified, as only some aspects of territorial cohesion are covered by them. The same is true with regard to OECD Regional Database that includes regional statistics for the OECD member countries on demography, regional economic accounts, labour market, social indicators. Those indicators measure mainly socio-economic development in space. Finally, the EEA (2010) also developed a list of potential territorial indicators to support the environmental dimension of territorial cohesion. That attempt covers mainly ecological aspects of the latter, though.

[14] Also the ESPON Project KITCASP aims at the elaboration of a core set of key indicators of territorial cohesion, economic competitiveness and sustainable development to keep spatial planners at the national level informed, drawing on ESPON research and datasets available in the case studies. The project, however, has just been started.

[15] There are also numerous national and regional systems of territorial indicators that will not be examined in this paper.

expanding monitoring efforts. For instance Zillmer and Böhme (2010) are of the opinion that the empirical evidence related to territorial cohesion has been provided excessively and that, especially at the moment, the utility of the additional empirical evidence is quite low due to data limitations caused by the economic crisis. They have pointed out a vast body of available territorial knowledge and know-how in different territorial networks such as NTCCP. However, they have failed to address the constraint of lack of long-term perspective in systemizing the knowledge and information and therefore difficulties in monitoring territorial changes. Some other scholars are of an opposite opinion. Medeiros (2011, 18), for instance, argues that the discussion of the territorial cohesion concept will be useless if it cannot be measured over time despite problems with the quantification of indicators.

6.1 ESPON Project 4.1.3

The monitoring system for territorial development was elaborated within the framework of the ESPON Project 4.1.3 (between 2006 and 2007). The project made use of the indicators developed under other ESPON projects. It aimed at improving, further developing and integrating the existing component of a monitoring system within the ESPON programme and gaining the first experience from practical testing of the monitoring of the territorial development of Europe. The monitoring system worked out under the project had policy-oriented character i.e. it was aimed at supporting the decision-making processes while till trying to satisfy the needs of researchers. The spatially relevant indicators identified under the project were called 'routing' indicators (i.e. complex and "expressive" ones able to explain spatial structures and development trends). The 'routing' indicators were supposed to have a 'beacon' function in relation to policy objectives and to highlight the shortcomings in data availability. The routing indicators were selected from the ESPON database and its core-[16] and key indicators[17] , though some other sources were used as well[18] (EEA 2010, 46).The selection process is shown in Figure 10.

[16] The most important indicators for the themes analysed by the ESPON 2006 projects (EEA 2010, 46). The indicators were developed during the process of a discussion between the ESPON Coordination Unit, two cross-thematic projects (ESPON 3.1 and 3.2) and the lead partners of other ESPON projects. The result was a short list of indicators, sufficient for providing cross-thematic information on European spatial development. The key indicators were eventually agreed upon by the ESPON Monitoring Committee (ESPON 2007b).

[17] The ESPON core indicators closely linked to the territorial policy objectives (EEA 2010, 46).

[18] Nordregio (special study), INTERREG IIIB BSR, Eurostat Regio Database, World Bank, CORINE 2000Dataset / 1990 Dataset, EEA, Eurostat Regio Database, Various national sources, United Nations University, European Social Survey, CITERES, Mcrit, Forbes 2000, CIS 3 – Third community innovation survey.

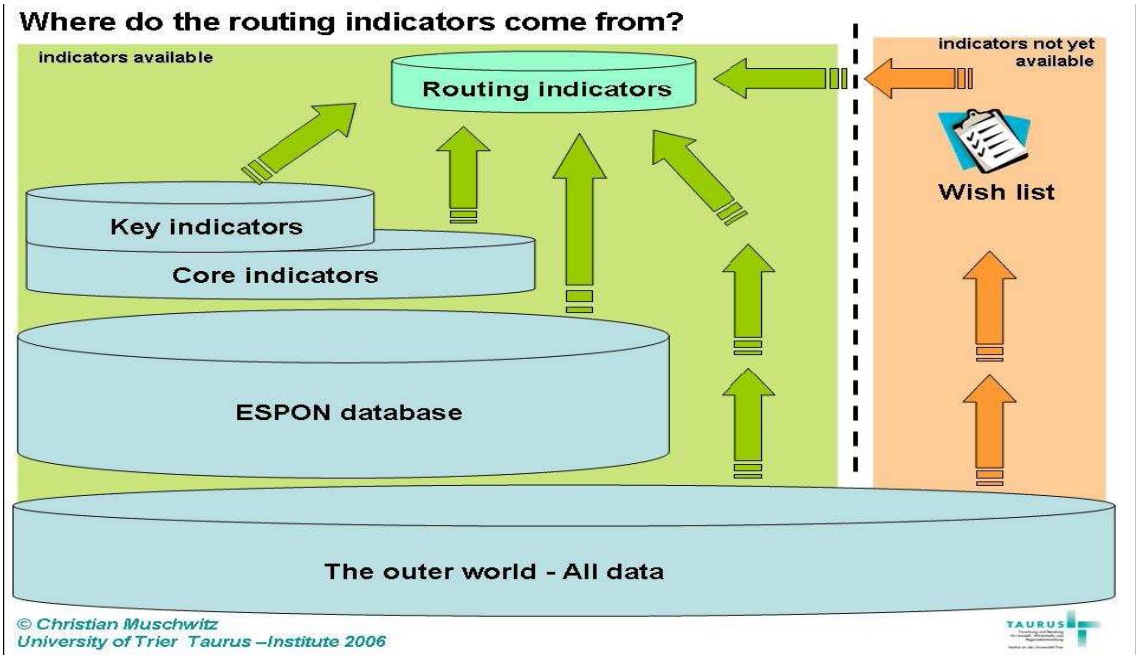

Figure 10 Selection of the routing indicators

Source: ESPON 2007, 2

The routing indicators should meet several criteria, those of: a high explanatory power, clear regional (or territorial) dimension (availability at the regional level) and practicability or applicability (i.e. the usefulness for policy making).

The project also allowed elaborating the main components of the monitoring system. They were identified through the combination of the themes, complex policy strategies, complex territorial concepts and ESPON territorial typologies describing the most fundamental spatial patterns. The following four components were identified, concerning respectively: simple thematic indicators of territorial development, simple territorial approaches, complex thematic approaches and complex territorial concepts. The components were then arranged (figure 11) according to their nature (ranging from simple single regional indicators to complex indices) and the political explanatory power (being mainly sectoral or thematically oriented or having territorial significance).

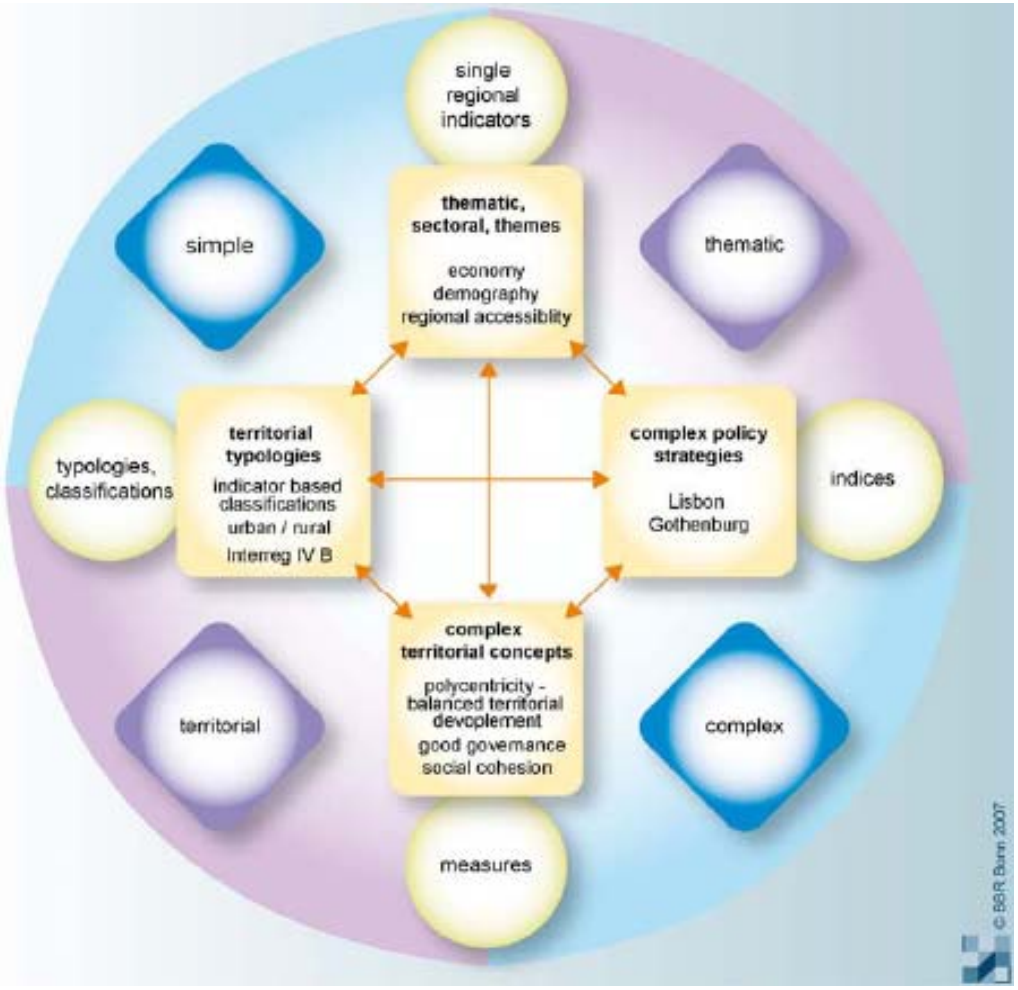

Figure 11 Components of territorial monitoring

Source: ESPON 2007

Finally, the project described the features that should be met by the indicators (univocality, traceability, clear link to the phenomena, reproducibility, easiness of maintenance) and their essence (measurable units consisting of one single datum or combining different data that evaluate the state of affairs and / or the dynamics of a phenomenon under consideration) as well as the metadata format.

The indicators were presented in a matrix form, i.e. in relation to long-term territorial goals[19], each under one of the following domains: Economy and Innovation (Agriculture), Demography, Spatial Structure (urban, urban-rural, urban hierarchy), Energy and Transport and ICT, Social and Culture and Governance, Environment and Hazards.

Table 3 provides an overview of the routing indicators of the project and table 4 presents the wish list of the indicators.

[19] The goals have been related to policy concepts and ESDP policy options addressing territorial cohesion: competitiveness (Lisbon agenda), infrastructure and accessibility, environment (Gothenburg), socio-cultural issues and governance (ESPON 2007,3). The following ten territorial goals were selected: (i)Balanced

distribution of population, wealth, cities, (ii) Sustainable settlement structures, (iii) Assets for global competitiveness, (iv) Innovative knowledge society, (v) Diversified regional economies, (vi) Sustainable

transport and energy, (vii) Socially inclusive society and space, (viii) Healthy environment and hazard prevention, (ix) Diversified cultural heritage and identities, (x) Territorially oriented governance.

Table 3 List of routing indicators

Dimension	Name of Indicator	EU 25+2+2	NUTS 3	NUTS 2
Economy, Innovation (Agriculture)	Employment by economic activity	X	-	X
	R&D personel % of total employment	X	-	X
	Gross domestic expenditure on R&D as percentage of GDP	X	-	X
	GDP per capita in Euros, 2003	X	X	X
	GDP in PPS per inhabitant, 2003	X	X	X
	Change of GDP in Euro per capita	X	X	X
	Labor costs	X	-	X
	Activity rate male 15-64 years	X	-	X
	Share of agriculture, forestry and fishery in the regional added value (%)	X	X	X
	Share of technological manufacturing industries in the regional added value	X	X	X
	Share of financial and business services in the regional added value	X	X	X
	Share of administration, education, health and social services in the regional added	X	X	X
	Activity rate female 15-64 years	X	-	X
	Employed in high-tech sector	X	-	X
	Employment in R&D	X	X	X
	Development of unemployment rate	X	X	X
	Unemployment rate < 25 years	X	-	X
Demography	Population density	X	X	-
	Migratory balance	X	X	X
	Share of population younger than 15 years	X	-	X
	Population in the age of 15 to 64 years	X	-	X
	Population older than 64 years	X	-	X
	Fertility rate	X	-	X
Spatial structure (urban, urban-rural, urban hierarchy)	Primacy rate	X	-	X
Energy, Transport, ICT	Accessibility by public transport (rail)	X	X	-
	Potential accessibility, multimodal, to population	X	X	-
Social, Culture and Governance	Number of cultural sites	X	X	X
	Employed persons by highest educational level	X	-	X
	Population by highest educational level attained	X	-	X
	Part-time employment	X	-	X
	Unemployment rate	X	X	-
Environment, Hazards	Fragmentation index	X	X	-
	Flood endangered settlement and artifical areas (Corine)	X	X	-

Source: ESPON 2007b,101

Table 4 List of wish indicators

Dimension	Name of Indicator	EU 25+2+ 2	NUTS 3	NUTS 2
Economy, Innovation (Agriculture)	Investment rate	-	-	X
	Location of multinational headquarters	-	X	X
	Enterprises in innovation	-	-	-
	Utilised agricultural area (UAA)	-	-	X
Demography				
Spatial structure (urban, urban-rural, urban hierarchy)	Urban growth 1990 - 2000	-	X	-
	Percentage of artificial area - Corine	-	X	-
	Percentage of urban fabric - Corine	-	X	-
Energy, Transport, ICT	Average travel time to next three regional cities	X	-	-
	Intensity of traffic flows per network segment	X	-	-
Social, Culture and Governance	Trust in the legal system	X	-	-
	Politics too complicated to understand	X	-	-
	Worked in an organisation or association (other than party) last 12 mon	X	-	-
Environment, Hazards	Land consumption by transport infrastructure	-	X	-
	Natural areas (NATURA 2000)	-	X	-

Source: ESPON 2007b,102

The ESPON 4.1.3 monitoring attempt may lead, *inter alia*, to a reflection on the fast changes in the content of the notion of spatial development. Although the territorial goals selected by the project are still valid, the indicators (even the wish list) fail to reflect the phenomena of the economics of flows, ability to network, formation of functional areas and territorial resistance to climate change. Only the economies of agglomeration and distance, as components of modern understanding of the concept of territorial development, are covered to more or less satisfactory degree.

6.2 Measurement of territorial cohesion reduced to services of general economic interest

The description of the achievements of N. Farrugia and A. Gallina (2008) is included in this report as they provided the first attempt to compute a composite index of territorial cohesion that ended up with concrete numerical results. In fact, the authors made two attempts to measure the territorial cohesion. The first one, which did not bring about the expected results, was based on the operational definition of territorial cohesion built out around a three-goal axis:

- fair access to services of general economic interest across the territory;
- avoiding territorial imbalances;
- polycentric territorial systems, both in urban and rural areas, enabling the existence of opportunities for all.

Farrugia and Gallina (2008) selected relevant indicators accordingly (table 5), but when trying to find the data for computing them, they realised that the scheme would not work. Therefore due to the constraint of information availability they decided to re-define the territorial cohesion as "the possibility for the population living in a territory to access services of general economic interest" (Farrugia and Gallina 2008, 39).

Although the authors recognised the need to split the index of territorial cohesion into a "provision component (measuring the sustainable provision of services of general economic interest to population living in a territory) and an access component (measuring the access of population living in a territory to the services provided" they failed to do so, explaining that such distinction might include a too high degree of subjectivity (Farrugia and Gallina 2008, 40-41). The following services were chosen as components of the territorial cohesion index:

- transport,
- energy,
- communication services,
- education,
- health,
- other essential services.

The index has also encompassed some indicators measuring equality of access to some services echoing the original idea of the territorial cohesion as a vehicle for reducing spatial imbalances and disparities. The index excludes some important services such as culture. The authors did not explain the reasons for that, though.

The indicators selected under each component are shown in table 6. The indicators on physical accessibility to services are missing. For obtaining the composite index the indicators were converted to a similar unit or scale with the use of a rescaling method that allowed to normalise the indicators between the range <0,1>. The territorial cohesion index was aggregated used equal weighting, that is, all seven components were given the same weight in the

index. The numerical values of territorial cohesion were calculated for 22 countries and presented both as a total and separately for each component. Sweden was ranked at the top, followed by Norway, Switzerland Austria and Finland. When examining the structure of the index the authors revealed that the transport index was negatively correlated to all other components but failed to explain the reasons.

Table 5 Indicators for computing territorial cohesion index based on the three-goal axis (dimension)

Goal Dimension	Measurement Dimension	Example of selected Indicators dimension
Increase access to services of general economic interest across the territory	Communication and access to ICT	(a) Indicators of access to ICT (b) Indicators of new enterprises, male- and female-managed in the ICT business (c) Indicators of virtual communities/networks/research centres of women and of immigrant women with international contacts (d) Indicators of virtual exchanges between universities and research institutions (e) Indicators of access and use of ICT by elderly people
	Environmental quality, renewable energies, sustainable tourism	(f) Indicators of sustainable use of natural resources (g) Indicators of reduction of pollution and recycling of waste (h) Indicators of energy saving and new sources of energy (i) Indicators of public management and saving of water (j) Indicators of sustainable tourism enterprises
	Quality of life Opportunities for training in arts, culture, creativity	(k) Indicators of quality of social and health services (l) Indicators of housing equipped for disabled and elderly people (m) Indicators of cities, areas in the countryside and mountains without barriers for disabled and elderly people (n) Indicators of integration of knowledge between educational areas from humanities to technological education (o) Indicators of creativity and art in different educational areas
Avoid territorial imbalances	Access to transport infrastructure	(a) Indicators of access to roads
	Urban – Rural linkages	(b) Indicators of balance between urban and rural settlements
Polycentric territorial systems, in urban and rural areas, enabling the existence of opportunities for all	Participation and social responsibility	(a) Indicators of participation in local decision-making (b) Indicators of corporate social responsibility (c) Indicators of territorial social responsibility with all local stakeholders
	Solidarity and exchange for the positive enhancement of gender differences	(d) Indicators of the active presence of women associations in a given area (e) Indicators of female entrepreneurship and employment (f) Indicators of the presence of women in high-tech sector education (g) Indicators of the presence of women in strategic jobs
	Solidarity and exchange for the positive enhancement of differences in cultures	(h) Indicators of the presence of active associations of migrant men and women (i) Indicators of migrant male and female entrepreneurship and employment (j) Indicators of integration in school of migrants' children (k) Indicators of concrete linkages between migrants and their country of origin (l) Indicators of concrete relationships between local authorities in a given area and local authorities in other parts of the world
	Solidarity and exchange for the positive enhancement of differences between people with different abilities	(m) Indicators of integration in schools and in the jobs of women and men with disabilities and of different ages (n) Indicators of social and technological projects for disabled and elderly people (o) Indicators of the elimination of barriers for disabled people (p) Indicators of integration of elderly men and women
	Positive enhancement of traditional crafts, agriculture, and traditional productions	(q) Indicators of enhancement of craft, traditional production in urban areas (r) Indicators of enhancement of craft, traditional production and traditional agriculture in rural and mountainous areas (s) Indicators of enhancement of craft and traditional production in areas that are particularly isolated

Source: Farrugia and Gallina (2008, 37)

The index was computed only for 22 countries due to lack of comparable data. The main problem was with two components dealing with other essential services and the equality. After their exclusion from the index, the indicator was re-computed for 52 countries. The correlation between indexes for 22 and 52 countries appeared rather high.

Table 6 Indicators for computing territorial cohesion index based on access to services of general economic interest

Component	Indicators
1.Transport	a. Air transport: Domestic takeoffs and takeoffs abroad of air carriers registered in the country (% of population). b. Road network: Motorways, highways, and main or national roads, secondary or regional roads and all other roads in a country (% of total land area). c. Carbon dioxide emissions: CO_2 emissions (metric tons per capita)
2. Energy	a. Provision and consumption of energy: electric power consumption (kWh per capita). b. Sustainability of energy production: GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent). c. Quality of the production of energy: electric power transmission and distribution losses (% of output). **d.** Renewable energy: proportion of energy from sources other than coal and oil.
3. Communication services	a. Internet: (i) the international internet bandwidth (bits per person) and (ii) the number of internet users per 1,000 people. b. Telephone: (i) number of telephone mainlines per 1,000 people, (ii) the average of the price basket for residential fixed lines (US$ per month) (iii) mobile phone subscribers per 1,000 people, (iv) the price basket per mobile (US$ per month). c. Other communication services: the proportion of households with televisions.
4. Education	a. Provision and access of education at primary, secondary and tertiary levels: (i) the expenditure per student (% of GDP per capita) at each of these levels, (ii) enrolment at each of these levels.
5. Health	a. Health expenditure per capita (current US$). b. Hospital beds per 1,000 people. c. Physicians per 1,000 people. d. Life expectancy at birth (years).
6. Other essential services	a. Improved water source (% of population with access). b. Improved sanitation facilities (% of population with access).
7. Equality	a. Urban-rural: This was measured by taking the difference between the provision and access to water and sanitation in urban areas as opposed to rural areas. b. Females: This was measured by the HDI's Gender Empowerment Index. c. Income groups: This was measured by the GINI coefficient.

Source: Farrugia and Gallina (2008, 42-44)

The above described monitoring attempt reveals very interesting features. The system can be used for supporting different policies (e.g. health/education/transport policy etc.) in promoting one specific aspect of the

territorial cohesion, namely access to services of general economic interest, with a single, yet important exception, though. Due to the lack of indicators on physical accessibility the system is of little value for the spatial policy as such. Another reflection is that difficulties will arise should it come to capturing geographical specificities of a global or continental coverage by the monitoring system. For instance, access to railway stations which is perhaps of little importance in the USA might be considered of critical importance for the case of territorial cohesion in Europe. The easiest way is to skip such "continent- or nation-specific indicators" but the composite index might lose its accuracy as a result. In this context it is well worth it to remind the opinion of S. Davoudi[20] on the rationality of building aggregated indexes for territorial cohesion. She drew an analogy „with the Human Development Index, which while open to criticism as being too crude and limited, had nevertheless proved to be a way of challenging the dominance of GDP as a measure".

6.3 Measurement of territorial cohesion based on the Star Model

Medeiros (2011) computed an index of territorial cohesion applying his Star Model. Compared to the model by Farrugia and Gallina (2008) his attempt is much broader and clearly addresses territorial complexity. Moreover, it is the first attempt to compute a territorial cohesion index at a regional level with comparable data for different time periods. For each dimension of the Star Model (as discussed in the previous sections) Medeiros defined three components and collected indicators for their measurement (see figure 12). The operational definition of each dimension (via the components) reflects a subjective choice of the author (his experience, knowledge and expertise) but at that stage of research this seems to be the only feasible way to go forward.

[20] An opinion presented in reference to the outcomes of the workshop held by ESPON on 12 November 2008.

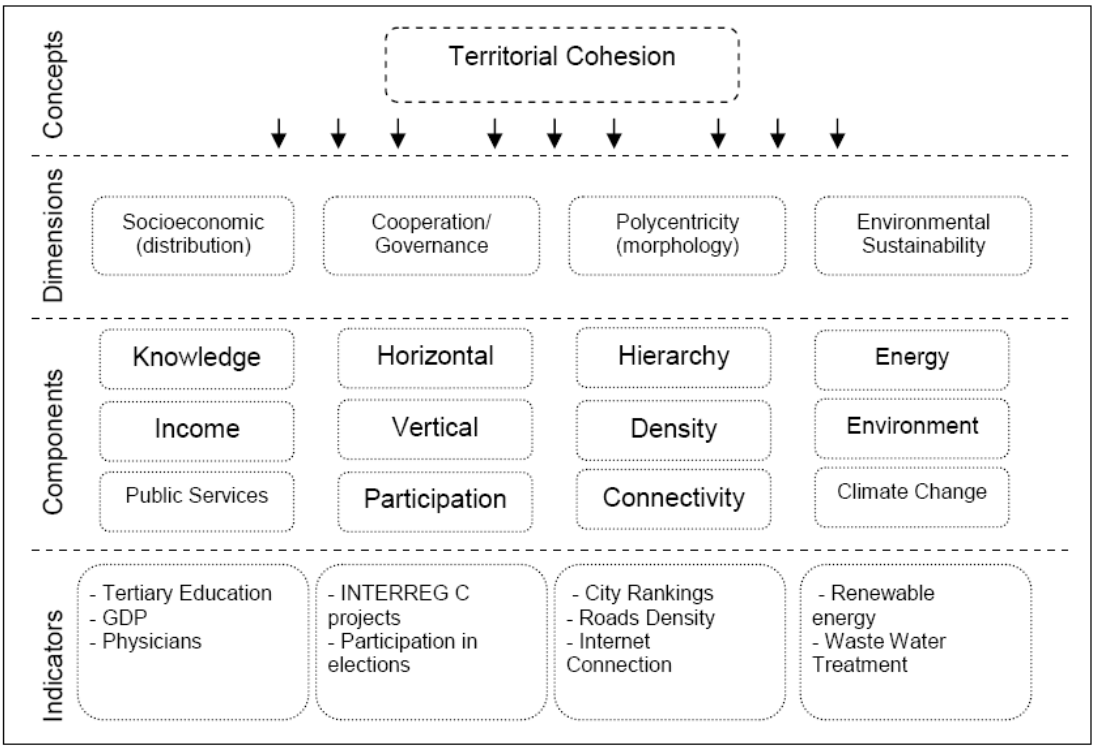

Figure 12 Dimensions, components and indicators in the Star Model

Source: Medeiros 2011, p.24

The most critical part of the work was selection of the indicators and deciding on those to be used. As the author explains, he tried to choose the most adequate indicators for each dimension and component in order to achieve a balance in their distribution (avoiding too large numbers of indicators for some dimensions while tolerating underrepresentation of others). Also the adequacy for a specific territorial level was important. Quality of the indicators was assumed to be more important than their quantity. The choice was based on the existing knowledge (mainly that concerning ESPON projects) but restricted by data availability. In fact, a much larger list of indicators had been initially considered by the authors (see table 7), but due to different reasons in the final computing exercise only those listed in figure 6 were applied. This allowed for computation of the territorial cohesion index for regions located in the Iberian and Scandinavian peninsulas (regarded as the benchmark) for the years 1998 and 2008. The composite index was computed by applying methods similar to those used for computing the HDI index: i.e. standardization, normalization and weighting. For the Iberian Peninsula the results were presented at the level of NUTS II regions and for the Scandinavian Peninsula at NUTS III level.

Table 7 The long list of indicators for computing territorial cohesion based the Star Model

Indicator - Socioeconomic (distribution) Dimension	Component
EU Human Development Index	*Transversal*
GDP	Income
Competitiveness Index	Income
Net adjusted disposal income of private households	Income
Tertiary education	Knowledge
Access to the information society	Knowledge
Research Centres	Knowledge
Physicians	Public Services
Public transports	Public Services
Schools	Public Services
Indicator – Cooperation/Governance Dimension	**Component**
Cooperation Projects Intensity (same territorial level)	Horizontal
Twin Cities	Horizontal
Inter-Municipal Cooperation	Horizontal
Cooperation Projects Intensity (different territorial level)	Vertical
Regional and Local Cooperation Associations	Vertical
International Trade	Vertical
E-government use/availability	Open/Partic
Administrative Decentralisation	Open/Partic
Participation in Elections	Open/Partic
Indicator – Environmental/Sustainability Dimension	**Component**
Renewable Energy Production	Energy
Energy Efficiency	Energy
Eco-Efficiency	Environment
Waste Treatment	Environment
Environmental Risk Reduction	Environment
Indicator – Polycentricity (Morphology) Dimension	**Component**
Polycentric Index	*Transversal*
City Rankings	Hierarchy
Specialized Functions	Hierarchy
Population Density	Density
Compact City Form	Density
Road Density	Density
Transports Accessibilities	Connectivity
Accessibility to Infrastructures	Connectivity
Telecommunications Infrastructures	Connectivity

Source: Medeiros 2011, p.25

However, when trying to extend his research to the entire EU territory (NUTS 2 level), the author encountered several constraints, mainly as regards data availability. Therefore he managed to produced what he called "a Territorial Cohesion snapshot for 2008" using a much lower number of one-time indicators:

- for Socioeconomic Dimension: competitiveness index and human development index (CEC, 2010),
- for Cooperation/Governance: cooperation intensity (ESPON 2006c);
- for Polycentricity/Morphology: polycentric index – available for NUTS I, but adapted to NUTS II level (ESPON 2004);
- for Environmental/Sustainability: environmental vulnerability index (CEC, 2010).

Measurement of territorial cohesion, as proposed by Medeiros, reveals important problems with data availability, compatibility and comparability over time and between countries, and provides an example of the challenge of subjective choices in construction of the composite (aggregated) indices. This is a nice and inspiring effort from the scientific point of view, however, with limited relevance (only as a background material) for the policy makers. The latter might have serious problems with direct application of composite indices as measurable targets of their policies. Another problem is doubts as to the versatility of the aggregated indices. One can easily imagine that the meaning of territorial cohesion in different countries might vary, and therefore different weights would be necessary to capture those differences should we treat territorial cohesion as such a policy goal.

6.4 ESPON territorial cohesion indicators

The first draft of the ESPON indicators of the territorial cohesion was elaborated under the INTERCO project (ESPON 2011). The most prominent feature of those indicators is their official recognition. This has and will be done in the future through a debate procedure and then a decision of the ESPON Monitoring Committee composed of the officials from the EU Member States and associated countries, representing public institutions endowed with official responsibilities regarding territorial matters and territorial cohesion. The selection process of indicators has combined scientific advice and a discourse with the final beneficiaries i.e., policy makers (ESPON stakeholders). The selection procedure allowed the ESPON indicators to become policy-oriented. The INTERCO project also developed a set of tools and a database to support working with the territorial indicators.

The indicators were selected on the basis of their relevance for the EU 2020 Strategy, the Territorial Agenda 2020 and the aims within territorial cohesion, such as: reducing territorial inequalities in access to services, improving the natural environment, reducing poverty and exclusion, increasing territorial innovation and enhancing territorial governance. The indicators were chosen for the following seven dimensions of territorial cohesion identified (as the case was with the Star and Tequila models) on the basis of the territorial cohesion objectives: (i)economic performance and competitiveness, (ii) environmental qualities, (iii)social inclusion and quality of life, (iv) innovative territories, (v) access to services, markets and jobs, (vi)territorial cooperation and governance, (vii) polycentric territorial development (ESPON 2012). Finally, some selection criteria were applied to allow permanent gathering of information on the indicators and ensure their usefulness for the policy makers. According to the criteria, the indicators should:

- show a clear direction of change;
- show the value of a direction of change (larger is better – or worse);
- be sensitive to policy change and be able to measure the outcome or impact of a policy measure;
- be available for time series, i.e. the data should be updated regularly, preferably annually and the costs of updating data should be reasonable;
- be available at sub-national level, preferably at NUTS3;

- focus on the added value of territorial cohesion and cover its dimensions and not so much on economic or social cohesion;
- be easy to calculate and to use by the end-users.

For each of the territorial themes, "a number of so-called 'top indicators' were selected by means of the INTERCO combined analytical and participatory process, taking into account data constraints" (ESPON 2011,3). The indicators were divided into four categories: (i) those indicating changes, disparities and territorial assets/opportunities (Ch), (ii) those showing territorial structural elements (St), (iii) those portraying the contextual situation of regions, and the framework conditions (C), (iv) those that are important but cannot be computed due to different reasons (the wish list) (W).

The results of the tentative selection by the ESPON Monitoring Committee (of June 2012) are presented in the table 8. The indicators in grey have been added to the INTERCO indicators by the ESPON stakeholders.

Table 8 A short list of territorial cohesion indicators chosen by ESPON

Categories: Themes	Change (Ch)	Structure (St)	Context (Co)	Wish list (W)
Economic performance and competitiveness	- Unemployment rate		- GDP per capita in PPS - Old age dependency ratio - Labour productivity in industry and services - Labour productivity per person employed - Primary employment rate - Tertiary employment rate	
Environmental qualities	- *Air pollution: PM10 - *Air pollution: Ozone concentrations - *Soil sealing per capita (St) - *Accessibility to Natura 2000 (St)	- Wind power potential	- Potential vulnerability to climate change - Fresh water resources - Noise pollution - Photovoltaic potential - Aggregated Natural Hazards	- Natural resources (Co) - Biodiversity (St) - Mortality, hazards and risks (Co)
Social inclusion and quality of life	- Disposable household income - Proportion of early school leavers - Quality of housing - % in risk of poverty		- Life expectancy at birth - Gender imbalances - Difference in female-male unempl. rates - Ageing index - % of households very low in work - Deprived persons	
Innovative territories	- Population aged 25-64 with tertiary education - Creative workforce - % of high growth firms		- Intramural expenditures on R&D - Employment rate 20-64 - Birth rates and survival rates of firms	
Access to services, markets and jobs	- Access to compulsory school (St) - Access to hospitals (St) - *Accessibility of grocery services (St) - Access to university (St) - Access to primary health care - Households with broadband access	- *Accessibility potential by road - *Accessibility potential by rail - *Accessibility potential by air		
Territorial cooperation and governance	- *Cooperation intensity - *Cooperation degree		- Variation in corruption, discrimination & victimization	- Use of integrated place based strategies (Ch) - Use of functional regions (St) - Use of territorial impact assessments (Co)
Polycentric territorial development		- *Population potential within 50 km	- Net migration rate	- *Polycentricity index (St)

* The Indicators marked with an * have intrinsic territorial dimensions meaning that they
- include the notion of distance, i.e. all the "accessibility" indicators + "Population potential within 50 km"
- are calculated using areas/volumes (soil sealing, air pollution)
- relate 2 or more territories (the cooperation indicators)

Source: ESPON 2012

After validating the territorial indicators presented in table 8 by the ESPON Monitoring Committee, the indicators will be subject to testing by the 'European Territorial Monitoring System' project with the support of other ESPON projects[21] That first selection of indicators could be complemented with new indicators developed under the ESPON projects or with indicators related to new policy developments. The first annual review is foreseen to take place in summer 2013 (ESPON 2012).

[21] All ESPON projects dealing with indicators to measure territorial cohesion, should first consider the indicators included in the first selection (ESPON 2012)

A few important lessons have been learned and observations collected by the ITERCO project with regard to territorial monitoring (ESPON 2011). The most relevant of them for the TeMo project are summarised below.

Firstly, the INTERCO project has encountered problems with measuring such a complex and heterogenous category as territorial cohesion. The solution was flexibility of the indicator system i.e. the ability of the system to serve different policy objectives (ESPON 2011,9).

Secondly, the INTERCO project (ESPON 2011,8) underlined a trade-off between flexibility and stability of the monitoring system. On the one hand the system should allow comparable measurement and comparison over time, on the other hand it should react to the changes in territorial goals and objectives. The project tried to resolve the dilemma by making a distinction between data (which can be organised using a thematic thesaurus) and indicators (which would be linked to specific dimensions of territorial cohesion – e.g. the territorial objectives identified by the INTERCO project). The strive towards stability was probably the main reason why originators of the project after analysing different, politically approved territorial objectives, considered as foundations and essence of the territorial cohesion (e.g. priorities of the Territorial Agenda of EU 2020) came up with their own set of six and then seven objectives (dimension of the territorial cohesion) which - as one may easily guess - were regarded as more versatile[22].

Thirdly, the INTERCO project paid a lot of attention to the simplicity and usefulness of the system for policy makers. This should be considered as one of the key factors of success. For instance, an idea of composite indicators was clearly rejected by a vast majority of the stakeholders during the discussions held (ESPON 2011,9). Therefore it was decided to elaborate some sets of indicators under the project.

Fourthly, the INTERCO project recognized the importance of data constraints, in particular lack of relevant data collected periodically at the NUTS 3 level. As noticed in the project documents "the official data collection is not yet fully adjusted to the newest political priorities and we are strongly urging the data providers to make the missing data available for the researchers, the policy-makers, if not for the general public" (ESPON 2011,9). As a result the INTERCO system is unable to measure e.g. progress in the state of biodiversity and in renewable energy production and consumption since such information has been collected only at the national level so far.

Fifthly, the INTERCO project underlined the importance of the contextual indicators (e.g. life expectancy) that were related to the outcomes of concrete policies but shaped the context for such policies by describing the complexity of the various situations in the EU.

The examination of findings and the experience of the projects/initiatives, dealing exclusively with the territorial monitoring, might lead to the following conclusions:

1. A monitoring system requires prioritisation and focus. This can be achieved by examining goals and priorities of spatial visions and strategies at different geographical scales. The EU initiatives and regulations (e.g. INSPIRE, GISCO) will not ensure such a focus automatically (as many would believe).

[22] In fact, in parts A and B of the draft final report (ESPON 2011) the Territorial Agenda has been mentioned only seven times. This limited focus on the document was explained in following way:" The recurrent updates of the policy objectives and documents had forced us to take a flexible attitude in the course of the project, rendering the current results more in line with the future shape of Europe but also more adaptable if any changes should take place in the future as well " (ESPON 2011,8).

2. A monitoring system, if useful, should guide not only spatial policies but all policies with territorial impact. It should monitor to what extent such policies contribute to the territorial development or territorial cohesion. In particular the system should serve, in addition to the VASAB needs, also the needs of the EU Strategy for the BSR.
3. Single composite indicators (similar to GDP) depicting territorial development (territorial cohesion) in Europe are unfeasible. This is due to e.g. varied understanding of the territorial cohesion or the overall goal of the territorial development (in fact, spatial policy is about arbitration between different developmental goals, thus there is no single goal that can be used for measurement of the progress in spatial development and territorial cohesion).
4. Therefore, the most promising approach is to disaggregate complex territorial processes into the more simple components and to measure the progress in each component separately. The weighting of components (priorities or goals of spatial development) depends on policy decisions in each country and might change with time. Thus, there is no uniform weighting pattern that can be applied in Europe or in the macroregion with such a high level of heterogeneity as that in the BSR.
5. An alternative to measuring the progress of territorial development and territorial cohesion another technique could be proposed, to groups territories with similar development preconditions in order to adjust policies to the local conditions (place-based approach).
6. Data gathering should come at the lowest possible geographical level in order to satisfy the plea for monitoring the development of functional regions. However, this would raise the costs of the monitoring system. Thus, there is a need for defining a proper balance between flexibility of the monitoring system and the resources necessary for its execution and maintenance.
7. The composite indicators pose a threat of being unfriendly and difficult for interpretation for the decision-makers. There are, however, a few examples of very successful territorial indicators of that kind (e.g. multimodal accessibility). Thus, resigning from such indicators would be premature, as they should be used in an informed way (demonstrating, if possible, the impact of each single index on the overall value of such an indicator).

All the above described preconditions and related decisions form important milestones for designing a territorial monitoring system. They require an intensive dialogue between stakeholders (decision-makers) and the researchers. The decisions cannot be made alone by experts without involvement of people involved in daily practice.

Also, the data availability should be paid due attention. Several monitoring systems failed because they restricted themselves to measure processes, for which they could find available data. This would lead to the business-as-usual case. On the contrary, the success of Urban Audit can be attributed to the clear measurement frame filled in the course of far-sighted measurement efforts. The lesson learned is therefore that a monitoring system should be developed in a gradual way but with a clear perspective what is desirable and what indicators are necessary in a long run.

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See Volume 12 for all bibliographical references

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