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April 2011

Innovation in the Baltic Sea region

Final Report to the European Commission, Directorate-General Regional Policy

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List of abbreviations

BERD	Business Enterprise expenditure on R&D
BSR	Baltic Sea Region
CBSS	Council of the Baltic Sea States
EIB	European Investment Bank
EPO	European Patent Office
ERDF	European Regional Development Fund
ESF	European Social Fund
ESFRI	European Strategy Forum on Research Infrastructures
EUSBSR	European Union's Strategy for the Baltic Sea Region
EW	ERAWATCH
FOI	Structural Fund expenditure by field of intervention
GOVERD	Government expenditure on R&D
HEIs	Higher education institutions
HERD	Higher Education Research and Development
JRPs	Joint Research Projects
NB8	Nordic-Baltic 8 framework
NCM	Nordic Council of Ministers
NIB	Nordic Investment Bank
NUTS	Nomenclature of Units for Territorial Statistics (standard code for referencing the subdivisions of countries for statistical purposes. It subdivides each Member State into three levels: NUTs level 1,2 and 3)
PRIs	Public Research Institutions
RCA	Revealed Comparative Advantage
RIM	The Regional Innovation Monitor
RTDI	Research, Technology Development and Innovation
SF	Structural Funds
STI	Science, Technology and Innovation
TC	InnoPolicy- TrendChart

1. Introduction

1.1 Objectives of the study

This study provides an overview of existing national and regional innovation strategies of the Member States covered by the European Union's Strategy for the Baltic Sea Region (EUSBSR). The study was prepared as a background report for a conference on 'Smart Specialisation and Growth in the Baltic Sea Region' held from 5-6 April 2011 in Malmö (Sweden). In more detail, the study addresses the following elements.

1.1.1 Policy overview - mapping of existing innovation strategies

The study maps the current national and regional innovation strategies that are reflected in the budget of the EU Member States in the Baltic Sea Region (BSR). It examines the strategic focus and, in particular: formation and development of clusters, innovation-friendly environments for business (in areas such as energy, IT, environment and forestry/wood), embedding lifelong learning in research and innovation, strengthening of regional research infrastructure and centres of competence, public procurement and the use of ICT.

The mapping takes into account all policy activity and not only those funded through Cohesion policy. An important issue addressed is how assessed activities help to deliver smart specialisation strategies.

1.1.2 Matching of findings with the contribution of ERDF to national and regional innovation policies

A core element of the study was to match the results from the mapping with existing data on the contribution of the European Regional Development Fund (ERDF) to national and regional innovation policies. For this task a comparison was made with the findings of a 2010 study (Applica-Ismeri) on the contribution of the ERDF to national and regional innovation policies.

1.1.3 Organisational mapping – who does what?

The study identified the main organisations in charge of designing and delivering innovation activities in the EU Member States within the BSR. This resulted in an organisational mapping that addressed the issue of "who does what, and where?"

1.1.4 Transnational cooperation

The study examined the extent to which transnational cooperation is reflected in the BSR innovation strategies. A central task was to identify existing cooperation links (including the sectors covered) and to assess to what extent such links are supported by Cohesion policy funded operational programmes and/or the EUSBSR.

1.1.5 Good practice and recommendations

Examples from the BSR EU Member States of good practices in innovation policy (particularly with a transnational aspect) were examined so as to inform recommendations and policy options. Of particular interest was the identification of means to overcome barriers for developing an innovative economy through co-operation between academics, entrepreneurs and the financial sector.

Building on these examples and the conclusions of the study, the recommendations elaborate on ways to close gaps, avoid overlaps and to ensure that stakeholders work together rather than develop activities in isolation. The most appropriate means to ensure a proper exchange of experience between stakeholders were addressed.

1.2 Scope

The Baltic Sea Region in the context of this study covers Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, the German länder of Schleswig-Holstein and Mecklenburg-Vorpommern and the Polish voivodships of Zachodniopomorskie, Pomorskie and Warmińsko-Mazurskie.

As requested by the specifications, the definition of innovation used by the Expert Evaluation Network delivering policy analysis on the performance of Cohesion Policy 2007-2013 was applied[1].

1.3 Implementation of the study and study team

The study was implemented between 2 January and 5 April 2011 and was overseen by a steering committee composed of official of the Directorate-Generals for Regional Policy, Enterprise and Research of the European Commission. During an inception phase, the contractor scanned research and innovation policy databases and literature and prepared an interview guide and reporting template for the regional analysis.

In a second phase, a regional level analysis was conducted during February 2011 via:

- a review of documentary evidence on innovation policies, including ERDF funded measures, in each region (national level for the three Baltic States);
- interviews with officials of DG REGIO (responsible for specific countries) as well as regional and national stakeholders in the BSR (see Appendix B);
- Drafting of a short policy brief for each region drawing on the transcripts of the interviews and desk research.

In addition, the core study team examined available evidence at EU level on investment and policy priorities in favour of research and innovation in the BSR, EU programme funding allocated to BSR organisation as well as the various transnational and inter-regional initiatives in the BSR.

The main reports were drafted by Alasdair Reid and Cristina Navarrete Moreno of Technopolis Group (Brussels). The deliverables are as follows:

- D1: Inception report, submitted 7 February 2011
- D2: Interim report –7 March 2011
- D3: Draft final report – 4 April 2011

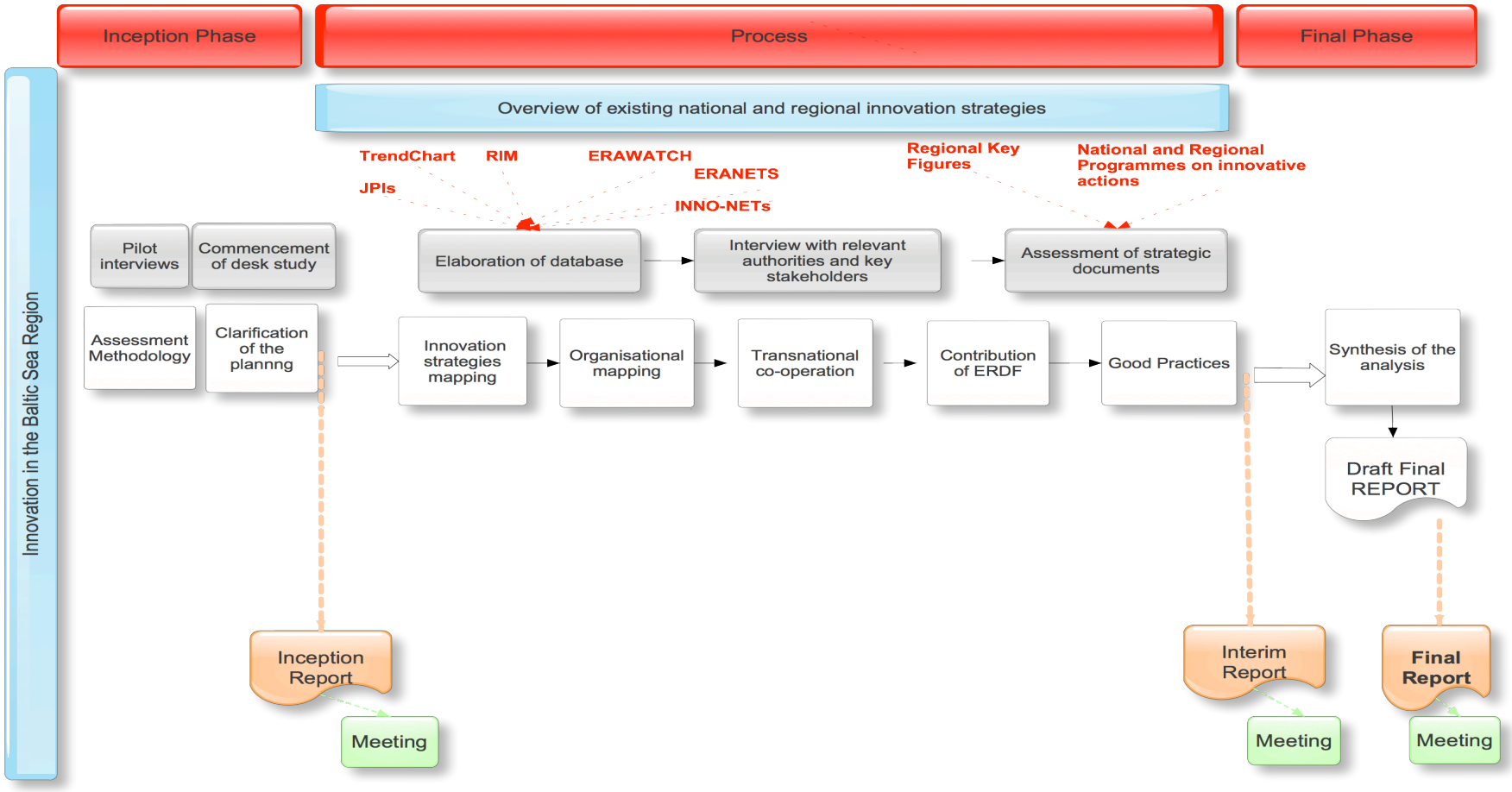
The following experts provided the country and regional level reporting (including desk study, interviews with key stakeholders and drafting of regional profiles):

- Denmark and Sweden: Peter Stern, Jakob Hellman, Miriam Terrell and Linda Blomkvist
- Estonia and Finland: Alo Merilo
- Germany: Viola Peter
- Poland: Jacek Walendowski
- Latvia: Aneta Vitola
- Lithuania: Jelena Angelis

The overall approach to the study is summarised in Figure 1 on the next page.

[1] Available at: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/expert_eval_ntw_inception_report_synthesis.pdf

Figure 1:Logic Model of the study



2. An innovation snapshot of the Baltic Sea Region

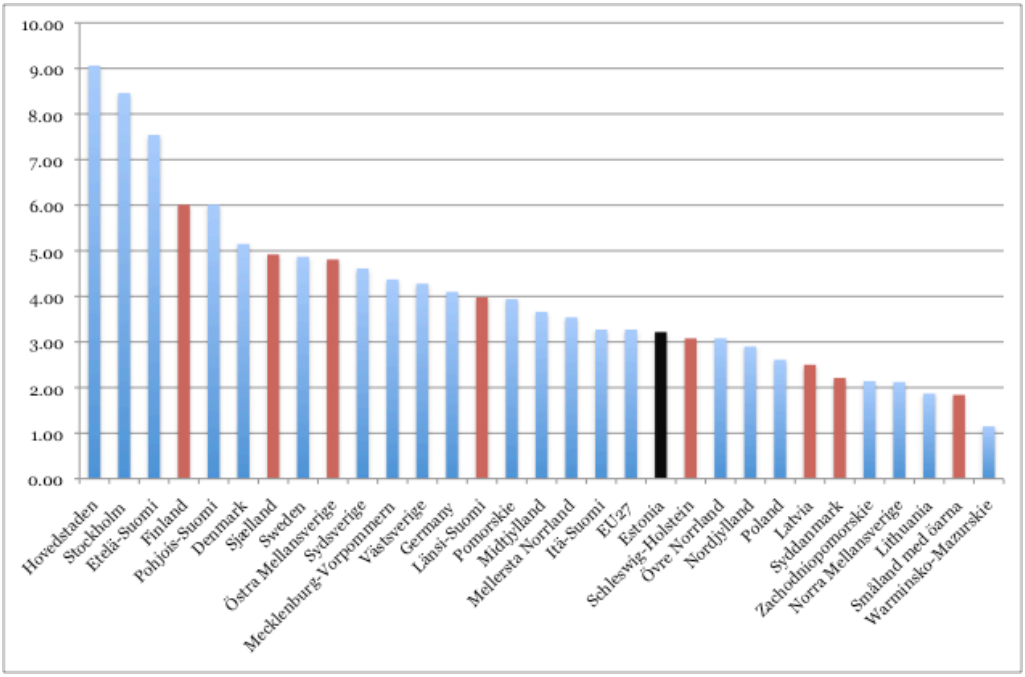
2.1 A diversity in innovation performance and systems

The current regional innovation performance in the BSR, as measured by the main research and technological development and innovation indicators used in most analysis and scoreboards, is clearly a reflection of a number of factors including industrial structure (i.e. relative specialisation in lower to high-tech industrial and business service sectors), stage of development, sophistication and quality of education and public and higher education research systems and public investment into these sectors. However, it also reflects 'institutional' and 'cultural' propensities to co-operation for innovation, risk-taking and entrepreneurial behaviour.

In terms of absolute and even relative levels of investment in R&D and innovation there is a clear north-west / south-east split in the Baltic Sea. In short, the intensity of investment (gross expenditure on R&D as a share of GDP) in Denmark, Finland and Sweden is at three times (or more) the level of the Baltic States and Polish region. Even the two German regions are, from a national perspective, 'weaker' regions. Government expenditure on R&D (GOVERD) as a percentage of GDP varies between 0.2% (Latvia) and over 1% in Finland and Sweden.

A similar diversity can be identified in terms of industrial structures with the share of employment in high-technology sectors relative to total employment (a standard measure of relative specialisation) ranging from 90.6% in Hovestaden (DK) to 1.15% in Warminsko-Mazurskie (PL). While, as can be seen from Figure 2, regional performance is related to overall national performance, there are clear intra-country differences with Danish (Nordjylland, Syddanmark), German (Schleswig-Holstein) and Swedish (Övre Norrland, Norra Mellansverige, Småland med öarna) featuring in the lower half of the ranking) well below respective national averages and the EU27 average of 3.27%. On the other hand, Estonia is close to the EU27 average and Pomorskie has a similar above average position to a number of Nordic regions.

Figure 2: Employment in high-technology sectors as a percentage of total employment (2008*) in the Baltic Sea Region



Source: Eurostat (htec_emp_reg2) High-technology sectors = high-technology manufacturing and knowledge-intensive high-technology services * Meckelenburg-Vorpommern, 2007.

A strategy for innovation for the Baltic Sea region that ignores this diversity of 'baseline' situation and which assumes that 'all partners are equal' is bound to fail. Using the 2009 regional innovation scoreboard rankings, the Baltic Sea regions can be split into three broad groups[2]:

i) Highly innovative with significant strengths in both business innovation and academic R&D: Nordic capital regions and regions with a high tech advanced business or research poles (Gothenburg, Oulu, Turku, etc.). In many of these regions, business strategies are the driving force in innovation funding (accounting for over 60% of investment), while public interventions focus on developing new and emerging platforms.

ii) Medium-high innovators but with weaker business innovation: Nordic secondary regions (East Finland, northern Sweden, rural parts of Denmark), Schleswig-Holstein and Mecklenburg-Vorpommern, Estonia (latter somewhere in between 2nd and third groups). Investment tends to be driven by a mix of public and higher education sector but with average to above average business performance.

iii) Low to medium-low innovators driven essentially by public (& higher education) investment: the three Polish regions (with Pomorskie better placed), Latvia and Lithuania.

Hence, these distinctive innovation systems imply a need for different policy 'mixes'. For instance, the third type of BSR regions are in an 'investment phase' in terms of rebuilding a 'competitive' public and higher education research system and of increasing the limited (human and financial) capacity for investing in R&D by businesses that are often concentrated in lower tech sectors. The more advanced BSR are competing globally and like the medium-high regions are shifting policy attention towards knowledge intensive services, creative industries or new higher tech clusters. Sectors like the creative industries can also be a key driver in even less 'high-tech' countries. For instance, according to the 2010 European Competitiveness Report (EC, 2010)[3], the Baltic States have amongst the highest annual employment growth rates in the creative industries sector (software consulting accounted for more than half of creative industries' employment growth in the EU27) in 2000–2007.

Public policy can intervene directly to support investment in public or higher education research systems or to support the creation (or attraction of inward investors) and development of 'higher-tech' firms, which **over time** may help to shift regional 'specialisation' towards business activities that generate higher income and employment. However, such processes take time since changing the 'historical' economic structure of a region is not a matter of a few years. Equally, policy also needs to address system failures explaining 'innovation and entrepreneurial propensities which can often be more challenging. The same remark about the diversity of capabilities and performance applies to the sophistication of policy, to the level of development of clusters, of management of research in higher education, etc. Finally, even if innovation policy aims to influence business to shift to become more specialised in specific sector (or technologies), the reality of globalised supply chains and trading patterns may undermine such shifts (EC, 2010).

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[2] These three broad groupings are based on the analysis of the European Regional Innovation Scoreboard approach as well as drawing on the work of the Regional Innovation Monitor. For further information, see the typology of regions proposed in the 2010 - Annual Report of the Regional Innovation Monitor "Innovation Patterns and Innovation Policy in European Regions - Trends, Challenges and Perspectives" available at : http://www.rim-europa.eu/index.cfm?q=p.reportDetails&id=15138; and the classification of regions in the 2009 Regional Innovation Scoreboard report available at : http://www.proinno-europe.eu/page/regional-innovation-scoreboard

[3] Commission staff working document, European competitiveness report 2010. An integrated industrial policy for the globalisation era. Putting competitiveness and sustainability at front stage (Com(2010) 614)/

2.2 Industrial and technological specialisation in the BSR

In order to examine, further the issue of whether the BSR regions are more or less specialised in certain sectors or technologies, the study team carried out both a literature review at regional level and also analysed available statistics. The next section recalls briefly the methods used to calculation specialisation indices.

2.2.1 Measuring specialisation and concentration

There are a number of regional specialisation indices as well as measures for regional concentration. Traistara and Iaru (2002) summarise the definitions on regional specialisation and geographic concentration of industries in relation to production structures. Thus, regional specialisation is defined as the distribution of the shares of an industry *i* in total manufacturing in a specific region *j* compared to a norm. A region *j* is specialised in a specific industry *i* if this industry has a high share in the manufacturing employment of region *j*. The manufacturing structure of a region *j* is 'highly specialised' if a small number of industries have a large combined share in the total manufacturing. Used indices are for example the Gini coefficient of regional specialization or the Krugman specialisation index.

Geographic concentration measures the distribution of the shares of regions in a specific industry *i*. A specific industry *i* is said to be 'concentrated' if a large part of production is carried out in a small number of regions. Indices used are the Herfindahl index or the Dissimilarity index of geographic concentration.

Patents as an output of innovation activities capture, to some extent, the technological capabilities of firms, industries, countries or regions. Relative technological specialisation is defined as the technological performance of a country or region in a specific technological field relative to its overall international technological performance.

Different countries and regions have different propensities to patent. This is not only due to their size, their research orientation or the degree of internationalisation. Another important factor is the differing propensity of different technological fields to be patented: even assuming relatively similar R&D expenditures, the chemical or pharmaceutical industry has a rather high propensity to patent, while the number of patents in mechanical engineering or the automobile sector is much lower. To overcome the size and propensity effects and to make technological fields as well as countries and regions comparable, specialisation indices as well as patent intensities (application per 1 million inhabitants) are used.

As a parameter to determine patent specialisation, the Revealed Comparative Advantage (RCA) methodology according to Balassa's formula (1965) is used. This RCA value has the following definition:

$$RCA_{ki} = 100 \times \tanh \ln \{(A_{ki}/\sum iA_k)/(\sum_k A_{ki}/\sum_{ki} A_{ki})\}$$

with A_{ki} indicating the number of patents of country *k* in the field *i*, whereby field *i* is defined by patent classes.

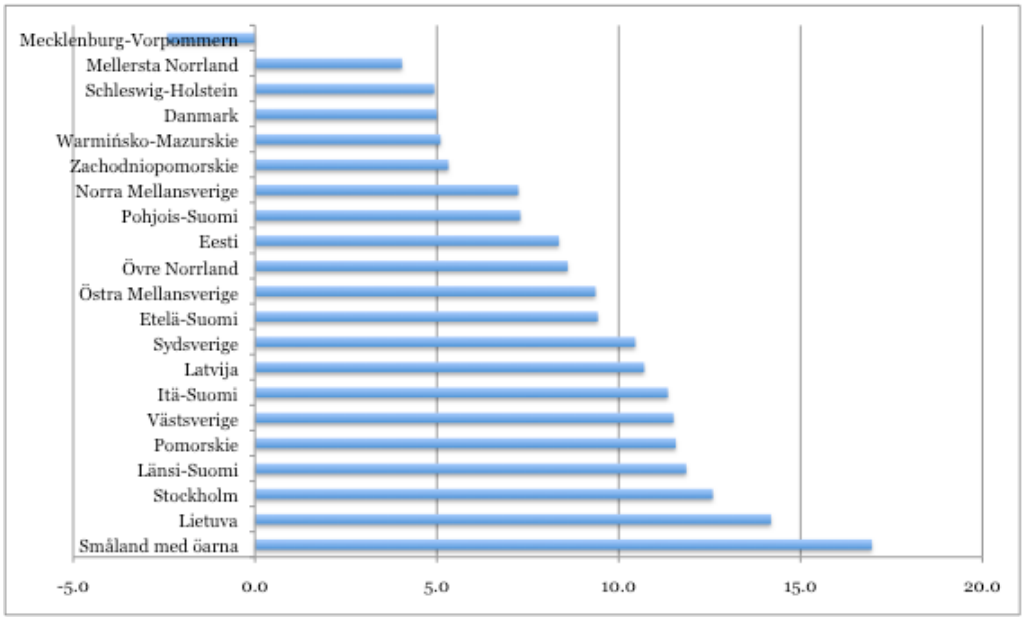
RCA values are here limited to a range of +100 to -100 due to the logarithms. Positive values for field *i* point to the fact that it has a higher weight in the patent portfolio of the country than its weight in the world (all patents from all countries taken together). Negative values indicate specialisation of A below the average, respectively. Values around zero, negative as well as positive, are distinguished from a positive or negative specialisation and labelled 'as expected' or 'world average'. This indicates that the calculated share equals the mainstream, or world average. In a range from -100 to 100, values from -20 to 20 are 'around world average' and should not be labelled specialised. To be positively or negatively specialised in patent classes that form technological fields, a country or region needs to divert from the world average.

2.2.2 Industrial specialisation

In the absence of trade data at regional level[4], the main economic (business) indicator used to identify specialisation is employment in specific sectors. Eurostat (2010)[5] presents an analysis of regional specialisation and concentration of manufacturing and service sectors. The report notes that there are various reasons for relative specialisation, including availability of natural resources, availability of skilled employees, culture and tradition, cost levels, infrastructure, legislation, climatic and topographic conditions and proximity to markets. Indeed, the findings of the analysis are not particularly surprising. The regions most specialised in food and beverages manufacturing (NACE 15) were all located in rural areas in or close to agricultural production centres, including Warmińsko-Mazurskie; while the heavily forested Nordic and Baltic regions were the regions most specialised in the manufacture of wood and wood products (NACE 20) and in the related manufacturing of pulp, paper and paper products (NACE 21). Itä-Suomi (Finland) was the most specialised region in wood and wood products and Norra Mellansverige (Sweden) in pulp and paper. A number of other BSR regions were amongst the most specialised in the EU27 in 2007 for specific sectors including: Warmińsko-Mazurskie (PL62) for furniture and other manufacturing (36); Radio, TV and communication equipment (32), Pohjois-Suomi (FI1A) and Övre Norrland (SE33) for metal ores.

As much as current specialisation patterns require careful consideration by policy makers when designing innovation policies, trends in the share of different sectors are also important. For instance, Figure 3, illustrates that a number the less advanced regions are showing relatively strong growth rates in business services suggesting that there is a process of structural change occurring.

Figure 3: Growth rates of employment in business services (NACE divisions K 72 and K 74), by NUTS 2 regions, 2006-07



Source: Eurostat

[4] Making it impossible to analyse, for instance, revealed comparative advantage as was done for instance in the European Competitiveness Report 2010 for intermediate products at national level. The national level data from this report tends to confirm that Estonia and Latvia have a comparative advantage in intermediate goods (as suppliers in global supply chains), Denmark and Poland in consumer goods; while Germany, Finland and Sweden have a comparative advantage in capital goods.

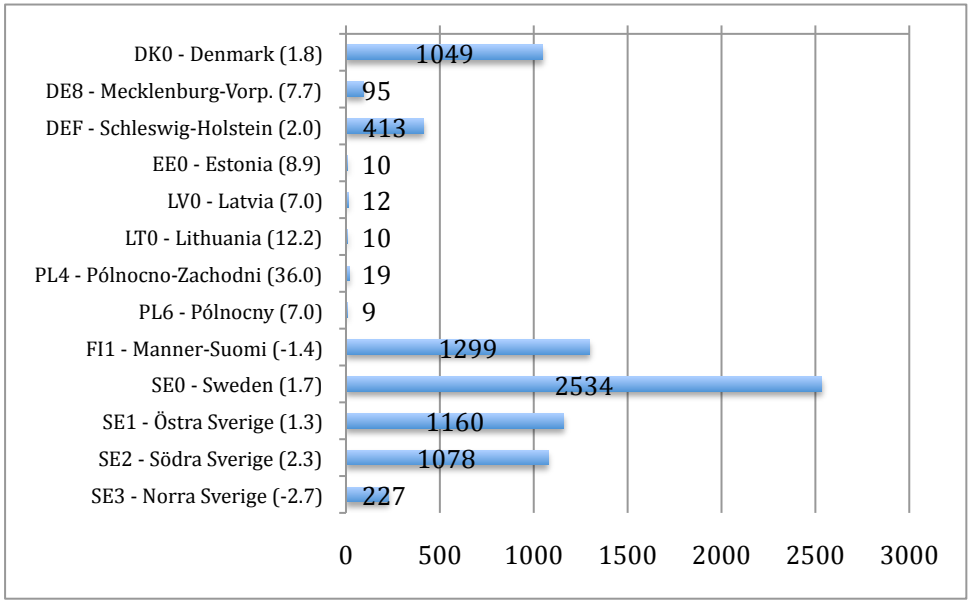
[5] Eurostat Regional Yearbook 2010

2.2.3 Patenting in the BSR

Regional data from Eurostat has been used[6] to analyse patenting activity in the BSR at regional level. Such an analysis is problematic since while it is, of course, possible to provide the absolute numbers, the calculation of technological specialisation needs a 'critical mass' to be relevant. If a region has less than 70 patents per year, it is impossible to calculate specialisation given that the absolute number of patent applications at the European Patent Office (EPO) alone was about 130,000 in 2007.

This said, the analysis suggest the BSR is rather diverse in terms of technological capacities. In 2006, the number of patent applications at the EPO ranged from nine in Polish regions to more than 2,500 in Sweden (Figure 4).

Figure 4: Number of EPO applications, 2006 and average annual growth 2000-2006 (in brackets)

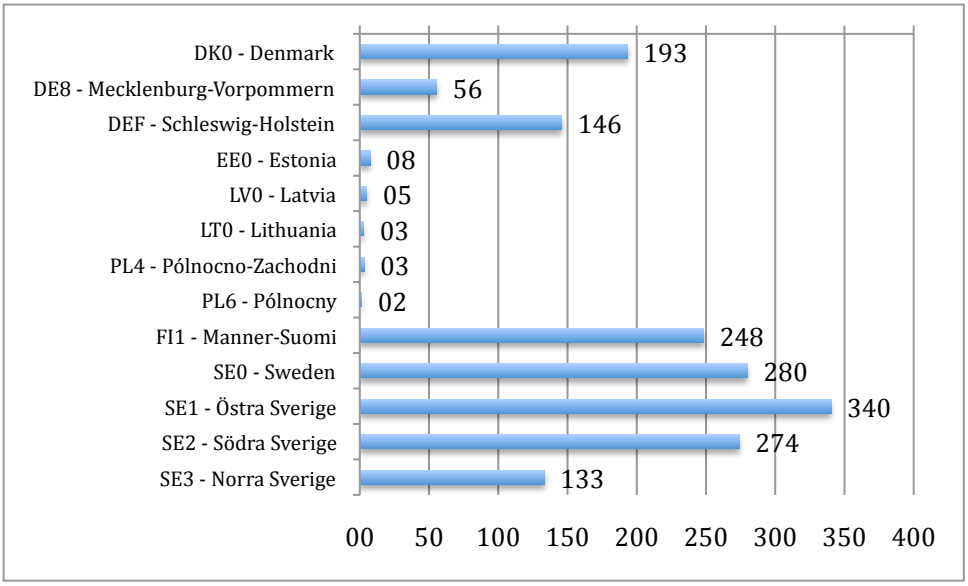


Data: Eurostat, Calculations Technopolis Group

Of course, this reflects the different size of the regions. However, even if the population size is taken into account, large differences prevail (Figure 5). The leading BSR regions are located in Sweden, Finland, and Denmark. Indeed, with more than 200 patents per million population on an annual basis these three countries are among the top patenting EU27 countries (see RKF 2010). Taking population into account, Sweden is still far ahead of Finland, Denmark, and Schleswig Holstein. Considering the (old) Swedish NUTS1 level regions, West Sweden (SE1) is the leading region in the BSR and even above the Swedish total per capita.

[6] Although for some regions provisional 2007 data is already available, 2006 data is used as this is complete and validated

Figure 5: Number of EPO applications per million inhabitants, 2006



Data: Eurostat, Calculations Technopolis Group

It is also worth noting, that while an upward trend in the internationalisation of R&D investment is visible in most countries, that the share of the total stock of EPO patents that is foreign owned differs significantly between the three Nordic BSR countries (below 20% of EPO patents are foreign owned in Denmark, Finland and Sweden) compared to the three Baltic States (around half of all EPO patents are foreign owned in Estonia, slightly above 40% in Latvia and close to 60% in Lithuania)[7]. This suggests that the output of R&D activity in the latter countries is much more 'internationalised' than in the Nordic 'innovation leaders'. This finding likely reflects the dominant role of foreign direct investment companies in the innovation systems of the Baltic States.

2.2.4 Technological specialisation in the BSR

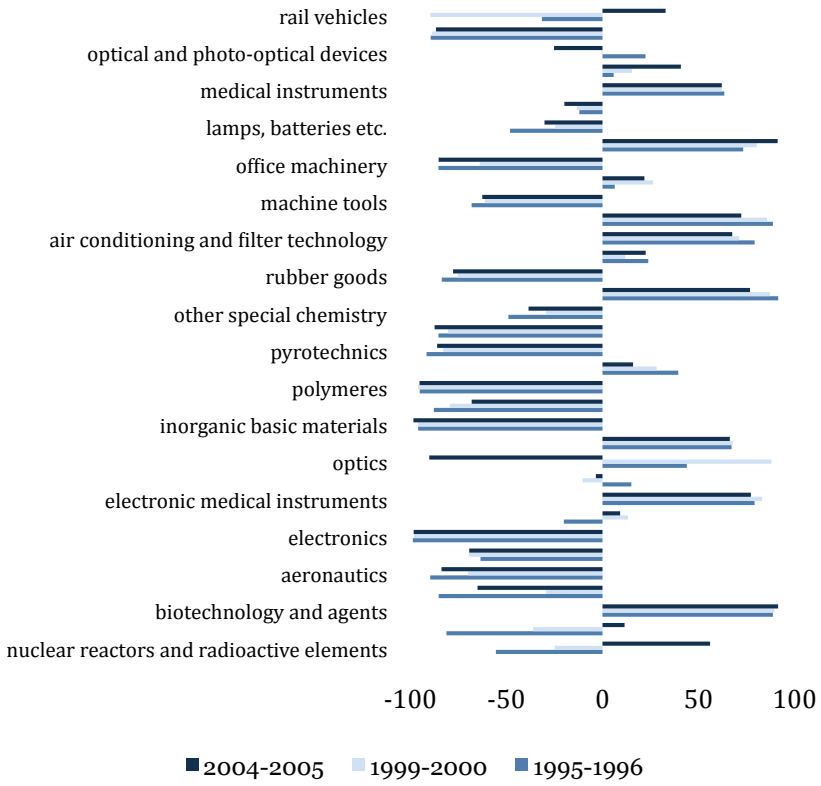
The low absolute patent numbers for many BSR regions/countries does not allow calculating relative technological specialisation patterns over time. Small upwards or downwards shifts in absolute (low numbers of) patents in a given class result in extreme amplitudes.[8] However for those regions with a statistically significant number (i.e. Sweden, Finland, and Denmark), detailed technological specialisation profiles were calculated for the periods 1995-96, 1999-2000 and 2004-05 (see figures below).

Technological specialisation is of course a reflection of the existing industrial structure and hence, the three countries have different profiles. The list of technologies is 'ranked' from a lower/medium degree of technology to high technologies. Denmark for example is positively specialised over time in 11 medium as well as high technologies. Among the technologies the country is specialised over time is *power generation and distribution*, *agricultural machinery*, *pharmaceuticals*, or *biotechnology and agents*. Finland is specialised in six technologies: *power generation and distribution* and *agricultural machinery* (similarly to Denmark), but also in *communication engineering* and *weapons*. Sweden is less often specialised with a positive specialisation in *air conditioning/filter technology*, *pharmaceuticals*, *communication engineering*, and *nuclear reactors and radioactive elements*.

[7] European Competitiveness Report 2010

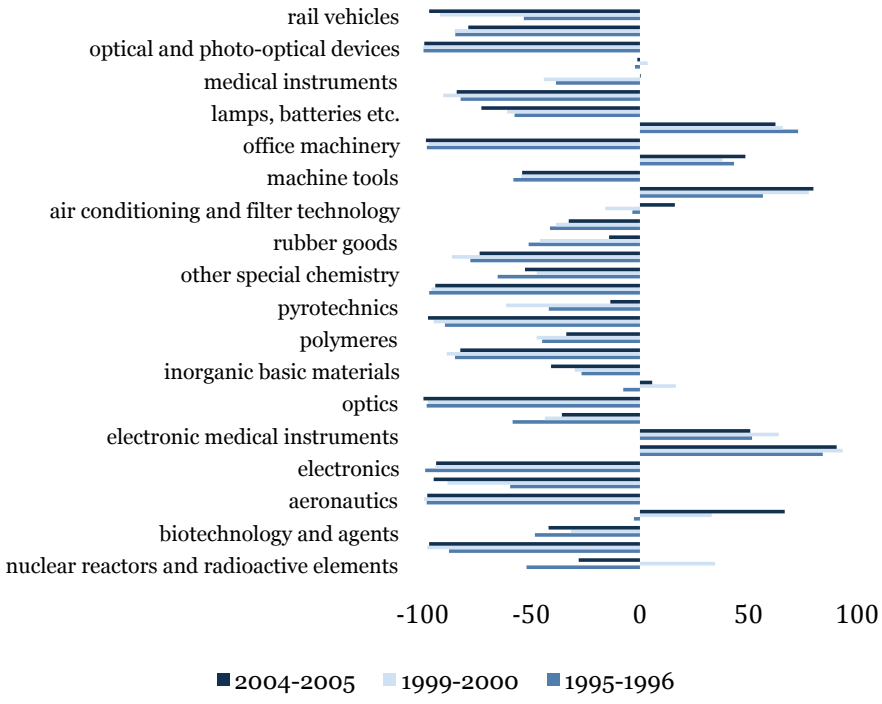
[8] This is the case for the Polish and German regions, but also for the three Baltic States. The total number of patent applications is far too low to calculate robust specialisation profiles.

Figure 6: Technological specialisation of Denmark (2006)



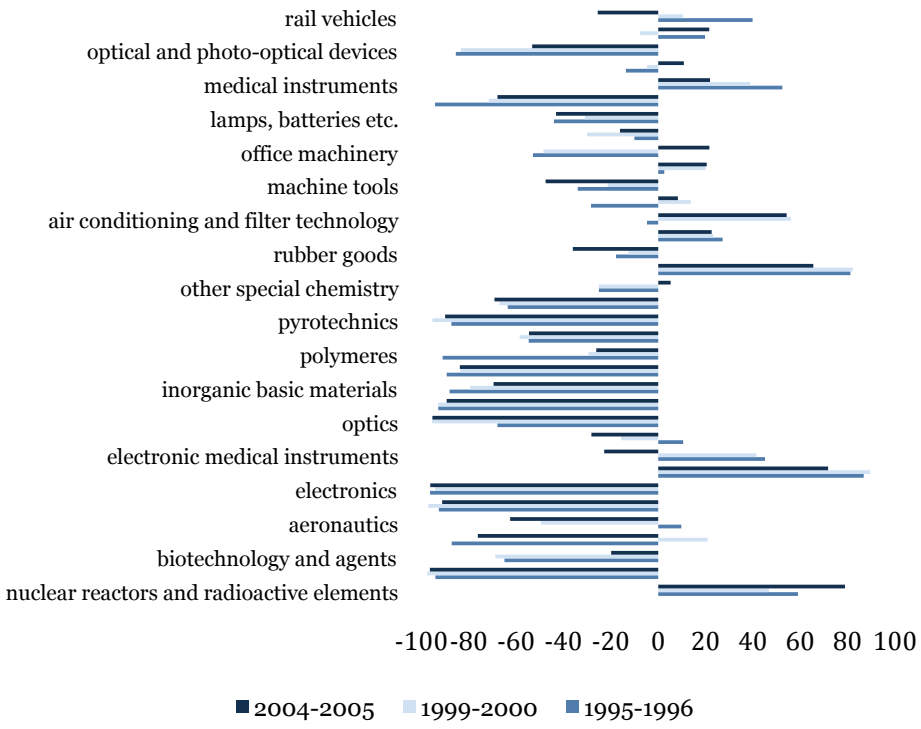
Source: Regional Key Figures 2010, DG-RTD

Figure 7: Technological specialisation Finland (2006)



Source: Regional Key Figures 2010, DG-RTD

Figure 8: Technological specialisation of Sweden (2006)



Source: Regional Key Figures 2010, DG-RTD

2.2.5 Regional patenting

As noted above, regional level patenting data, for 2006, is available at NUTS 1 level for the larger BSR countries: Denmark, Sweden, and Finland, with an clear internal north-south divide of patenting activities in Finland and Sweden[9]. The breakdown by technology classes is based on IPC classes, which are aligned to technologies and industries. Section A for example covers *agriculture*, *sports; games; amusements*; *footwear*; *wearing apparel*; *tobacco; cigars; cigarettes; smokers' requisites;* etc.

2.2.5.1 Denmark

Denmark is one of the leading patenting countries in Europe with, in 2006, more than 1,000 patent applications to the EPO. One third of the patents were in "Human necessities". In terms of growth rates, Section F - *Mechanical engineering; lighting; heating; weapons; blasting* shows the highest average annual growth between 2000-2006 with 7.5%, followed by Section A - *Human necessities* with 3.9%.

When *Human necessities* is analysed further, the following sub-classes are prominent:

- 67% in Medical or veterinary science; hygiene,
- 8.6% in Foods or foodstuffs,
- 8.2% Agriculture; forestry; animal husbandry; hunting; trapping; fishing, and

[9] Only with the rather recent changes of the NUTS system in Denmark, NUTS1 level patent analysis is introduced by EUROSTAT. However, it starts with provisional data for the Danish regions for 2007 only. From the so far available regionalised patent data, a wide dispersion can also be found in Denmark.

- 7.9% in Furniture; domestic articles or appliances; coffee mills; spice mills; suction cleaners in general

78% of the patents in the field of *Medical or veterinary science; hygiene* come from Hovedstaden – the capital region. Agriculture is strong in Midtjylland, while food is dominant in the capital region. Furniture and other creative industries' patents can be found in Nordjylland, with a slight concentration within Syddanmark.

2.2.5.2 Sweden

Sweden is a leading EU country for patenting countries with more than 2,500 patents in 2006. 28% of all patenting occurred in Section H – Electricity, followed by Section B - Performing operations; transporting (18.6%) and Section A – Human necessities (17.4%). The Electricity section is also the one with the highest growth rate between 2000-2006 with 3.2%; followed by Section B with 2.4%. While section E is a homogenous section, Section B is not. Thus, a further analysis of this section revealed the following main patenting fields:

- 25% in *Vehicles in general*
- 9.1% in *Hand tools; portable power-driven tools; handles for hand implements; workshop equipment; manipulators*
- 9% in *Machine tools; metal-working not otherwise provided for*
- 6.8% in *Physical or chemical processes or apparatus in general*

60% of the *Vehicles in general* patents come from Södra Sverige (SE2), and within this NUTS1 region, it is concentrated in Västsverige (SE23). *Hand tools patents* are concentrated in Östra Sverige (SE1), with 80% of the patents in this field. North Sweden, the least important region in terms of patents has the highest number of *Machine tools* patents with 37%. A similar analysis for the Section A reveals the following targeted fields:

- 72% in *Medical or veterinary science; hygiene*,
- 11% in *Furniture; domestic articles or appliances; coffee mills; spice mills; suction cleaners in general*
- 7% in *Agriculture; forestry; animal husbandry; hunting; trapping; fishing*

In the Medical or veterinary science; hygiene field 48% of patents are from Östra Sverige and 75% of this share from Stockholm alone. The south is also quite strong with a similar share of 47% of which 50% come from Västsverige (SE23) (Gothenburg with a number of major health research institutes).

2.2.5.3 Finland

Finland had 1,300 EPO patent applications in 2006 and is also one of the main patenting countries in the EU. Between 2000-2006, many sections faced a decline in terms of patenting; Section D – *Textiles*, paper lost 10% on average annually. A growth field with 8.7% is Section E – *Fixed constructions*. As expected the Electricity Section H is dominant with 39% of patents and Finland is also strong in section G – *Physics* with almost 20% of all patent applications. This section covers a number of sub-fields worth analysing on this sub-level. In this field, Finland has the following priorities:

- 50% in *Computing; calculating; counting*,
- 28% in *Measuring (counting G06M); testing*,
- 7% in *Musical instruments; acoustics*
- 6.7% in *Optics*

Computing and Measuring are concentrated in Etelä-Suomi, 60% of all computer patents and 50% of all measuring patents are from this region, while *Musical*

instruments patents are essentialy from Länsi-Suomi, but *Optics* patents are more evenly dispersed over the regions with a slight dominance of Etelä-Suomi.

2.2.5.4 Estonia, Latvia and Lithuania

All three Baltic States recorded very low number of EPO patent applications in 2006, respectively 11, 12 and 10 for Estonia, Latvia and Lithuania. The small absolute number of patents and the absence of patents in some fields suggests, firstly, that the business sector is not oriented internationally (therefore a national patent may suffice) and secondly, that there is an absence of industries, or of R&D performing firms, in some key fields. Hence, given the low number of patents, it is not possible to identify a technological specialisation for these three countries. In Latvia, section C – *Chemistry; metallurgy* is clearly dominant but the eight patents do not provide a sufficiently strong technological base.

2.2.5.5 Polish regions: Pomorskie, Warminsko-Mazurskie and Zachodniopomorskie

The Polish region of Pomorskie had three EPO patents in 2006. Although a relatively strong industrial region, the region's industrial structure is predominantly petrochemical and shipbuilding; industries with a rather low propensity to patent.

Warminsko-Mazurskie had two EPO patents in 2006. Again, the industrial structure is one explanation, since the regional contribution to national gross value added is marginal (less than 3%), with one quarter provided by industry, and the region is largely agricultural.

Zachodniopomorskie had five EPO patent applications in 2006. The region is focused on a marine-based and agricultural economy, which includes ports but also tourism. Despite a large number of micro companies (RIM 2011), the current industrial structure does not necessarily foster R&D activity leading to international patents.

2.2.5.6 Mecklenburg-Vorpommern

Mecklenburg-Vorpommern is the least patent-intensive region in Germany. On average there are 70 patent applications at the EPO annually, in 2006 a record of 95 was achieved and indeed, between 2000-2006, the region had an average annual growth rate of 7.7% in EPO patents. Section H – *Electricity* had the highest growth rate of 41% (an absolute increase from 3 to 22), followed by Section F - *Mechanical engineering; lighting; heating; weapons; blasting* with 13.4%.

2.2.5.7 Schleswig-Holstein

Schleswig-Holstein is also not among the leading German technological regions. In 2006, it had 385 patents. Section D – Textiles, paper enjoyed the highest growth with 20% between 2000-2006 – yet, the section has the lowest absolute number of patents. Declining shares can be found in *Chemistry, metallurgy*, *Physics*, and *Electricity*. About 35% of all patents are in the Section B - *Performing operations; transporting*. A closer analysis of the section revealed that:

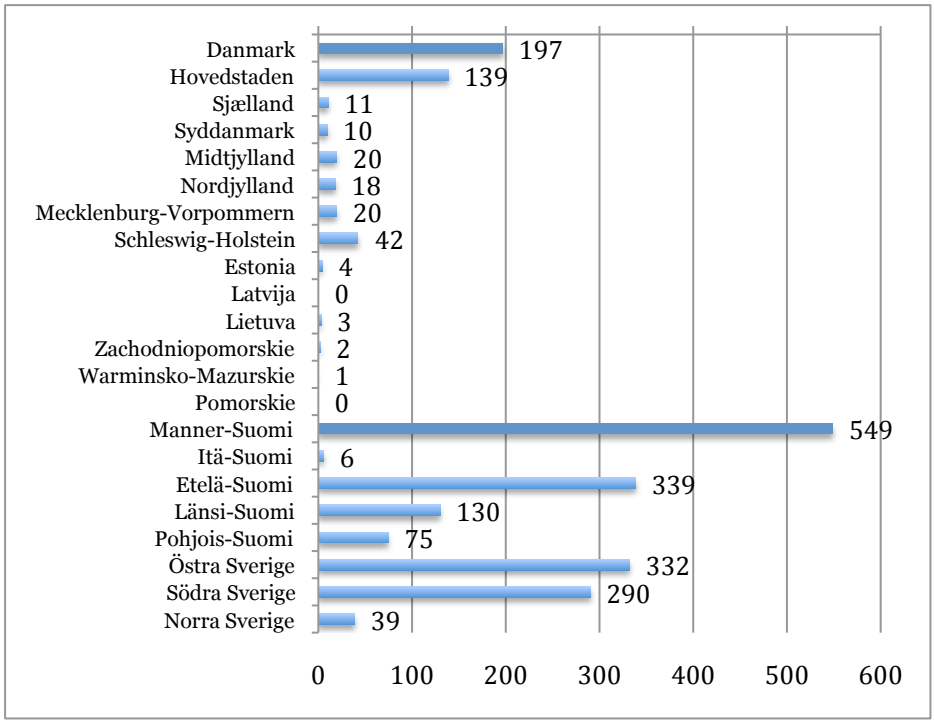
- 14% are in *Vehicles in general*,
- 14% are in *Conveying, packing*,
- 8.8% are in *Physical or chemical processes or apparatus in general*,
- 8.8% are in *Ships or other waterborne vessels; related equipment*.

2.2.6 High-tech patenting

High-tech patenting is an interesting sub-set of a small number of highly important patent sections. The BSR obtained almost 1,500 high-tech patents in 2006, mainly from Sweden and Finland. However, between 2000-2006, high-tech patent applications fell in all Baltic Sea regions with the exception of Södra Sverige (5.4%)

and, albeit from very low levels, in Mecklenburg-Vorpommern (9.4% 20 high-tech patents) and Estonia (22.4%, four high-tech patents).

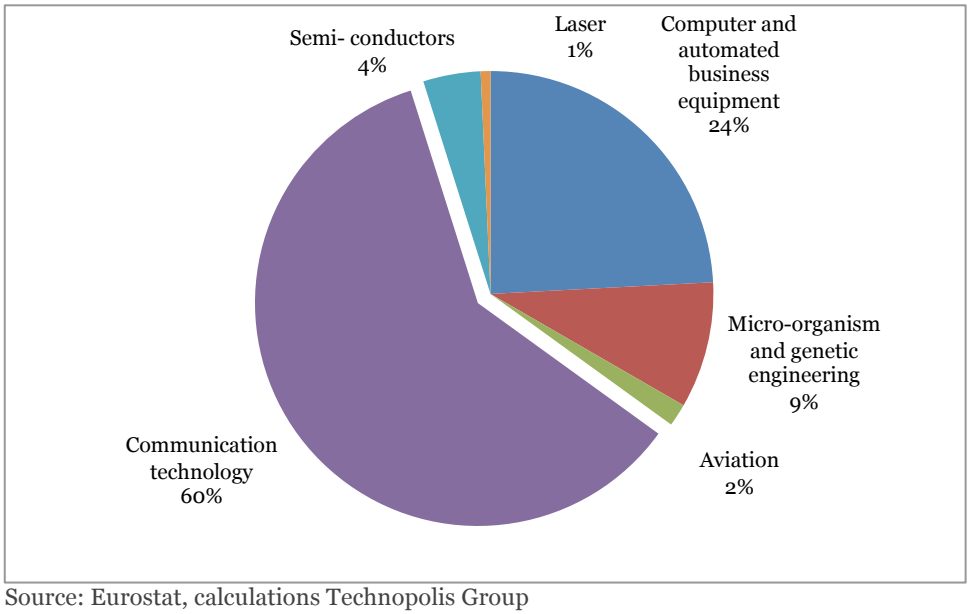
Figure 9: High-tech patenting in BSR (2006)



Source: Eurostat, calculations Technopolis Group

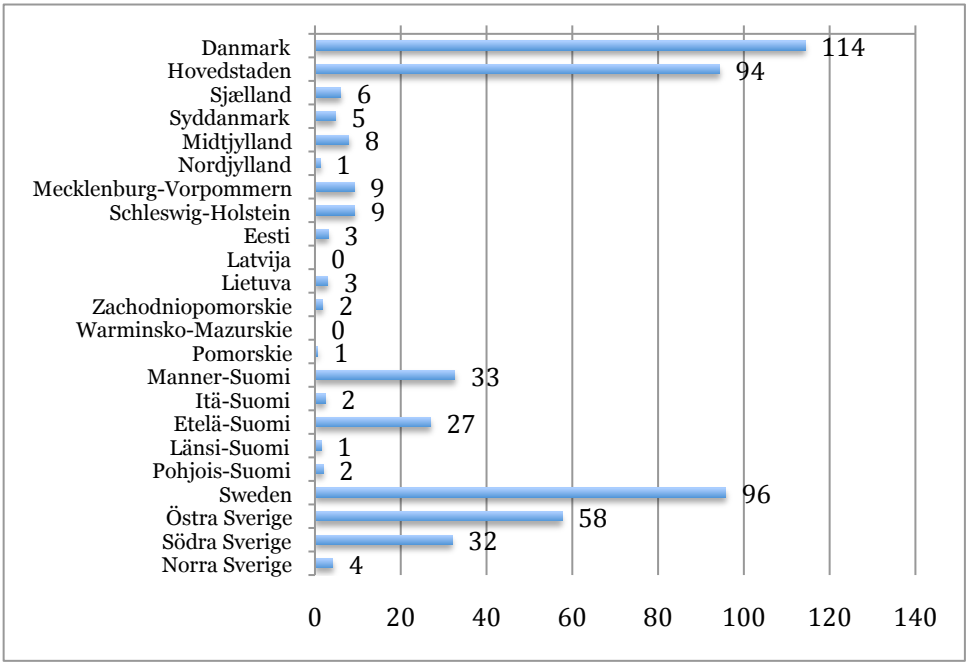
Looking at the breakdown by individual high technologies, the BSR is clearly focussed on communication technology with 60% of high-tech patents in this field, basically thanks to Finnish and Swedish regions.

Figure 10: High tech patenting breakdown in BSR



Source: Eurostat, calculations Technopolis Group

Figure 11: Biotechnology patents in the BSR



Source: Eurostat

Similarly to other high tech patent fields, the number of biotechnology patents from the BSR has been falling, by 4.3% on average annually from 2000 to a total of 268 biotechnology patents in 2006. Indeed, while the biotech sector grew until 2004, since 2005 patent applications are falling. Denmark is still the leading country in the BSR when it comes to biotechnology patents, with 82% of its biotechnology patents are coming from the capital region. However, Denmark's absolute number of biotechnology patent applications fell 4.7%, Sweden's 5.1% and Finland's fell 1%.

Case 1: BioCon Valley (Mecklenburg-Vorpommern

BioCon Valley is the regional life-science cluster in Mecklenburg-Vorpommern. It dates back to 1996 when the federal "BioRegio" competition was launched and 17 regions competed for funding of over €100 million. Although Mecklenburg-Vorpommern was not among the winning regions, the effort to set up a regional network resulted in the establishment of the cluster, and all of the 17 original regions are now part of the 25 German 'bio-regions'.

BioCon Valley aims to promote cooperation with other regions, in particular from the BSR, in the field of life sciences. It has roughly 160 members from industry, research, public bodies and support organisations, who actively support the aim to make the region the leading German health economy region. The cluster, which started to establish cooperation with international partners early on, is partially financed by its members and by funding coming from ERDF and the federally funded initiative hic@re.

As a network broker, the BioCon Valley cluster initiative has brought a noticeable stimulus for the regional development in Mecklenburg-Vorpommern. Its technological focus helps the region to develop a unique profile within Germany, while, its inclusion in ScanBalt means the wider BSR is a source of potential cooperation partners.

The smart specialisation strategy of Mecklenburg-Vorpommern is a model for several other, industrially weaker regions, for instance, from Poland and the Baltic States. The choice of biotechnology – life sciences is somewhat due to chance – and the established bottom-up initiatives have create a dynamic that was taken up and fostered by the regional government.

Source: BioCon Valley (2008): Branchenreport 1-2008. BioCon Valley (2008): Annual report 2008; Dohse, D. (2005): Clusterorientierte Technologiepolitik in Deutschalnd: Konzepte und Erfahrungen, in: Technikfolgenabschätzung Theorie und Praxis, 14/1, pp.33-41 DPMA (2007): Patentatlas. http://www.biotechnologie.de/BIO/Navigation/DE/Hintergrund/studien-statistiken,did=48336.html

2.3 Towards smart specialisation in the BSR ?

The preceding sections have summarised available statistics and evidence on innovation potential, industrial structures and trends and technological specialisation. In addition, to the analysis of data at EU level, the regional briefs give further insight into the emergence of new clusters or sectors. The main elements of the regional briefs are summed up on the following pages in Figure 12. Clearly this report has had to adopt a 'broad-brush' approach given the time and resources available but both the statistical analysis and the descriptive summaries of evidence from each region, underline that there is both a 'natural' (resource based, maritime trade centres, major or capital cities where services and creative industries cluster etc.) and 'path dependent' (existence of an industrial tradition in certain sectors, etc.) explanation for much of the

At the same time, the potential to 'evolve' the specialisation patterns to more knowledge intensive services or higher-tech and higher value added manufacturing sectors is dependent on the 'innovation system' that is in part fostered by public policy interventions. In this respect, the 'innovation gap' between the various regions round the BSR is significant. However, the performance of specific regions varies depending on the indicators analysed and trends such as the high growth rates in creative industries or business services in some of the less favoured regions tend to underline that a number of the 'less advanced' regional economies are under-going significant structural change.

To sum up, the conclusions that can be drawn from the analysis include:

- Although the regions of the 'south-east coast' of the BSR are significantly weaker in terms of technological innovation capacities and potential. These regions may be classified as 'knowledge absorbing regions', in the sense that their first priority should be to upgrade productivity of the business sector through 'embodied innovation' (acquisition of machinery and equipment, retraining, etc.). However, emerging 'clusters' in the German and Polish regions and the Baltic States provide a basis around which a smart specialisation policy can be built.
- A significant share of current business activity is related to a natural 'specialisation' or industrial traditions that are major employers and the development of such sectors, not always considered amongst 'high-tech' policy priorities. These include construction, wood, paper and pulp, minerals and metals, and a critical sector in many of the BSR regions, namely food & drinks. Smart specialisation policies need to take such sectors into account when deciding where to prioritise investments into innovation infrastructure. Equally, services including (maritime) transport but also financial and business services merit attention.
- As a whole the BSR, does appear to be 'specialised' in a certain number of key technology fields, notably ICT and biotechnology (a more detailed analysis by sub-fields would be required to understand where synergies and complementarities exist between regions). Such common specialisation offers the potential for BSR wide technology programmes.

Figure 12: Summary specialisation profile for each region

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
Estonia	• Technology programmes in the fields of ICT, biotechnology, material technologies, energy, national defence and security • Estonian Research Infrastructures Roadmap published in 2010 & ERDF co-financed programme supports R&D infrastructure • Competence centres funded (incl. by ERDF) since 2004 (electronics, cancer research, food, etc.)	• Transport and logistics • Energy • Construction • ICT • Business services • Processed food	• Four public universities with research concentrated in Tartu and Tallinn Technology • Tallin Technology Park and Tartu Science Park
Etelä-Suomi (FI)	• Cooperation and networking of innovation actors and SMEs, • Innovation services • Business incubators • Special knowledge of areas • Electronic advisory and customer service systems • Applied research.	• ICT • Business services • Energy • Construction • Healthcare	• Home of Finnish Innovation Fund (Sitra) • Academy of Finland • Finnish Funding Agency for Technology and Innovation (Tekes) • Research and Innovation Council
Hovedstaden (DK)	• Development of stronger clusters, especially the development of cleantech clusters • Entrepreneurs growth and business development (e.g. CIBIT Accelator project for Danish start-up and small businesses) • Life sciences & biotech (e.g Healthcare Innovation Centre) • Development of the workforce (represents 19% of total investment of Growth Forum)	• Life science and bio-tech • Environment, cleantech and renewable energies	• University of Copenhagen (the largest university in Northern Europe), the Technical University of Denmark and the Copenhagen Business School. • Symbion science park and incubators: IT, biotechnology, medical
Itä-Suomi (FI)	• Specific attention paid to wellness technology, environmental knowledge, measurement techniques, optics and sensor technology as well as the creative industries.	• Agriculture, • Services (incl. public administration) • Machinery, forestry, pulp and paper	• University of Eastern Finland, with four faculties notably, Faculty of Science and Forestry and the Faculty of Health Sciences

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
	• R&D activities concentrated in new emerging sectors such as health and to stimulate the well established sectors such as machinery, forest and paper.		
Länsi-Suomi (FI)	• ICT • Bio-technology and medical technology • Engineering • Automation • Optoelectronics and laser technology • Services industry	• ICT • Electric engineering and mechanical engineering	• University of Tampere • Tampere University of Technology • VTT Technical Research Centre of Finland
Latvia	• Five broad fields: – Energy and environment – Innovative materials and technologies – National identity – Public health, Sustainable use of local resources • Horizontal support measures for clusters development	• Information technologies • Logistic • Food processing • Metalworking/processing	• University of Latvia • Riga Technical University • Riga Srandins University • Latvia University of Agriculture

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
Lithuania	• Ensure the quality of human life (including biotechnology ecosystems, and climate changes); • Research intended for the development of a knowledge-based society (e.. ICT); nanotechnologies; nuclear safety; • 5 Science industry clusters/Valleys – Biomedical research – Laser technologies and material sciences – Chemistry and mechatronics – Agro science – Marine science	• Photo-electronic –InnoCluster LT • Eight sectors identified as having potential for clusters: – Machinery and equipment manufacturing – Wood processing and furniture – Textile and clothing – Food and drinks – Chemicals – ICT – Biotechnology – Laser and its components	• Kaunas University of Technology • Vilnius Gediminas Technical University • Klaipeda University • Lithuanian Innovation Centre • Several science and technology parks active in the international sphere eg. KLaipeda Science and Technology Park, KTU Regional Science Park
Mecklenburg-Vorpommern (DE)	• Health economy fields – Health prevention – Health tourism – Rehabilitation – Food – Health ageing • Science-based technologies – Bio-medicine – Plasma	• Bio-technology • Plasma science • Other modern life and health care related fields	• MPI for Plasma Physics • Leibniz Institute for Plasma Science • University Greifswald

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
Mellersta Norrland (SE)	• Increase policy importance to education programmes, as well as to research capability, in technical chemistry, connected with the chemistry and bio-refinery trust in Domsjö. • In Mittuniversitetet greater focus is been placed on research profiles as: the digital society, learning & education, the forest as a resource, tourism, sports & experience technology	• Cluster initiatives in areas such as forestry (Fibre Network, Packaging Mid Sweden and Ywood), energy (Biofuelregion) ,process industry/biorefinery (Processum) and tourism/sports/equipment (Peak Innovation) • Other recent cluster initiatives e.g. in the field of safety and security.	• Mid Sweden University has six research profiles related to regional issues, e.g. digital society, forestry and tourism, etc
Midtjylland (DK)	• Highest priority is given to supporting the start-up and development of innovative companies • Especial focus on environment and energy supported by the Plan for energy and environment In addition, healthcare and foods sector are well supported	• Environment and renewable energies: (e.g biogas, wind turbines pumps and other industrial machines. • Healthcare and life science • Food (e.g. dairy, food ingredients & sweeteners and sugar).	• University of Aarhus and the Aarhus University Hospital • Agro Food Park • Several key centres supporting bio-tech and health care sector (Centre for Public health, , Med-tech innovation centre and Centre for Pervasive healthcare)
Nordjylland (DK)	• Renewable energy and new energy forms • Policy focus on clusters in traditional industries including food, construction and maritime clusters, while the high tech industries include ICT and health cluster	• ICT • Manufacturing • Creative industries and tourism	• Aalborg University, e.g. Centre for Teleinfrastructure
Norra Mellansveige (SE)	• Innovation platforms – High Voltage Valley – The Packaging Arena – Fiber Optic Valley – Triple Steelix	• Pulp & paper • Forest products • Metal manufacturing	• Teknikdalen Foundation • Borlänge Science Park • Sandbacka Park

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
Östra Mellansverige (SE)	• Regional development plan has been supplemented with a regional action plan for innovation (Regional handlingsplan för innovation) • The action plan focuses on three areas, i.e. innovative environments, funding and creating linkages for increased cooperation between academy, business and public sector • No sectoral priority is found in the policy discourse	• Life-science and biotechnology • Life science/biotechnology (biotechvalley.nu and Uppsala Bio • Automation (Robotdalen), • And food (an international competence center around Grythyttan).	• There are several universities, e.g. Uppsala University, universities of Linköping, Örebro and Mälardalen and two hospital universities
Övre Norrland (SE)	• ICT and biotechnology (berries). • Other competence areas have been identified in the region, e.g. winter test driving, safety and security, creative industries/tourism, environmental technology and e-health	• Minerals - mining, • Forestry • Energy	• Luleå University of Technology, • Umeå University • Umeå university hospital • Division of the Swedish University of Agricultural Science. • Akademi Norr
Pohjois-Suomi (FI)	• Five centre of expertise clusters – ICT – Wellness – Environmental technology – HealthBio – Nanotechnology and future materials	• High-tech manufacturing in the Oulu city-region • Strong role of agriculture and forestry as well as tourism	• University of Oulu • Oulu Innovation Ltd
Pomorskie (PL)	• No clear prioritisation • Selection of clusters on the basis of competitive based process (e.g. ICT, Eco-energy and Construction on 2015 Regional Programme)	• ICT • Eco-energy • Construction	• Pomeranian Science and Technology • Gdańsk Science and Technology Park • Gdansk University of Technology
Schleswig- Holstein (DE)	• No clear prioritisation	• Maritime economy	• University of Kiel

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
	• Natural prioritisation of maritime economy	• Life science –Life Science Nord • Food industry • ICT and new media - DiWish • E-Health- medRegio • Wind energy • Nanomaterials	• IFM-GEOMAR • Fraunhofer Institute Marine Biotechnology • Business Development and Technology Transfer Corporation of Schleswig-Holstein GmbH (WTSH)
Sjælland (DK)	• Focus is especially on improving the access to capital for entrepreneurs (e.g. growth Driver for Region Zealand) • Special attention is given to cleantech and renewable energy	• Services (incl. public administration) • Mechanical Engineering • Renewable energies (e.g. energy cluster Zealand) • Transport and eco-mobility	• Roskilde University

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
Småland med öarna (SE)	• The Regional Growth Programme prioritises five clusters: Furniture Empire (Möbelriket), Kingdom of Glass (Glasriket), Aluminum Empire (Aluminiumriket), Heavy Vehicles (Tunga fordon) and Bioenergy Cluster Småland (Bioenergikluster Småland) • The regional development programme also points out prioritised regional strategies up to 2010: living environment and attractiveness; communication; trade and industry; labour market and competence; and international co-operation	• Key sectors along the coastal areas and in the islands are tourism and agriculture. • Several well established clusters in forestry and manufacturing industry, e.g. Aluminiumriket (mechanical engineering) and Tunga fordon (automotive). • Newer clusters have been established in the sectors of tourism and agriculture in the islands of Öland and Gotland.	• Jönköping University • Gotland University • Linneaus University. • There are also two national research institutes, the Glass Research Institute (Glafo) and the Swedish Casting Industry's Technology, Trade and Training Institute.
Stockholm (SE)	• National and regional R&I policy give priority to strategic research areas in the fields of medicine, technology and climate • In life sciences, two joint initiatives with Uppsala region exist, the first to develop a research centre (Science for Life Laboratory), the second to market the region (SULS)	• Knowledge intensive sectors e.g. ICT, life science, and financial services. • Energy and Clean technology industries • Medical technology	• Eight VINN Excellence Centres have been established (six at the Royal Institute of Technology, one at Stockholm University, and one at Uppsala University. They are mainly into IT and Biotech) • Several strong research universities, e.g. the Royal Institute of Technology, Karolinska Institutet, Stockholm University, the Södertörn University, Stockholm School of Economics and a number of specialised university colleges
Syddanmark (DK)	• Welfare-technologies & services (WellTech Region) • Offshore industry • RoboCluster (robotics, automation and intelligent mechanical systems) • Technological development in companies: product development, technology and material development	• Medical/ health care • Cleantech • ICT and knowledge • Specialised in construction and foods	• University of Southern Denmark (notably ICT and biotechnology) and hosting a number of national research centres • Odense University Hospital (Scandinavian's biggest and most modern hospital)
Sydsverige (SE)	• The action plan for innovation in Region Skåne	• Key strengths are in life science, ICT and food,	• Lund University and the Swedish University of

Region/ Country	Specialisation focus of research & innovation policy	Leading sectors/clusters	Key scientific and research centres/ infrastructures
	addresses the need for creating new policy platforms for innovation • Other areas of focus are in relation to entrepreneurship, development of new and existing businesses and innovative environments	with 24% of Swedish agriculture and food processing. • In Blekinge, there is a strong focus on ICT, with the innovation systems/ cluster initiatives of Telecom City and Netport.Pending • In Skåne, cluster initiatives are found in clean tech, moving media and risk & security.	Agricultural Sciences in Alnarp • Blekinge Institute of Technology, • Malmö University, • Kristianstad University
Västsverige (SE)	• Four areas receive special support: biomedicine and health, smart textiles, environment, energy and sustainable transportation, and shipping and the maritime sector • Regional platforms for interactive open innovation in prioritised areas • Regional triple helix partnerships are part of national R&D, innovation systems or cluster programmes, e.g. Smart textiles, Biomedicin i Väst and Hälsoteknikalliansen	• A main sector is automotive manufacturing • Other key sectors prioritised in the regional development plan are, e.g. biotechnology, tourism, food processing, textiles, ICT, petro chemical industry, environment/energy and maritime industries.	• Several strong universities, e.g. Chalmers University of Technology, Gothenburg University and the university colleges of West, Borås, Skövde and Halmstad. • There are also Sahl-grenska University Hospital, six national research institutes and several regional institutes.
Warminsko-Mazurskie (PL)	• No clear prioritisation • General support of cluster initiatives and creation of science and technology parks on competitive-based process	• Tourism • Furniture • Food sectors • ICT	• University of Warmia and Mazury • Institute of Animal Reproduction and Food Research of Polish Academy of Sciences
Zachodniopomorskie (PL)	• No clear prioritisation • Selection of clusters on the basis of competitive based process • General support of cluster initiatives and creation of science and technology parks on competitive-based process	• Chemical industry “Green Chemistry” • ICT	• The University of Szczeci • Zachodniopomorski Technological University • Koszalin University of Technology • Maritime University of Szczecin • Szczecińk Science and Technology Park

Source: Regional briefs for this study, ERAWATCH and RIM database and reports. Compilation by authors.

3. Innovation strategies and policies in the BSR

In order to build an overview of innovation strategies and policy measures round the Baltic Sea, information was compiled from the relevant EU level policy benchmarking databases: the joint ERAWATCH-InnoPolicy TrendChart (EW-TC) database for national policies and the Regional Innovation Monitor (RIM) database for regional policies. This first scan served as a foundation for the work of the study team who completed and validated the result of the mapping at national (for the three Baltic States) and regional levels through interviews and a review of documentation. A detailed list of the documents per country and region can be found in Appendix C.

3.1 Innovation policies and strategies in the BSR

Figure 13 provides an overview of the number of identified innovation policy documents per country (including regional policy documents). The most recent key strategy documents are identified. As can be seen most of the Member States have in place a research or innovation policy strategy at national level; while in the two larger Member States, technology, innovation or regional innovation strategies have been drafted (although in some cases such as Pomorskie they are now relatively out of date).

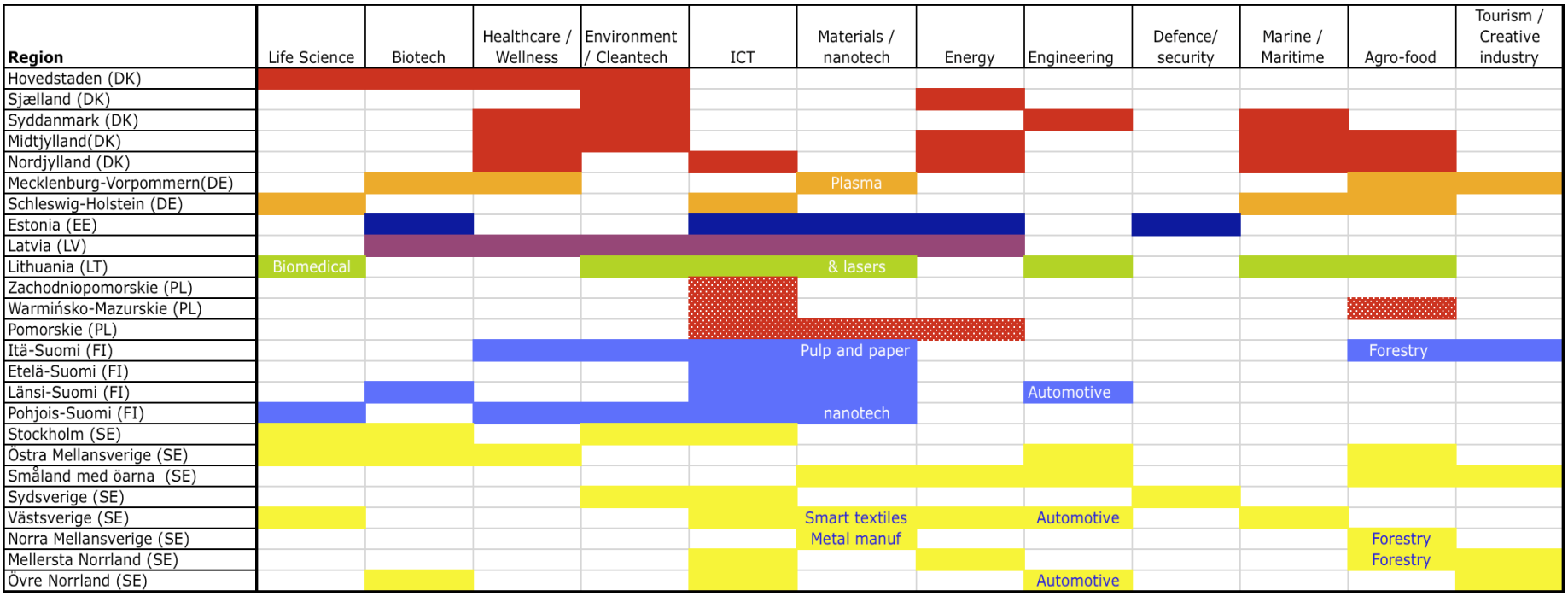
Figure 13: Summary of policy documents/strategies identified

Country	# of policy documents	Most recent main strategy document
Denmark	38	• Regional Partnership agreement on growth and business development for each of the five regions (2007) • Innovation Denmark 2007-2010 (updated 2008)
Estonia	8	• Knowledge-Based Estonia. Estonian Research and Development and Innovation Strategy 2007-2013
Germany	20	• Guidelines for technology policy Mecklenburg-West Pomerania (2009) • Programme for the Future of the Economy - Schleswig-Holstein (2007)
Latvia	7	• Guidelines for Development of Science and Technology for 2009-2013
Lithuania	30	• 2010-2013 implementation plan of the Lithuanian innovation strategy 2010-2020
Poland	22	• Regional Innovation Strategy in Westpomeranian Voivodship (2005, in process of being updated in 2010) • Regional Innovation Strategy of the Pomorskie region (2004) • Project of the Regional Innovation Strategy of Warmia and Mazury (2010)
Finland	34	• Research and innovation policy guidelines for 2011–2015 (2010) • Finland's national innovation strategy (2008)
Sweden	37	• A national strategy for regional competitiveness, entrepreneurship and employment 2007-2013 (2007)
Total	**196**	

Source: ERAWATCH-TrendChart and Regional Innovation Monitor databases, data extracted January 2011. Calculations by Technopolis Group

The policy specialisation matrix in Figure 14 summarises the policy focus on specific technologies or clusters in the regional (or national) strategies.

Figure 14: specialisation focus of regional innovation strategies in the BSR



Source: Regional briefs for the study, ERAWATCH and Regional Innovation Monitor databases and reports. Compilation by Technopolis Group.

As can be seen, the BSR innovation strategies, whilst covering a diverse range of fields and sectors, do converge around a number 'specialisations' notably:

- ICT (17 regions);
- Agro-food (including forestry) (11)
- Healthcare/wellness (10)
- Biotech (8) and life sciences (7).
- 'Cleantech' (notably Denmark and Finland);
- Energy (notably renewables) (with some probably overlap with cleantech field);
- Materials (ranging from nanotech, through plasma to more traditional materials)

A number of other priorities appear less often such as forestry, tourism/creative industries (although often linked to wellness or ICT/media respectively) and marine technologies despite their importance in the BSR economy.

Despite such thematic or sectoral focusing of strategies, most interviewees argued that their region or country was not pursuing or, even, developing a 'smart specialisation' strategy. The exceptions were mainly in Sweden and to some extent Finland where national programmes such as VinnVäxt (Sweden) or the Centres of Expertise (Finland) have supported regional strategies or 'bottom-up' partnerships to develop more specialised policies. In Denmark, the regional growth programmes and cluster approaches also integrate some elements of specialisation into policy, which, however remains largely 'nationally driven', while being influenced at regional level by major companies (e.g. in food sector, wind turbines, etc.) and their supply chains.

Case 2 Skåne Food Innovation Network (Skånes Livsmedelsakademi)

Formed on the initiative of industry in 1994, the Skåne Food Innovation Network, works widely to develop the Swedish Food Industry, through increased innovation rate and value added. In addition, the network also tries to increase attractiveness among young, well educated people, to develop the sector and seeks to disseminate knowledge about the modern Skåne food culture, and how it can contribute to health, well-being and positive food experiences.

Partners are 40 larger companies and organisations. They are not limited to the region, but also larger companies with parts of their business in the region. Members are around 35 smaller enterprises from across the entire value/supply chain. There is a board with representatives from companies, research and society, to reflect the width and strengths of the Skåne food industry. Funding includes partner and member fees, but also grants from national funding agencies; notably coming from VINNOVA.

The network grew quickly into a well working network, with large commitment from industry, research and society. It has helped to successfully promote simultaneous involvement and commitment from industry, universities and organisations for business and/or user driven operation.

In all three Baltic States, specific technologies are mentioned in national strategies and, at least, in Estonia and Lithuania corresponding policy measures aim to support a focusing of effort (competence centres and national technology programmes in Estonia and 'valleys' and joint research programmes in Lithuania). Latvia has recently launched a 'competence centre' programme, however, the Latvian analysis suggests that the concept of smart specialisation is not yet on the policy agenda. A problem in all three Baltic countries is that the "focus" of policies remains rather defined by rather broad technology field and that implementation of the programmes does not always lead to the expected concentration of funds on specific fields.

In two out of three Polish regions, the level of development of a focused innovation strategy appears to be weak, with 'embryonic' efforts to begin develop a more targeted regional policy. However, Pomorskie (see case) has a more developed policy with three strategic clusters selected after a competitive call (ICT, eco-energy and construction).

Case 3 The Pomorskie Voivodeship (Poland) – Support for Strategic Clusters

In 2009, the Pomorskie voivodeship formally adopted the 'Regional Cluster Programme: 2009-2015'. Comparated to other Polish regions, this programme is unique because it only supports clusters which are evaluated as strategically important for the development of the voivodeship. More specifically, the programme foresees the support for three types of clusters, including: (1) strategic clusters, (2) sub-regional (local) clusters, and (3) embryonic clusters (technological networks).

So far, three initiatives have obtained a status of strategic clusters: the Baltic Eco-Energy Cluster (BEEC), the Pomeranian ICT Cluster and the construction Cluster**.** The main benefits of obtaining a status of strategic cluster are three-fold. First, the cluster can receive support for the functioning and development of cluster. Second, preferences can be given to proposals submitted by those strategic clusters for certain support measures of the Regional Operational Programme and the regional component of Human Capital Operational Programme. The third benefit associated with the status of strategic cluster is that regional authorities can issue a recommendation that can be presented during the application for other public support programmes (e.g. EU Structural Fund interventions – National Operational Programmes, the Seventh Framework Programme, and the European Territorial Co-operation Programme).

The most important lessons to be drawn from the case of the Pomorskie Voivodeship is that developing cluster programme is a long-term process, it involves a lot of efforts and many stakeholders. In order to succeed, establishing priorities is not enough. They key to success is to systematically monitor regional trends, in order not to loose sight of new emerging opportunities.

The two German regions present slightly different approaches with Mecklenburg-Vorpommern prioritising specific technology fields linked to major public research centres (e.g. plasma research) or the core competencies of regional universities (notably health economy) plus the BioCon Valley cluster. Schleswig Holstein has a more 'bottom-up' approach with policy being driven by two main clusters (Life Science Nord and the 'maritime economy'.

Via the interviews, the issue of the extent to which opportunities for synergies with other BSR were integrated into regional strategies was examined. In most cases, the current level of co-operation is limited to specific co-operation projects (funded via EU or eventually Nordic co-operation programmes), see section 5. Very few examples can be identified of regions specifically integrating an 'external synergies' analysis into their regional strategic planning process. Regions which reported links between their own strategies and Baltic Sea co-operation included Pomorskie, Mecklenburg-Vorpommern, Schleswig-Holstein. Other regions tended to report more bilateral/cross-border co-operation (e.g. Helsinki-Tallinn, Medicon Valley and other Öresund co-operation platforms).

3.2 Research and innovation measures

Where policies are strategically focused, it would be logical to expect specific policy measures (programmes or initiatives) to focus on the same sectors. All relevant research and innovation measures (programmes) contained in the EW-TC and RIM databases for the BSR were mapped and cross-checked during the interviews with regional stakeholders. Appendix C presents the list of 306 national innovation policy measures and 96 regional 'key'[10] measures in the BSR.

Equally, in larger (Federal) countries, the regional level is more important and so the total count of national and regional measures is more relevant. This explains the 'ranking' and the relative positions of Finland (with a relatively large number of specific programmes targeting sectors or technologies exist) versus Germany or Poland (broader programmes less targeted on specific sectors or technologies).

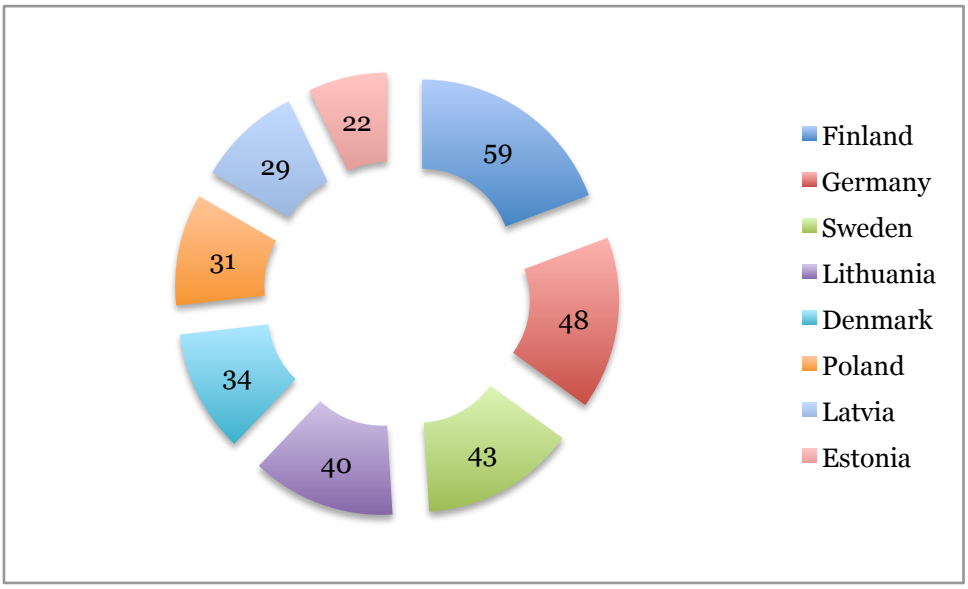
[10] The RIM database should include, at a minimum, a description of the six main measures in each region. The three Baltic States are only monitored by ERAWATCH-TrendChart at the national level.

Equally, in larger (Federal) countries, the regional level is more important and so the total count of national and regional measures is more relevant. This explains the 'ranking' and the relative positions of Finland (with a relatively large number of specific programmes targeting sectors or technologies exist) versus Germany or Poland (broader programmes less targeted on specific sectors or technologies).

Figure 15 and Figure 16 present respectively the split per country of the 306 national research and innovation measures identified and the policy prioritisation of the measures based on the categorisation used in the EW-TC database. Clearly only counting measures (n=306) does not take into account their financial importance in the national RTDI budgets. Second, the figures can be influenced by the extent to which national agencies work through a larger number of smaller programmes or a few major programmes.

Equally, in larger (Federal) countries, the regional level is more important and so the total count of national and regional measures is more relevant. This explains the 'ranking' and the relative positions of Finland (with a relatively large number of specific programmes targeting sectors or technologies exist) versus Germany or Poland (broader programmes less targeted on specific sectors or technologies).

Figure 15: National research & innovation measures in the BSR, number per country



Source: ERAWATCH-TrendChart database February 2011. Calculations Technopolis Group.

Given the overall figures, Figure 16 gives an insight into the national policy objectives (or priorities) pursued round the Baltic Sea by the public authorities. The focus is on support for applied research and technologies and, in particular, on measures aimed on excellence in research in universities and public research centres (19%) and linkages between this 'research base' and the business sector (16%).

Figure 16: Priorities of national innovation measures in the BSR

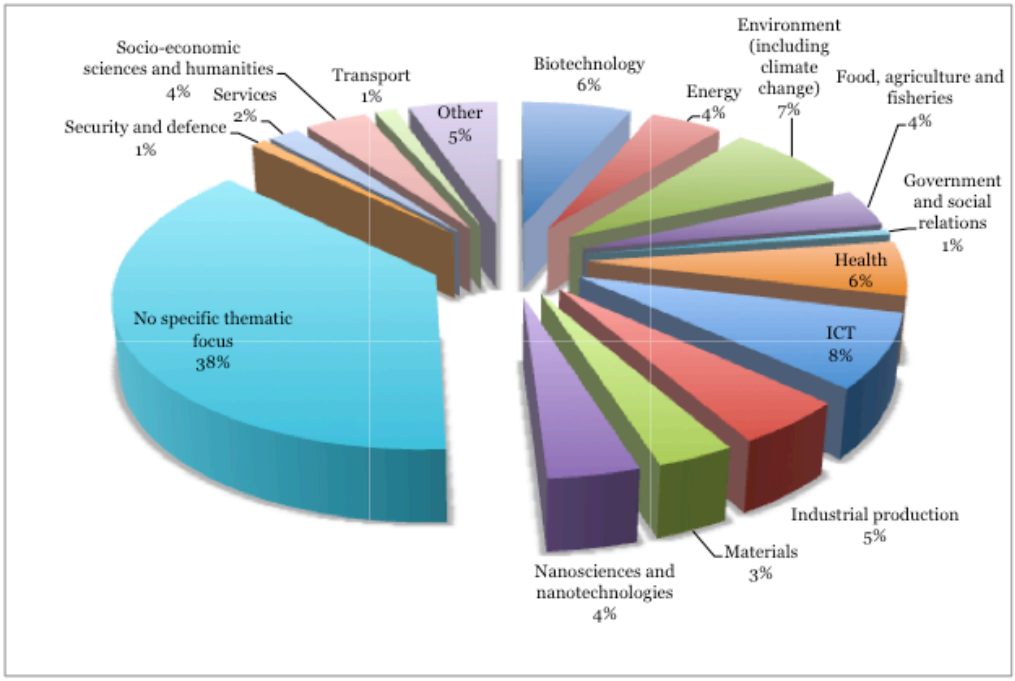
EW-TC Policy categorisation priorities	Frequency of priority in BSR (n=306 policy measures)
1. Governance & horizontal research and innovation policies	**15%**
1.1. Support to policy making (policy intelligence)	1%
1.2. Research and Innovation strategies	8%
1.3. Horizontal programmes/measures	6%
2. Research and Technologies	**40%**
2.1. Funding for universities and research organisations	19%

EW-TC Policy categorisation priorities	Frequency of priority in BSR (n=306 policy measures)
2.2. Science and industry linkages	16%
2.3. State aid measures in support of business R&D	5%
3. Human Resources (education and skills)	**8%**
3.1. S&T education	3%
3.2. Research personnel	3%
3.3. Skills development and recruitment	2%
4. Enterprises	**14%**
4.1. Support to sectoral innovation programmes	3%
4.2 Support to entrepreneurial innovation	6%
4.3 Support to innovative start-ups and access to finance	5%
5. Markets and innovation culture	**4%**
5.1 Measures in support of innovation culture	2%
5.2 Support to the creation of new markets	0%
5.3 Intellectual property protection and standards	2%

Source: ERAWATCH-TrendChart database, data extracted February 2011. Calculations by Technopolis Group. The percentages are the frequency with which each priority was selected as a first, second or third order priority for each measure.

Figure 17 explores the 'thematic technological' focus of the national research and innovation measures in the BSR. While almost 40% have no specific thematic focus (i.e. no targeting of specific technologies or sectors in the selection criteria of the project calls, etc.), a number of themes are clearly of higher priority in the BSR, namely: ICT; environment (including climate change); health; biotechnology, industrial production, energy, nanotechology and food, fish and agriculture.

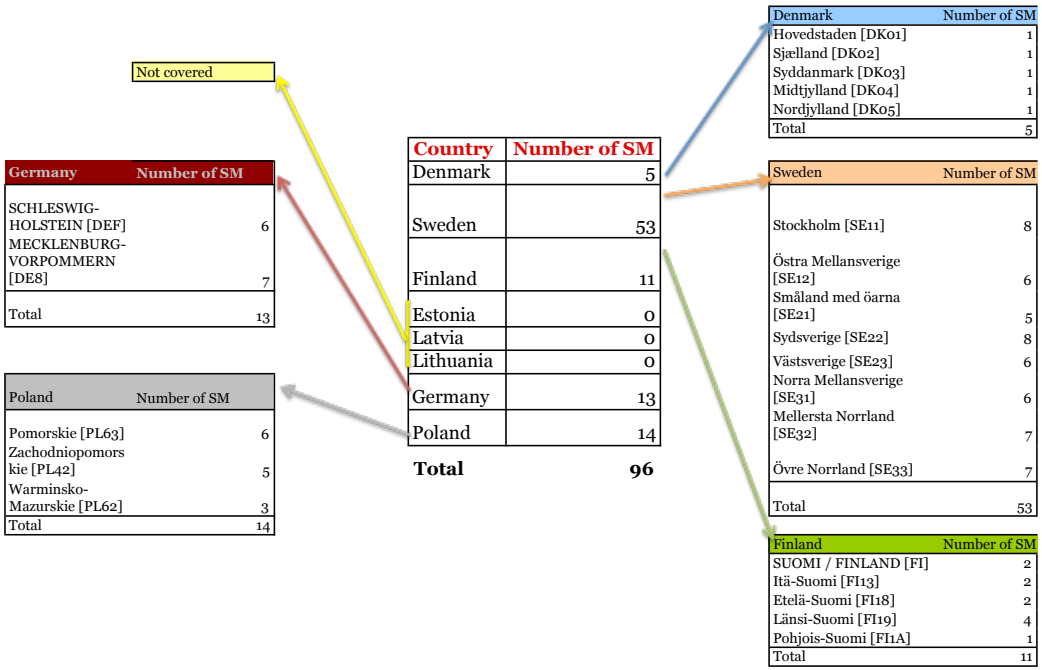
Figure 17: national research & innovation measures in BSR, thematic focus (n=306)



Source: ERAWATCH-TrendChart, February 2011. Calculations by Technopolis Group. Percentage calculated as frequencies (top 3) of the thematic priorities for each measure.

At the regional level, Figure 18 gives an overview of the 96 support measures contained in the RIM database as of mid-January 2011. There is some 'imbalance' in as over half of the 96 measures in the RIM database are from the Swedish regions.

Figure 18: Summary of support measures per Baltic Sea region



Source: RIM database, data extracted January 2011. Calculations by Technopolis Group

It is noticeable that there are relatively few measures in favour of research infrastructure or venture capita, this is probably due to such measures being managed by national agencies or financial institutions.

Figure 19: Policy priorities of regional innovation support measures in the BSR

RIM Policy categorisation priorities	Priority 1	Priority 2	Priority 3	TOTAL
	# of SM	# of SM	# of SM	
1. Governance & horizontal research and innovation policies	**19**	**10**	**6**	**35**
1.1.1. Strategy policy documents	0	1	1	2
1.2.1. Strategic Research policies	1	4	1	6
1.2.2. Innovation strategies	9	0	0	9
1.3.1. Cluster framework policies	4	2	4	10
1.3.2. Horizontal measures in support of financing	5	3	0	8
1.3.3 Other horizontal policies (ex. society-driven innovation)	0	0	0	0
2. Research and Technologies	**43**	**19**	**7**	**69**
2.1. Research organisations	1	0	0	1
2.1.1. Universities	1	0	0	1
2.1.2. Public Research Organisations	1	0	0	1
2.1.4. Research Infrastructures	3	0	0	3
2.2. Science-Industry linkages	0	0	1	1
2.2.1 Support infrastructure (transfer offices, training of support staff)	0	0	0	0
2.2.1. TT Support infrastructure	2	1	1	4
2.2.2. Knowledge Transfer	5	9	2	16
2.2.3. R&D cooperation	28	5	1	34
2.3.1. Direct support of business R&D (grants and loans)	2	4	2	8
3. Human Resources (education and skills)	**1**	**2**	**2**	**5**
3.1.1. Awareness creation and science education	0	0	1	1
3.1.3. Stimulation of PhDs	0	2	0	2
3.2.3. Mobility of researchers (e.g. brain-gain, transferability of rights)	0	0	1	1
3.3.1 Job training of researchers and other personnel involved in innovation	0	0	0	0
3.3.2. Recruitment of skilled personnel in enterprises	1	0	0	1
4. Enterprises	**31**	**24**	**8**	**63**
4.1.1. Support to sectoral innovation in manufacturing	4	4	1	9
4.1.2. Support to innovation in services	2	3	3	8
4.2. Support to entrepreneurial innovation	2	0	0	2
4.2.1. Support to innovation management and advisory services	7	2	1	10
4.2.2 Support to organisational innovation incl. e-business, new forms of work organisations, etc	0	0	0	0
4.2.3 Support to technology transfer between firms	0	8	1	9
4.3. Support to start-ups and access to finance	1	0	0	1
4.3.1. Support to innovative start ups incl Gazelles	14	3	2	19
4.3.2. Support risk capital	1	4	0	5

RIM Policy categorisation priorities	Priority 1	Priority 2	Priority 3	TOTAL
	# of SM	# of SM	# of SM	
5. Markets and innovation culture	**1**	**2**	**1**	**4**
5.1.1 Support to the creation of favourable innovation climate	0	0	0	0
5.1.2. Innovation prizes incl. design prizes	1	0	0	1
5.2.2. Support and guidelines on innovative Green Public Procurement (GPP)	0	1	0	1
5.3.1 Measures to raise awareness and provide general information on IPR	0	0	0	0
5.3.2 Consultancy and financial incentives to the use of IPR	0	1	0	1
5.3.3. Support to the innovative use of standards	0	0	1	1
Blanks	**1**	**39**	**72**	**112**
TOTAL	**96**	**96**	**96**	**288**

Source: RIM database, data extracted January 2011. Calculations by Technopolis Group

4. The contribution of the ERDF to Baltic Sea innovation policies

4.1 The ERDF contribution to national and regional innovation policies

The importance of the Structural Funds, from varies both budgetary and strategic orientation perspective, varies for the BSR innovation policies. In Member States with regions eligible for support under the Convergence Objective (Estonia, Germany, Latvia, Lithuania, Poland) the share of the ERDF in total government expenditure on RTDI is considerably higher than in the eligible regions (Denmark, Germany, Finland and Sweden) for the Regional Competitiveness and Employment objective. Equally, in the large Member States account must be made for 'multi-level governance': regional policy measures and national (operational) programmes.

The categorisation of Structural Fund expenditure by field of intervention (FOI) sheds light on the 'intensity' of RTDI expenditure in total ERDF allocations and on similarities and differences in strategic objectives across the BSR. The FOI codes are in line with the European Commission's preferred selection of codes for RTDI. Figure 20 provides an overview of the total RTDI allocations per BSR, the relative importance of RTDI allocations in the SF programmes and the share of three broad groupings of FOI: 'core RTDI', 'business innovation' and ICT diffusion.

Figure 20: Structural Fund allocations for RTDI 2007-12 in the Baltic Sea regions

Region	Total allocations	Core RTDI	Business innovation	ICT diffusion	Total RTDI	Share of RTDI/total ERDF
Hovedstaden	188,938,233.91	34,288,429	11,893,901	10,426,009	56,608,339.06	30.0%
Sjælland	107,000,987	18,333,680	6,567,928	5,153,224	30,054,832	28.1%
Syddanmark	140,598,023	27,428,631	8,093,307	8,122,024	43,643,962	31.0%
Midtjylland	140,468,311	25,527,004	8,854,988	7,749,954	42,131,946	30.0%
Nordjylland	66,644,017	12,111,074	4,201,175	3,676,901	19,989,150	30.0%
Mecklenburg-Vorpommern	2,068,226,222	264,262,196	75,098,050	12,099,588	351,459,834	17.0%
Schleswig-Holstein	613,191,592	103,186,524	14,862,184	15,318,563	133,367,271	21.7%
Eesti	2,278,735,017	358,412,674	77,009,760	49,123,105	484,545,538	21.3%
Latvija	3,072,730,695	419,153,858	335,850,767	100,518,398	855,523,023	27.8%
Lietuva	4,537,620,994	447,517,453	233,095,675	133,179,777	813,792,905	17.9%
Zachodniopomorskie	2,024,735,467	165,099,882	166,149,929	107,219,308	438,469,119	21.7%
Warmińsko-Mazurskie	2,357,860,786	175,304,707	187,822,699	119,561,232	482,688,638	20.5%
Pomorskie	2,309,878,383	231,704,153	238,946,222	134,279,636	604,930,011	26.2%
Itä-Suomi	551,238,293	112,843,171	60,082,057	56,800,480	229,725,709	41.7%
Etelä-Suomi	422,398,626	53,849,093	14,576,545	30,638,594	99,064,233	23.5%
Länsi-Suomi	302,772,813	49,585,128	23,073,135	20,377,496	93,035,759	30.7%
Pohjois-Suomi	393,076,901	87,400,007	43,594,878	38,351,417	169,346,303	43.1%
Stockholm	213,199,986	7,734,942	4,677,404	1,538,568	13,950,913	6.5%
Östra Mellansverige	215,485,942	25,224,055	16,025,190	4,774,927	46,024,172	21.4%

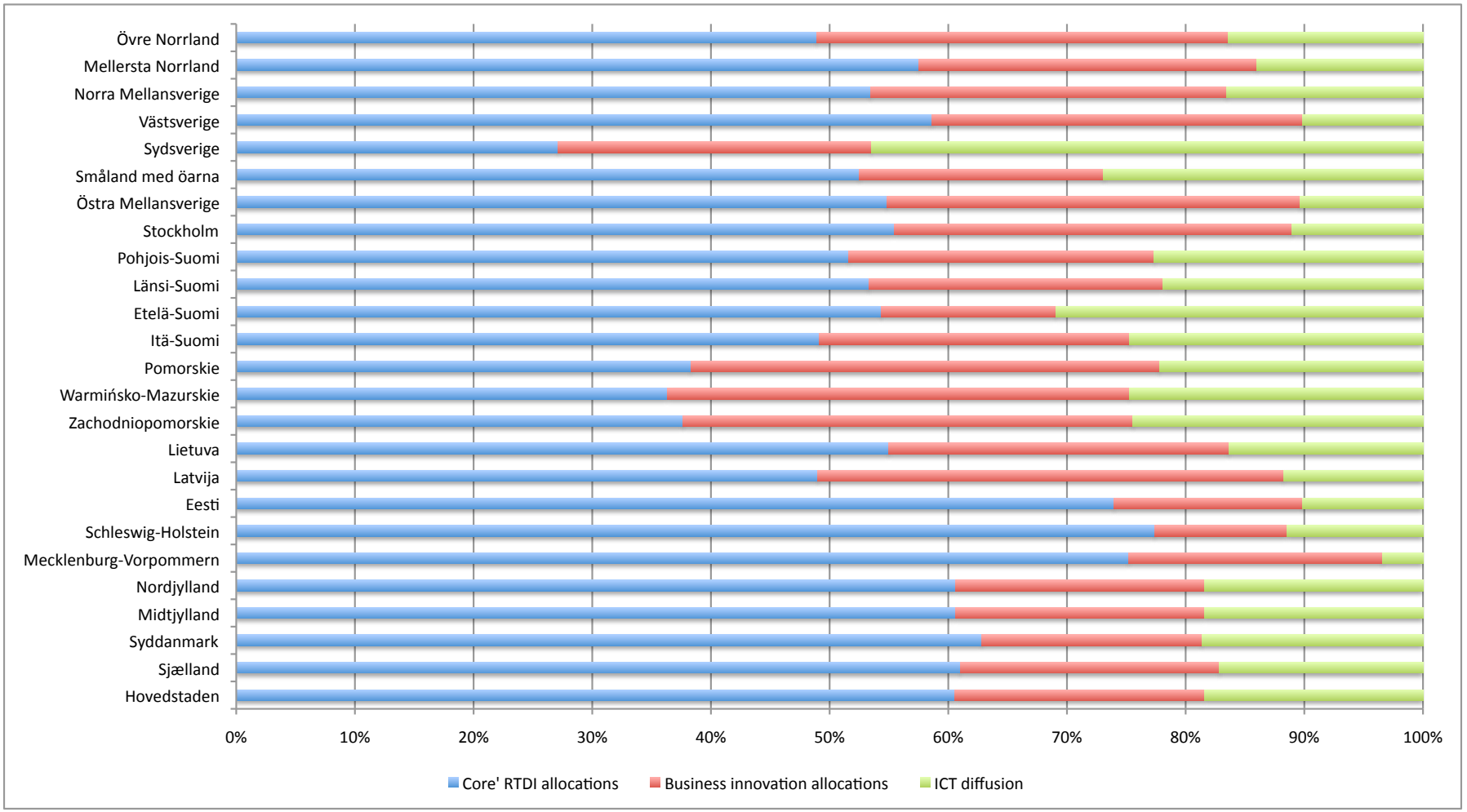
Region	Total allocations	Core RTDI	Business innovation	ICT diffusion	Total RTDI	Share of RTDI/total ERDF
Småland med öarna	134,800,093	15,673,243	6,145,700	8,032,864	29,851,808	22.1%
Sydsverige	208,683,487	8,459,894	8,232,646	14,486,515	31,179,056	14.9%
Västsverige	266,828,244	23,730,364	12,637,563	4,112,167	40,480,093	15.2%
Norra Mellansverige	287,532,136	59,949,581	33,626,907	18,542,611	112,119,100	39.0%
Mellersta Norrland	219,214,717.44	49,338,976 €	24,420,629 €	12,038,774 €	85,798,379.65	39.1%
Övre Norrland	303,616,026.54	66,429,157 €	47,096,311 €	22,303,997 €	135,829,464.79	44.7%

Source: Data from DG REGIO, calculations by Technopolis Group

Core RTDI: 01_R&TD activities in research centres; 02_R&TD infrastructure and centres of competence; 03_Technology transfer and improvement of cooperation networks; 04_Assistance to R&TD, particularly in SMEs; 74_Developing human potential in the field of research and innovation; **Business innovation**: 07_Investment in firms directly linked to research & innovation; 09_Other measures to stimulate research and innovation and entrepreneurship. **ICT diffusion**: 11_Information and communication technologies; 12_Information and communication technologies (TEN-ICT); 13_Services and applications for citizens (e-health, e-government); 14_Services and applications for SMEs (e-commerce, education, etc.); 15_Other measures for improving access to and efficient use of ICTs by SMEs

As can be seen from Figure 21, the share of SF RTDI allocations to the three broad types of RTDI intervention differs quite considerably across the 25 BSR. From a conceptual perspective, there would be an expectation that those countries that are least developed would invest a higher share of total RTDI expenditure in ICT diffusion (to encourage productivity catch up in enterprises and improved ICT skills in the general population through innovation in the form of embodied technology). This does not appear to be the case since the Convergence regions are spending a smaller share of their ERDF contribution on ICT diffusion.

Figure 21: Share of three broad types of RTDI allocation in total RTDI allocations per Baltic Sea region, 2007-13

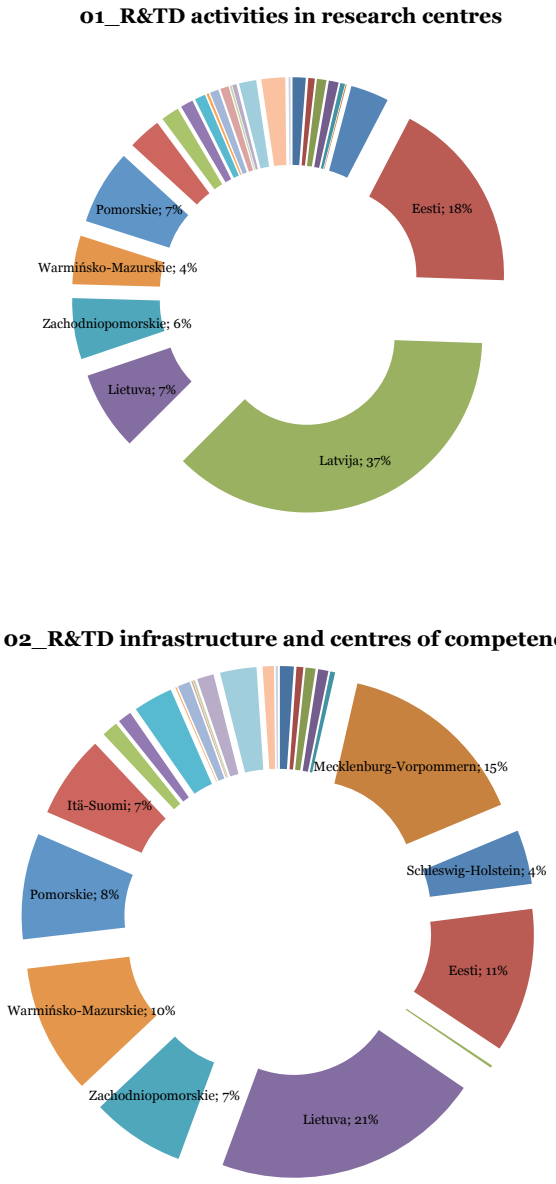


Source: Data from DG REGIO, calculations by Technopolis Group

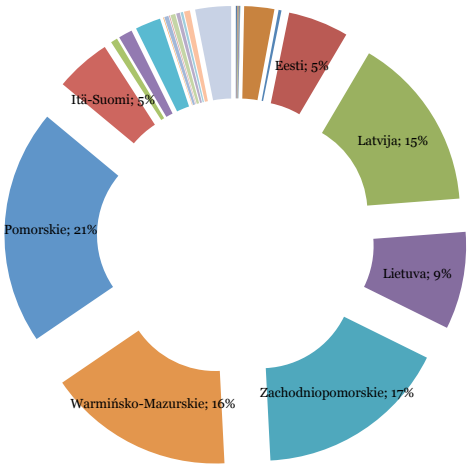
Considering the data on ERDF allocation at the level of specific field of intervention (FOI),

Figure 22 presents the share of each of the BSR for four FOI.

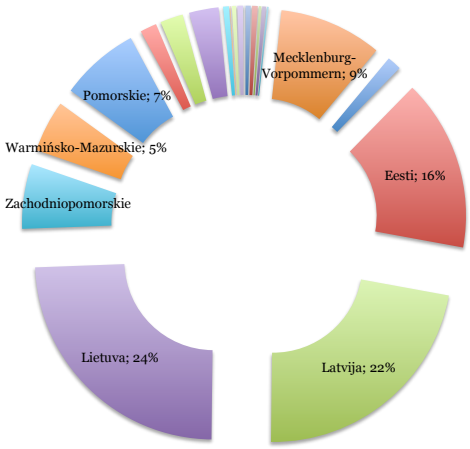
Figure 22: Comparison of share of SF allocations 2007-13 per region for four FOI



07_Investment in firms directly linked to research & innovation



74_Developing human potential in the field of research and innovation



Source: Data from DG REGIO, calculations by Technopolis Group

- Developing human potential in the field of research and innovation
  - A total of €491.8m allocated or 9.0% of total SF RTDI allocations in the BSR
  - Once again, the three Baltic States (62% of the BSR region total) dominate the total allocation of funds for this key intervention aimed at support initiatives like doctoral schools, industrial PhDs, training of specialised scientific and technological staff, etc. Other regions accounting for a large share of the total ERDF allocation are the three Polish regions and Meckelnburg-Vorpommern.
- RTDI activities in research centres
  - A total of €646m allocated or 11.9% of total SF RTDI allocations in the BSR;
  - Latvia (37%) and Estonia (18%) account for over half of the total BSR ERDF allocations for this FOI. No other single region comes close to the scale of expenditure invested by these two Member States. If Lithuania (7%) is added, then the three 'Baltic States' account for over 60% of SF expenditure targeted at research centres

- R&D infrastructure and centres of competence
  - A total of €736m allocated or 13.5% of total SF RTDI allocations in the BSR
  - Lithuania, with a significant investment in 'Technology Valleys' stands out in this FOI accounting for one fifth of planned expenditure; followed by Mecklenburg-Vorpommern, Estonia and Warmińsko-Mazurskie. Again these four regions in total account for over half (57%) of total planned SF allocations.
- Investment in firms directly linked to innovation
  - A total of €957m allocated or 17.6% of total SF RTDI allocations in the BSR
  - In this case, the Polish regions Pomorskie (21%), Zachodniopomorskie (17%) and Warmińsko-Mazurskie (16%) allocated the lion's share of the SF support for business innovation investments, followed by Latvia (15%). In total these four regions account for close to 70% of the total funding for this FOI.
- Developing human potential in the field of research and innovation
  - A total of €491.8m allocated or 9.0% of total SF RTDI allocations in the BSR
  - Once again, the three Baltic States (62% of the BSR region total) dominate the total allocation of funds for this key intervention aimed at support initiatives like doctoral schools, industrial PhDs, training of specialised scientific and technological staff, etc. Other regions accounting for a large share of the total ERDF allocation are the three Polish regions and Meckelnburg-Vorpommern.

While the relative concentration of investment in R&D infrastructure may enable the countries/regions concerned to invest in much needed development or upgrading, it does not lead directly or in the short-term to improved scientific and technological performance and specialisation (and even less directly to economic growth). This depends rather on the strategies and research management capacities of the centres receiving the investment.

Equally, the regional level focus of the German and Polish regions ERDF programmes on business related investments appears to reflect in the first case the existence of complementary national programmes and research centres; while in the Polish case the business R&D potential is very limited and funding seems to be focused on 'embodied technology transfer' to raise productivity, etc.

While the broad data on allocations does give an insight into the focus of funding efforts, more or less on the science push or business demand pull sides of the innovation system, a more in depth analysis of the actual expenditure through specific programmes is required to anticipate the potential final impacts on BSR innovation systems.

4.2 Assessing the contribution of the ERDF to smart specialisation strategies in the Baltic Sea region

4.2.1 The relative ERDF contribution to national and regional innovation policies

The above analysis of ERDF allocation in favour of RTDI highlights that the ERDF contribution is significantly concentrated in 4-5 BSR regions. This absolute concentration of funds could lead to a significant 'catching-up' in terms of R&D infrastructure and human resources for S&T. This is notably the case in the three Baltic States, Mecklenburg-Vorpommern and to some extent the three Polish regions.

However, it is important to put the ERDF contribution into the perspective of it's importance with respect to overall national/regional budgets. Figure 23 provides data for the BSR regions on Structural Fund expenditure compared to business, government and higher education (BERD, GOVERD HERD) expenditure on R&D.

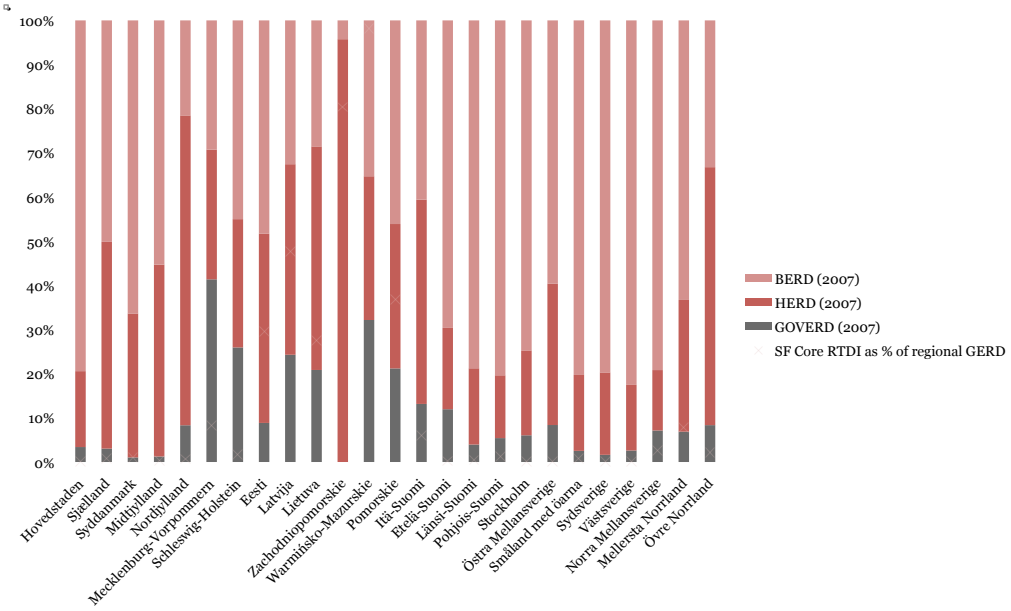
Figure 23: analysis of relative importance of ERDF in regional innovation systems

Region	Total RTDI in SF (§)	RTDI % total SF	SF RTDI % per region	SF RTDI per year	SF Core RTDI per year	GERD by region 2007 (€m)*	GOVERD (2007)	HERD (2007)	BERD (2007)	SF RTDI as % of regional GERD	SF RTDI as % of regional GOVERD+ HERD	SF Core RTDI as % of regional GERD	Total R&D personnel (FTE) 2007*	SF RTDI per R&D personnel per year
Hovedstaden	€ 56,608,339	30.0%	1.0%	€ 8,086,906	€ 4,898,347	€ 4,305.571	€ 145.0	€ 735.7	€ 3,400.1	0.19%	0.92%	0.11%	31326	€ 258
Sjælland	€ 30,054,832	28.1%	0.6%	€ 4,293,547	€ 2,619,097	€ 296.548	€ 9.0	€ 138.8	€ 148.7	1.45%	2.90%	0.88%	2340	€ 1,835
Syddanmark	€ 43,643,962	31.0%	0.8%	€ 6,234,852	€ 3,918,376	€ 385.025	€ 4.0	€ 125.5	€ 255.6	1.62%	4.81%	1.02%	3628	€ 1,719
Midtjylland	€ 42,131,946	30.0%	0.8%	€ 6,018,849	€ 3,646,715	€ 852.790	€ 10.6	€ 369.0	€ 470.0	0.71%	1.59%	0.43%	7409	€ 812
Nordjylland	€ 19,989,150	30.0%	0.4%	€ 2,855,593	€ 1,730,153	€ 258.382	€ 21.5	€ 181.3	€ 55.6	1.11%	1.41%	0.67%	2190	€ 1,304
Mecklenburg-Vo	€ 351,459,834	17.0%	**6.5%**	€ 50,208,548	€ 37,751,742	€ 454.483	€ 188.0	€ 133.5	€ 133.0	**11.05%**	**15.62%**	**8.31%**	4633	**€ 10,837**
Schleswig-Holst	€ 133,367,271	21.7%	2.4%	€ 19,052,467	€ 14,740,932	€ 848.841	€ 220.2	€ 246.6	€ 382.0	2.24%	4.08%	1.74%	8022	€ 2,375
Eesti	€ 484,545,538	21.3%	**8.9%**	€ 69,220,791	€ 51,201,811	€ 173.648	€ 15.0	€ 72.6	€ 81.9	**39.86%**	**79.02%**	**29.49%**	5002	**€ 13,839**
Latvija	€ 855,523,023	27.8%	**15.7%**	€ 122,217,575	€ 59,879,123	€ 125.596	€ 30.5	€ 54.2	€ 40.9	**97.31%**	**144.29%**	**47.68%**	6378	**€ 19,162**
Lietuva	€ 813,792,905	17.9%	**14.9%**	€ 116,256,129	€ 63,931,065	€ 232.594	€ 48.5	€ 117.8	€ 66.4	**49.98%**	**69.91%**	**27.49%**	12656	€ 9,186
Zachodniopomo	€ 438,469,119	21.7%	**8.1%**	€ 62,638,446	€ 23,585,697	€ 29.334	€ -	€ 27.0	€ 1.2	**213.54%**	**231.99%**	**80.40%**	1952	**€ 32,089**
Warmińsko-Ma	€ 482,688,638	20.5%	**8.9%**	€ 68,955,520	€ 25,043,530	€ 25.534	€ 8.2	€ 8.3	€ 9.0	**270.05%**	**417.91%**	**98.08%**	1182	**€ 58,338**
Pomorskie	€ 604,930,011	26.2%	**11.1%**	€ 86,418,573	€ 33,100,593	€ 90.087	€ 18.8	€ 29.0	€ 40.9	**95.93%**	**180.79%**	**36.74%**	4212	**€ 20,517**
Itä-Suomi	€ 229,725,709	41.7%	4.2%	€ 32,817,958	€ 16,120,453	€ 269.201	€ 35.4	€ 124.5	€ 109.3	**12.19%**	**20.52%**	**5.99%**	3590	€ 9,141
Etelä-Suomi	€ 99,064,233	23.5%	1.8%	€ 14,152,033	€ 7,692,728	€ 3,469.618	€ 414.8	€ 638.8	€ 2,416.0	0.41%	1.34%	0.22%	32558	€ 435
Länsi-Suomi	€ 93,035,759	30.7%	1.7%	€ 13,290,823	€ 7,083,590	€ 1,491.669	€ 59.0	€ 257.6	€ 1,175.1	0.89%	4.20%	0.47%	12173	€ 1,092
Pohjois-Suomi	€ 169,346,303	43.1%	3.1%	€ 24,192,329	€ 12,485,715	€ 1,010.429	€ 54.7	€ 143.7	€ 812.0	2.39%	12.19%	1.24%	7892	€ 3,065
Stockholm	€ 13,950,913	6.5%	0.3%	€ 1,992,988	€ 1,104,992	€ 3,933.579	€ 237.7	€ 755.3	€ 2,936.6	0.05%	0.20%	0.03%	25239	€ 79
Östra Mellansve	€ 46,024,172	21.4%	0.8%	€ 6,574,882	€ 3,603,436	€ 1,814.143	€ 151.9	€ 580.9	€ 1,080.7	0.36%	0.90%	0.20%	11810	€ 557
Småland med ö	€ 29,851,808	22.1%	0.5%	€ 4,264,544	€ 2,239,035	€ 297.510	€ 7.5	€ 51.1	€ 238.7	1.43%	7.28%	0.75%	2299	€ 1,855
Sydsverige	€ 31,179,056	14.9%	0.6%	€ 4,454,151	€ 1,208,556	€ 2,143.112	€ 34.8	€ 399.6	€ 1,707.3	0.21%	1.03%	0.06%	12150	€ 367
Västsverige	€ 40,480,093	15.2%	0.7%	€ 5,782,870	€ 3,390,052	€ 2,409.163	€ 75.1	€ 427.0	€ 2,373.9	0.24%	1.15%	0.14%	16166	€ 358
Norra Mellansve	€ 112,119,100	39.0%	2.1%	€ 16,017,014	€ 8,564,226	€ 335.023	€ 23.9	€ 45.8	€ 265.1	4.78%	22.98%	2.56%	2752	€ 5,820
Mellersta Norrla	€ 85,798,380	39.1%	1.6%	€ 12,256,911	€ 7,048,425	€ 90.187	€ 6.2	€ 26.9	€ 57.1	**13.59%**	**37.03%**	**7.82%**	722	**€ 16,976**
Övre Norrland	€ 135,829,465	44.7%	2.5%	€ 19,404,209	€ 9,489,880	€ 438.482	€ 36.6	€ 256.1	€ 145.7	4.43%	6.63%	2.16%	3196	€ 6,071
Total BSR	€ 5,443,609,559	23.2%	100.0%	€ 777,658,508	€ 406,078,268	€ 25,781	€ 1,856.9	€ 5,946.6	€ 18,402.8	3.02%	9.97%	1.58%	221477	€ 3,511
§ Source: data from DG REGIO, Structural Fund allocations for the 2007-13 period, calculations Technopolis Group														
*** Source = Eurostat, data extracted 1 April 2011**														

Figure 24 presents graphically the BERD, HERD and GOVERD data compared to Structural Fund expenditure on the 'core RTDI' category. This is not comparing exactly 'like-for-like' but it represents a proxy for the importance of Structural Fund RTDI expenditure compared to the 'regional innovation systems' current capacity.

As can be seen in most Nordic regions the contribution is minor but in the Baltic States and Poland the share climbs rapidly toward 50% and even close to 100% in one extreme case.

Figure 24:estimated contribution of Structural Funds to regional R&D funding



Source: Eurostat for R&D expenditure, DG REGIO for ERDF funding

Such a relatively important share of ERDF funding in the 'innovation systems' suggests that there is an issue about the capacity for 'absorption' of the funding in the Baltic States and Poland. In particular, there are only a limited number of 'operators' in these national and regional systems able to develop projects and the capacities and capabilities of ministries and agencies are often stretched on the policy design and management side. Indeed, spending data from annual implementation reports, evaluation evidence and interviewee feedbacks suggests that the systems are unable to cope in a 'sophisticated' enough way in order to focus and prioritise funding, notably on research infrastructure.

Figure 25: per capita contribution of SF to regional RTDI compared to per capita gross expenditure on RTDI

Region	GERD per capita (2007)	SF RTDI per capita annual average 2007-13
Hovedstaden	2631	4.9
Stockholm	2051	1.0
Sydsverige	1604	3.3
Pohjois-Suomi	1588	**37.9**
Etelä-Suomi	1327	5.4
Västsverige	1319	3.2
Östra Mellansverige	1190	4.3
Länsi-Suomi	1114	9.9
Övre Norrland	861	**38.1**
Midtjylland	695	4.9
Nordjylland	448	4.9

Region	GERD per capita (2007)	SF RTDI per capita annual average 2007-13
Itä-Suomi	407	**49.8**
Norra Mellansverige	406	**19.4**
Småland med öarna	371	5.3
Sjælland	363	5.2
Syddanmark	324	5.2
Schleswig-Holstein	300	6.7
Mecklenburg-Vorpommern	268	**29.8**
Mellersta Norrland	243	**33.0**
Eesti	129	**51.6**
Lithuania	69	**34.4**
Latvia	55	**53.7**
Pomorskie	41	**39.2**
Warminsko-Mazurskie	18	**48.3**
Zachodniopomorskie	17	**37.0**

Source: Eurostat and DG REGIO (ERDF data), calculations Technopolis Group

At the same time, as illustrated in Figure 25, even with the volume of ERDF funds allocated to the BSR 'convergence regions', the Structural Fund intervention will at best marginally 'close the 'innovation gap' between the Nordic 'rim' and the 'south-Eastern coast' of the BSR during 2007-13.

4.2.2 The ERDF as a complement to national and European research infrastructure strategies

The development of research infrastructure and capacities in fields where a country or region has a specific scientific, technological or business specialisation or in areas of research related to societal needs is one element of a broader response to achieving what is now termed a 'smart specialisation' strategy. At European level, the ESFRI Roadmap identifies new Research Infrastructure (RI) of pan-European interest corresponding to the long-term needs of the European research communities, covering all scientific areas, regardless of possible location. Aside from the approval of 44 ESFRI centres, the aim is to encourage national and regional stakeholders to set-up parts of distributed infrastructures or Regional Partner Facilities partner centres. In this context, as can be seen from Figure 26, national research infrastructure plans exist in Denmark, Estonia, Finland and Sweden.

Figure 26 : BSR Research Infrastructure plans and ERDF support

	National Research Infrastructure Strategy	Large Research Infrastructures (ESFRI)	National Public funding reserved for new RIs	Importance of ERDF co-finance for research infrastructures
Denmark	Future research infrastructures – needs survey and strategy proposa (2005)l	Yes	Yes	• Minor, complement at regional level to national initiatives
Estonia	Estonian Research Infrastructures Roadmap (2010)	No	Yes	• Major. 2007-13 Research Infrastructure measures.
Finland	National-Level Research Infrastructures: Present State and Roadmap (2009	Yes	Yes	• Minor, complement at regional level to national initiatives

	National Research Infrastructure Strategy	Large Research Infrastructures (ESFRI)	National Public funding reserved for new RIs	Importance of ERDF co-finance for research infrastructures
Germany	No	Yes	Yes	• Minor, complement at regional level to national initiatives.
Latvia	No	No	No	• Major. SF co-funded programmes for development and upgrading of RI.
Lithuania	Being prepared	None	Yes	• Major. Valleys and Joint-Research Programmes (2007-13).
Poland	No	Yes	Yes	• Major, at national level about a €1b from OP Innovative Economy invested in RI.
Sweden	Swedish Research Council's guide to Infrastructure (2007)	Yes	Yes	• Minor, complement at regional level to national initiatives

Source: ESFRI roadmap implementation report 2009. EW Country Reports 2010.

At national and regional levels, in Germany and Poland there are no RI road maps but specific investments at public or higher education research are supported through national funds and/or regional (ERDF co-financed) programmes.

The Structural Funds have contributed to a renewal of Estonia's research infrastructure since 2004-2006 (a first limited programme with about €14m allocated) but a significant expansion of funding has occurred during 2007-13 with both the continuation of the Centres of Excellence Programme, seven new centres were approved (including some, but not all, of the former 10 centres) with funding for seven years €45m; and the R&D Infrastructure development Programme with funding for modernisation of higher education research buildings and equipment (€101m). Although Estonia has a national research infrastructure road map, it was developed and adopted after the main decisions on the use of the 2007-13 Structural Fund support for research infrastructure. The plan seeks to outline both the main Estonian research infrastructures and Estonia's contribution to ESFRI. The plan does not set out estimated investment needs for the research infrastructures identified.

In neighbouring, Latvia and Lithuania no such road map has yet been developed. In Latvia, where a relatively small amount of funds were earmarked under the research infrastructure FOI code, investment is foreseen nevertheless under the research centres FOI code to improve research infrastructure in the main research centres and support the creation of six competence centres and the implementation of their research projects in the following fields: ICT, wood processing, chemistry, electronics, machine building, and biotechnology.

In Lithuania, the Business-Research Valleys and Joint-Research Programmes (co-funded by the ERDF during 2007-13) serve to prioritise to some extent research infrastructure plans. Investments in research infrastructure or new R&D centres in Lithuania are linked to the priority technology fields (see case below for more details).

Similarly, in the three Polish regions, interviewees noted that "the ERDF is a key if not the only source of funding" for research infrastructures. However, interviewees suggested that investments in public R&D infrastructure were often made with considering the existing infrastructure in other regions. This raises the issue of difficulties of finding clients to use the infrastructure in the future and hence a risk of non-sustainability of the ERDF investment.

In the two German regions, investment in research infrastructure accounts for between one quarter (Schleswig-Holstein) and one third (M-P) of Structural Fund

allocations for 2007-13. The ERDF supports a range of projects and infrastructures (e.g. the maritime cluster). Interviewees noted that the regional universities have benefited from investment in competence centres, which aimed to better link science and industry and market the results.

In Denmark, Finland and Sweden, ERDF funding is largely complementary to the main national funding streams. This is clearly the case for research infrastructures and centre, with the major infrastructure and centres mentioned in national road-maps being funded through national funding programmes. EU funds, including FP7, EIB and the ERDF, therefore play a role as catalysts or complements to national priorities. Sweden has a long tradition in building, maintaining and operation research infrastructures and has one of the most advanced and developed infrastructures in several fields. Investment in research infrastructure is a key area of focus of the Swedish research and innovation funding bodies. However, there appears to be clear division of labour with the ERDF focusing more on 'soft' interventions such as clustering, etc. as during the 2007-13 period only around 10% of Structural Fund RTDI appropriations (€48m) are allocated to R&TD infrastructure and centres of competence. In Denmark, the share of funding allocated to research infrastructure is a bit higher, at about 14% of ERDF RTDI spend but in absolute terms this amounts only to €26m. The ERDF programme for 2007-13 focuses more on business innovation foreseeing for instance establishing centres of competence to strengthen regional innovation capacity within specific industries or technologies. Similarly, in Finland, ERDF funding for research infrastructure accounts for about 13% (or €88m) of total ERDF allocations to RTDI. Nevertheless, a key focus area of the ERDF programme is the promotion of competence and innovation, and the strengthening of the related structures and centres of expertise. Around €92m was earmarked annually for these objectives from the ERDF and central government funds.

According to interviewees, the lessons of 'early programming' in convergence regions (such as Mecklenburg-Vorpommern) suggest that a 'first class' infrastructure can be built with ERDF support but that there is a need to focus earlier on building up competitive R&D activities and teams. In particular, there is a need to align infrastructure investments closer with industrial demand driven needs and develop 'open access' operating principles. Case 4 provides an example of how attempts to build research infrastructure linked to business R&D and innovation needs can be complex in countries where there is limited prior experience of such co-operation (particularly raising issues around 'business models' and 'open access' rights).

Case 4 Lithuania – Integrated centres of science, studies and business ("Valleys")

In November 2008, the Government of the Republic of Lithuania adopted a resolution on the establishment of integrated centres of science, studies and business ("Valleys"). The Ministry of Education and Science and the Ministry of Economy allocated €400m for the implementation of the Valleys programme with funding from the EU Structural Funds programme for 2007-2013.

The programme is implemented through three components: valleys, joint research programmes (JRPs) and individual projects. Five valleys, concentrating on the potential of scientific research, studies and knowledge intensive business in specific geographical areas, and four JRP with a focus on selected sectors have been launched. Moreover, there are 20 R&D infrastructure development projects under the four JRPs within five Valleys, which include a mix of open access research centres, studies centres, science and technology parks, business incubators, etc.

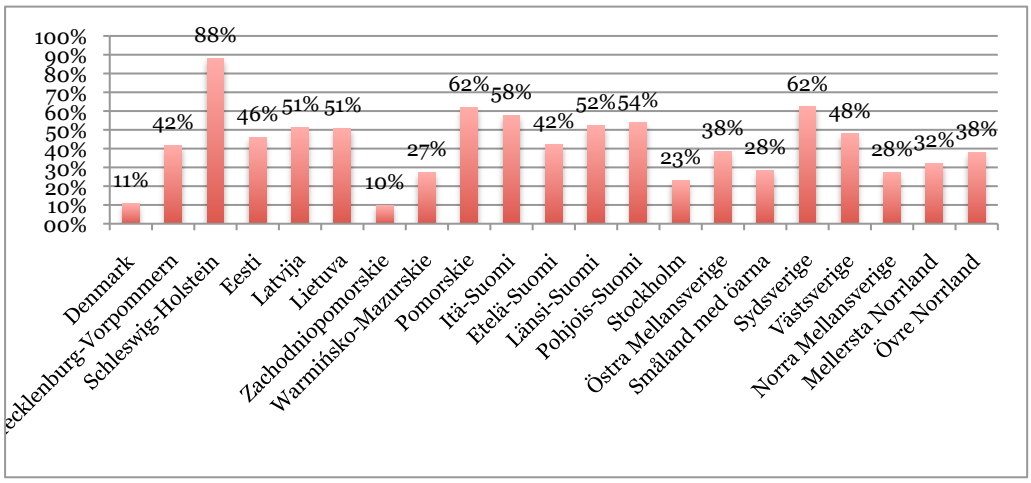
At the moment there are a number of key issues that still need to be resolved. Despite the shared will for cooperation among the HEIs, PRIs, local governments and business, in most cases there is still a natural tendency to satisfy the needs and interests of specific HEIs or PRIs and not to consider the wider innovation system. There is also a lack of cooperation experience of Lithuanian science and research institutions, local governments and businesses, as well as the absence or limited participation of foreign companies. Finally, the programme does not contain elements of cooperation with partners from outside Lithuania. However, it is acknowledged that partners should look outside Lithuania in the future and linkages with BSR initiatives exist.

Evidence on impact of ERDF funding on BSR innovation performance

According to the majority of interviewees and documentary evidence reviewed, it is still too early to observe a significant impact of the Structural Funds in Estonia, Latvia, Lithuania and the Polish regions. In Latvia and Lithuania, interviewees commented that 'implementation is rather slow' while in Poland the current efforts are concentrated on consumption of funds. In order to cross-check this information, an analysis of the funding committed was undertaken for ERDF funding programmes on the basis of the Annual Implementation Reports (AIR) of the Member States to the European Commission for the period 2007-2009. The ratio of the RTDI commitments for the period 2007-2009[11] and the total allocation for the period 2007-2013 provide an indication of the financial absorption capacity of the BSR regions.

From the data, it is observable that there are significant disparities in the absorption capacity of the RTDI measures co-financed by ERDF per region[12]. Results range from a very low value for Zachodniopomorskie (close to 10%) to the extremely high percentage of absorption found in Schleswig-Holstein (around 90%). On average, the two German regions are the best performing regions in terms of RTDI already committed. The three Baltic States and all Danish regions present a satisfactory rate (around 50%) of absorption capacity. A less satisfactory outcome is found in Poland, notably in Zachodniopomorskie and Warmińsko-Mazurskie.

Figure 27: Ratio ERDF allocations 2007-2012 and rate of expenditure



Source: Annual Implementation Reports 2007, 2008, 2009. Calculations: Technopolis Group.

The conclusion it is still often too early to draw firm conclusions on effects of the 2007-13 period are corroborated by the 2010 policy papers on innovation produced by DG REGIO's expert evaluation network (delivering policy analysis on the performance of cohesion policy 2007-2013). The policy papers for the BSR countries found that there is no substantial evidence of impact on innovation peformance (Lithuania)[13],

[11] The codes use for this calculation are the same codes previously used in figure 18 on Structural Fund allocations for RTDI 2007-12 in the Baltic Sea regions

12 The AIR data is not fully complete and comparable with the data on allocations nor does it give a true indication of actual expenditure levels which may be more telling than commitments for certain major projects (e.g. research infrastructure).

[13] See also the presentation Cohesion Policy Support to Innovation in Lithuania: Lessons Learnt for Evaluation, available at: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/doc/14042011/3c_paliokaite_innovation_lt_regio.ppt

implementation problems had arisen due to the absence of co-financing (Latvia), while in Poland, the overall impact of investment in science and technology parks was limited while the best results were reported for projects strengthening co-operation between the research sector and businesses. The Latvia report even argued that as "*Many activities (of the 2004-6 period) had a late rush of implementation in 2007 and 2008 (e.g. the ERDF venture capital programme), so meaningful evidence on performance cannot be expected for some time*". A similar conclusion seems to have been reached by an initial assessment of the effects of enterprise measures in Estonia, which found little evidence of significant impact by 2010 (see Case 5).

Case 5 : Assessing the impact of the ERDF on enterprise and innovation in Estonia

The Estonian State Audit Office (SAO) undertook in 2009-10 a study into the 'Impact of the State Enterprise Policy on Estonian Competitiveness'. The study involved an analysis of 57 different measures implemented by Enterprise Estonia and KredEx during the period 2004-9 and which disbursed 7.4 billion crowns (approximately €474m), divided into seven groups for the purpose of analysis. For each group, the SAO agreed with the Ministry of Economic Affairs and the two agencies the expected impact the support should have had on the behaviour and the economic trends of the enterprise (for example, export growth).

A questionnaire was sent to a sample of 4,262 enterprises, out of which 1,881 enterprises responded: 954 enterprises had received support, 180 enterprises had applied for but did not receive support, 747 enterprises, which had never applied for support, were used as a control group. In the questionnaire, supported enterprises were asked to assess the impact of the support received on their economic activity. The SAO compared the survey responses with the real economic indices of the enterprises who had received support, and of the control group, the indices in the fields of activities and the economy of Estonia as a whole.

Based on the questionnaire and the additional desk research and interviews, the SAO came to the conclusion that the support measures had not yet "improved the competitiveness of the audited fields of activity". In particular, it argued that the low productivity and the limited export capacity of Estonian enterprises have not significantly increased as a result of enterprise policy measures. The main reason put forward by the SAO for this limited impact "*was a rigid, untargeted and dispersed system of supports which tries to deal at the same time with many problems of entrepreneurship and very often does not consider the actual needs of enterprises*".

Source: Impact of state's enterprise support on the competitiveness of the Estonian economy. Available at: http://www.riigikontroll.ee

More positively, a mid-term review of the Estonian Competence Centres programme (five business-research consortia working in a number of targeted technology fields and largely funded by the ERDF)[14] identified early signs of impact. Positive effects included that three of the centres had managed to increase significantly their industrial income above expectations, thus a significant success. The CCs also served to focus research attention and effort on specific areas of technology and thereby to increase the number of PhD students working in the given areas. There was an important and useful knock-on effect to MSc and BSc education, providing human resources to strengthen both the university and the industrial systems.

Equally, in Poland, and while not specific to the three Polish BSR regions, an evaluation of the Polish innovation vouchers programme (2008-10), launched by the Polish Agency for Enterprise Development (PAED) as a pilot project in 2008 found that approx. 41%) continued cooperation with scientific units after completion of the service financed under the Innovation Voucher[15]. Indeed, 58% of beneficiaries considered there had been a positive impact from their participation in the programme Both these examples, tend to suggest that correctly designed policy

[14] Available at: http://www.mkm.ee/failid/IS12_competence_center_programme_2008.pdf

[15] See: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/doc/14042011/3b_innovation_voucher_paed.docx

measures can foster increased business-research co-operation, a weakness of the innovation systems in the south-east rim of the BSR.

Moreover, even in the more advanced Nordic countries, where policies have been in place for several decades, assessing the impact of innovation policies is complex. In Finland, see Case 6, a 2009 evaluation of the Finnish innovation system included a specific analysis of regional support for innovation and investment and concluded that the effects of public intervention were not unambiguously positive.

Case 6: Systems evaluation of the Finnish Innovation System

In 2009, a team of international and Finnish experts conducted an evaluation of the Finnish innovation system. The study analysed six cross-cutting themes: broad-based innovation policy; demand- and user-driven innovation; globalisation of business activities; growth entrepreneurship and finance; geography of innovative activity; education, research and the economy. The evaluation involved more than 10 supporting studies, over a 100 interview/hearings, 2000 survey responses, qualitative and quantitative hearings.

In overall terms, the evaluation concluded that while Finland currently has one of the best national innovation systems worldwide; even that may not be enough in an era, where the global operating environment is rapidly evolving and the whole concept of a national innovation system has been questioned. Companies have been the primary target of innovation policy but, as they become increasingly footloose and geographically dispersed, the focus may have to shift to nurturing and attracting creative individuals.

The study on the 'geography of innovative activity' is of most relevance for learning from a Structural Fund perspective. Based on a 'triangulation of methods' (analysis of patterns of regional support for innovation and investment, including ERDF, regional productivity trends including 'new entrants', and a counter-factual analysis using a panel of enterprises), the study argued that the "unspoken regional bias in national innovation policy (including the use of Structural Funds to support firms in 'disadvantaged regions') is contributing to the misallocation of resources that drives the recent divergence in competitiveness between Finnish regions". The authors conclude that running innovation policy and competition policy with a regional agenda may come at a high cost in terms of foregone growth at both the local and the national level. Hence, innovation policy should celebrate firms that endeavour to move the current technology frontier forward no matter where they are actually located, even when they happen to locate in 'advantaged' regions.

Sourc: Veugelers R. et al (2009) Report of the evaluation panel of the Finnish National Innovation System. Available at : www.evaluation.fi

Nevertheless, although the relative contribution of the Structural Funds is small compared to national funds in the Nordic countries the ERDF funding is often used to leverage additional funding from public-private partnerships. Nordic interviewees, for this study, stressed that the ERDF was a 'ground-breaker', 'fundamental and necessary in early phase of new developments'. An example is the Robotdalen project.

Case 7: Robotdalen (Sweden)

In 2003, Robotdalen was set up as an initiative with the vision to take the lead in research, development and manufacture of industrial field and medical robotics. Activities are solely following from the fact that Robotdalen is a robotics initiative enabling commercial success of new ideas and research within robotics and automation, focusing mainly on solutions for the industry, heavy vehicles and health care sector.

Robotdalen is funded by VINNOVA, the European Regional Development Fund, the European Social Fund and a number of public institutions, universities and companies in Central Sweden. Funding from the European structural funds amount to 25% of the funding for some years, thus making it significant in leveraging the development of the project. Matching of European and national agency funding with local funding seems to have built in necessary local commitment and engagement, which serves to warrant that individual initiatives are well grounded in local reality.

So far 17 companies and 17 products have been achieved. There is strong political support by counties and the initiative has been, overall, effective in strengthening awareness of Robotdalen in Sweden. Moreover, the cluster project has been successful in mobilising stakeholders from the entire region, including major companies such as ABB, Atlas Copco and Volvo. One of the keys to its success has been an environment in which actors in the fields of advanced research;

higher education and industry have collaborated, with encouragement of innovations and new enterprises.

In conclusion, it appears too early to draw firm conclusions on the impact of ERDF support to the BSR regions in terms of 'levelling the playing field' of R&D infrastructure and capabilities or in terms of generating major shifts in business innovation performance. However, the experience of the Nordic countries, notably Sweden and Finland, does underline that the ERDF has played a role in fostering strong 'triple helix' partnerships supporting the renewal of existing, or newly emerging, industrial sectors can be beneficial. The evidence on higher education and public research infrastructure investments in the 'new Member States' of the BSR suggests that not enough has been done to transfer know-how and experience from the more advanced regions in the design and management of such facilities. Nor is there any perceptible effort to pool research resources or to do a prior 'reality check' on whether it could be more cost effective to buy time for regional researchers on existing research infrastructure/equipment in neighbouring regions.

5. Mapping of national and regional organisations and stakeholders

Following the assessment of innovation strategies and policies around the BSR, this section focuses on identifying who is behind the design and delivery of these in the EU Member States in the BSR. In order to provide the most accurate and sensible information on both, who is doing what and where within the Baltic Sea Region, the work has been divided in two major phases.

5.1 An institutionally 'rich' macro-region

In a first instance, the organisational mapping exercise has been carried out by a search of the RIM[16] and ERAWATCH databases. Thanks to these monitoring platforms, an up-to-date list of all major institutional policy actors and intermediaries engaged in the development, implementation and review of research and innovation policies at national and regional level was obtained. During this stage, the identified number of organisation (198) was clearly only preliminary and needed to be further refined and developed. This was especially true for the case of the Baltic regions where the list of organisations was not reflecting a minimum set of key actors, notably of research centres, clusters and research infrastructures.

Therefore, the 198 identified organisations broken down by country and region were then provided to national experts who were asked to check and complete the identification of the key players in charge of delivering innovation and research activities in their specific countries and regions. National experts completed the list based on desk research as well as with additional input obtained during the interviews with key stakeholders in the countries and regions across the BSR. Regional government departments responsible for STI or industrial policy; regional development or innovation agencies, science and technology parks or centres, key cluster or organisations and venture/seed capital funds were added during this phase of the work.

Finally, approximately 500 organisations involved in innovation and research activities in the BSR were identified. National experts completed a minimum information per organisation such as the mission statement, main activities, website, type of organisation and involvement in BSR co-operation. This information has been used for the subsequently analysis.

As can be seen in Figure 28, the organisational mapping has identified a total of 490 key organisations. The number of organisations listed varies from 32 organisations in Latvia to 130 in Sweden, with an average of 60 organisations per country. The disparities found at national level, are less noticeable when the list is broken down regionally. Except for the three Baltic States (Estonia, Lithuania and Latvia) where there is no breakdown due to the fact that regional level is not essential from a 'governance' perspective, experts have, on average, detected 16 organisations playing a key role in developing and implementing innovation policies per region. An exhaustive list of organisations per country and regions is provided in Appendix C.

[16] RIM covers 20 EU Member States including Denmark, Finland, Germany, Poland and Sweden. However, RIM does not cover Member States with only local governments, as Estonia, Latvia and Lithuania.

Figure 28: Baltic Sea research & innovation organisations per country

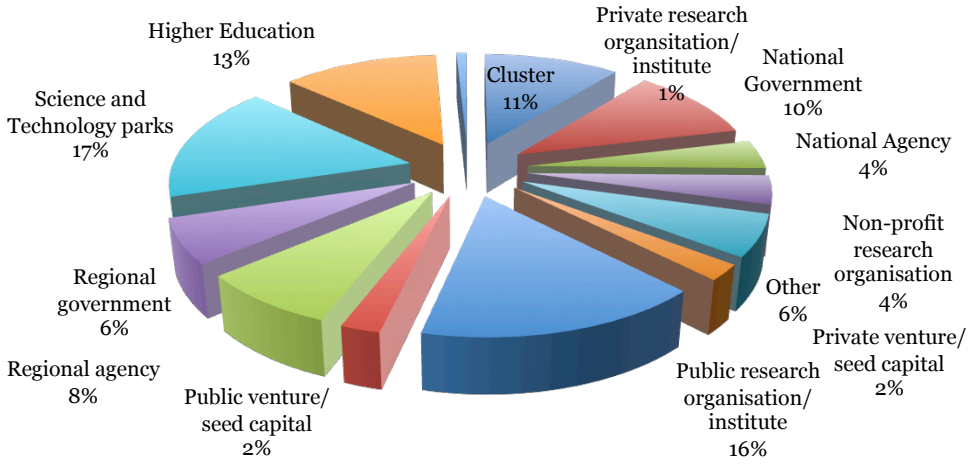
Country	Number of organisations
Denmark [DK]	67
Estonia [EE]	33
Germany [DE]	45
Latvia [LV]	32
Lithuania [LT]	57
Poland [PL]	64
Suomi/Finland [FI]	62
Sweden [SE]	130
Total	**490**

Source: ERAWATCH, RIM databases and experts' input. Calculations by Technopolis Group.

In terms of the number of organisations identified, science and technology parks (17%), public research organisations (16%), higher education institutions (13%), followed by national governments (12%), clusters (11%) and finally regional agencies (8%) have been identified as essential actors in the innovation and research policy systems in the Baltic Sea Region.

These results underline the important role of public authorities such as national ministries, agencies and public research organisations but also the existence of a potential for 'triple-helix' type co-operation (public-private-academic) in the innovation landscape of the Baltic Sea Region. In a large majority of cases, we see how relevant stakeholder groups are involved in the policy formation process. However, the degree of involvement varies considerably between countries, ranging from a greater role of public sector and academic sector in Polish regions, industrial sectors in Denmark to an authentic triple helix model in Sweden.

Figure 29 BSR research & innovation stakeholders and organisations by type



Source: ERAWATCH, RIM databases and experts' input. Calculations by Technopolis Group

To this extent, 61 higher education centres and science and technology parks have been highlighted as important partners in innovation projects and crucial actors in knowledge creation and transfer in the regions. It is worth noting how all experts have equally given special attention to **higher education institutions**, mentioning on average two to three universities per region or country for the case of the Baltic States. Sweden is the country where the education system has been perceived as most

important in terms of total number of universities mentioned (14 universities have been mentioned, representing a 23% of all collected universities). Poland and Germany, with 10 and 9 universities respectively, gets marked significantly above. On the other hand, Latvia and Estonia with only two and four universities respectively being outlined, clearly illustrate the difficulty in achieving a satisfactory enrolment level of the higher education system in these Baltic States.

Another important finding in relation to the higher education institutions is the higher number of these, which **are involved in cross-border initiatives** within the Baltic Sea Region. More than half of the higher and tertiary education centres (55% compared to an average of 35% for all organisations) work together with neighbouring centres in specific educational and research opportunities within the region. The aim is to maintain a strong human capital base by strengthening knowledge flows between the BS region countries.

This picture is to some extent different for **science and technology parks**. Science parks do not seem to be homogeneously represented and supported in all BSR countries and regions. The bulk of science parks, over 35%, are located in Swedish regions; followed by Finland and Lithuania (22% and 16% respectively of the total). Local governments in Germany and Latvia, with one and two science parks respectively, seem to promote less this type of projects.

Case 8: Uppsala Innovation Centre (UIC)

UIC is a part of the Swedish national incubator program (IBIP) run by Innovationsbron. As business incubator for growth companies in the Uppsala region, UIC is supporting start-up companies that want to develop new ideas to become strong growth companies. Since 1999 it fundamentally provides management and financial assistance as well as access to commercial and technological networks.

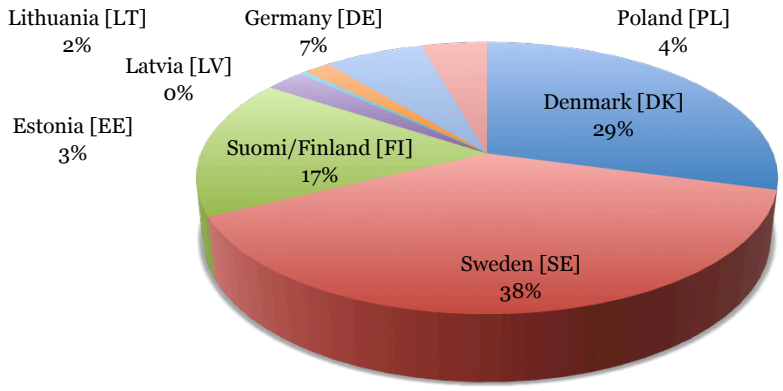
Around 140 companies have been part of the incubator programmes and a network of around 50 business coaches has been established. UIC offers today four different incubator programmes, with a sum of 65 participating companies; UIC Business Start (39 participants), UIC Business Lab (43), UIC Business Accelerator (22) and UIC Alumni (24), all of which have been completely funded by partners (Innovationsbron has the largest part).

UIC itself points to a number of key success factors, the most important are: 1) the range of programmes, 2) the business coach model, 3) UIC has no ownership in the incubator companies, 4) focus is on business development, not on letting out premises, 5) clear and reciprocal demands between UIC and companies, 6) continuous, monthly reports from business coaches, 7) the companies appreciate the efforts and are willing to pay for them, and 8) strong co-operation between actors in the innovation system.

As exceptional mention has been also given to clusters. Only in Sweden and Denmark a total of 40 **clusters** (out of the 53 clusters identified in the BSR) have been identified. A similar case is found in the Pomorskie and Warminsko-Mazurskie regions where a total of 10 clusters have been identified in a wide range of sectors. From the Space sector (e.g. Latvian Space Technology Cluster), fibber Optic (e.g. Fiber Optic Valley in Norra Mellansveige, Sweden) to agriculture and food industry (e.g. Agro Food Park in Midtjylland, Denmark) the function of clusters in delivering and implementing innovation activities is their specific region is undeniable.

The presence and relative importance of clusters in the Scandinavian countries versus the early development and low existence of these competitive poles in the Baltic States, it is also well confirmed by the cluster data available in the European Cluster Observatory. According to this data, there are nearby 230 cluster organisations in the Baltic Sea Region. Over a third of these clusters (38%) are located in Sweden, closely follow by Denmark with 29% of cluster operating in the country. All in all, the fact that the **bulk (85%) of all cluster organisations in the BSR are established in the Scandinavian countries,** indicates how the drivers of regional and national innovation systems differ in these two groups of countries. This significant gap in clusters development is demonstrating that innovation systems models are, to some extend, more business driven in the Scandinavian countries in comparison to the Baltic States.

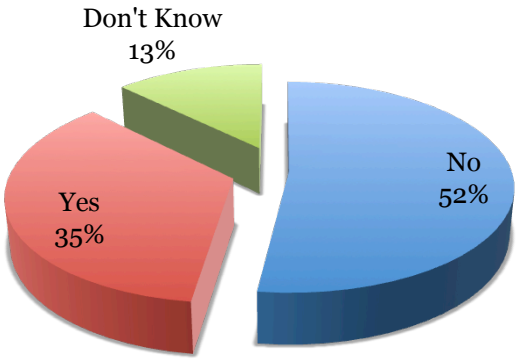
Figure 30: cluster organisations in the Baltic Sea Region



Source: European Cluster Observatory. Calculations by Technopolis Group

Dissimilar to results for higher educations centres, the majority of clusters (close to 80%) identified by expert **do not have any specific co-operation projects or networks in the Baltic Sea Region**. Most of them have thus as common denominator the intention to stimulate the development, growth and competitiveness of a specific sector within their geographical location and the intention of co-operating with bordering regions/countries is not explicitly integrated as part of their activities. Clusters seem to be limited to a specific region that is much smaller than the Baltic Sea Region and often smaller than a country. Nonetheless, among the interviews with key stakeholders it has been repeatedly stated that there are an existing opportunities for further co-operation among all such clusters in a given field, for example of all life science biopharmaceutical clusters located in the Baltic Sea Region.

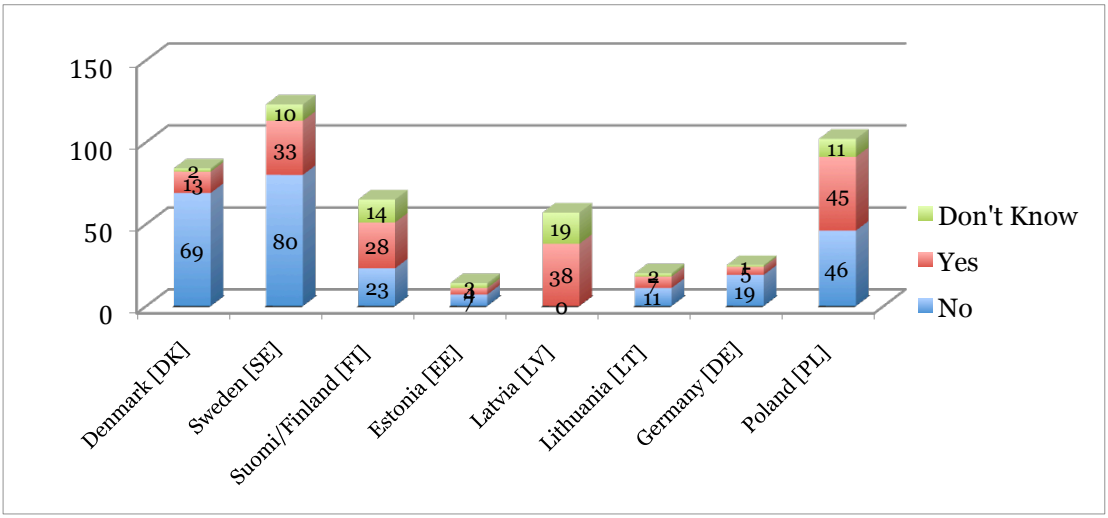
Figure 31: Baltic organisation involvement in BSR co-operation



Source: Experts' input. Calculations by Technopolis Group

In general, the involvement of these national and regional organisations in BSR co-operation seems not to be, as of yet, very high. Certainly, Figure 31 shows that a considerable majority of the indentified organisations are not involved in any kind of co-operation programme or network with other Baltic Sea region. Only, over one third (35%) of the organisations are committed to any kind of trans-national or inter-regional co-operation with bordering countries. According to the information collected, the most active organisations in the BSR co-operation are primarily found in Finland, Sweden and Poland.

Figure 32: BSR organisation involvement in BSR co-operation



Source: Experts' input. Calculations by Technopolis Group

According to the latest report on the State of the region report[17], the current set of institutions supporting and being actively involved in collaboration projects across the Baltic Sea region has grown over time. From the Nordic Council created in 1952 to the latest EU funded initiatives, collaboration projects and activities have significantly increased during the last decade. Additionally, a considerable number of cross-border organisations supporting cross-bordering collaboration have recently and gradually flourished (see section 6.1 for an overview and analysis of the most important trans-national organisations promoting collaboration structures in the BSR).

5.2 Focus on early stage venture funding organisations in the BSR

The issue of (early-stage) venture funding capacities in the BSR is the subject of one of the five flagships (7.2 Create a Baltic Sea Fund for innovation and research) of the EUSBSR (see Figure 35). All Member States have developed in one form or another, see Figure 33, public or public-private co-investment funds over the last decade, with the partial exception of Lithuania. In some cases, this has been done with ERDF support (e.g. Latvia) and/or with support from the European Investment Fund (EIB).

Figure 33: overview of early-stage funding organisations in the BSR

Country	Main public or hybrid early stage or seed capital funds	Comment (ERDF co-financed, thematic focus, etc.)
Denmark	• Innovationsmiljøer (incubators) • Vækstfonden	• Innovation Incubators may invest up to de minimis threshold per company and together with Vækstfonden invest 60 % of the seed capital.
Estonia	• Arengufond (Estonian Development Fund)	• No ERDF co-financing, operates as a pari passu investment vehicle with business angels and private venture funds
Finland	• SITRA • Finnish Industry Investments • Veraventure • VIGO	• Venture capital investments within its specific programmes • Only growth stage investments • Investments in the seed and start-up stages (80% of Finnish early-stage market (2009) • New business accelerator programme for

17 State of the region report 2010: the top of Europe Recovering, regional lessons from a global crisis. http://www.bdforum.org/show/english/reports_publications/state_of_the_region_report.aspx

		fast growing young companies
Germany	• High-tech Start-up Fund • EXIST Gründerstipendium • Federal Technology Venture Capital (VC) programmes	• Financed by the federal government sources and by a small number of large enterprises
Latvia	• Venture capital funding programme (managed by three private venture funds) • Funds-of-funds within the Latvian Guarantee Agency	• Since 2005, the programme has been co-financed by the ERDF
Lithuania	• Controlling fund established	• Co-financed by the EU Structural Funds. Funds allocated during 2009-2010 for venture capital and business guarantees and loans of roughly €550m
Poland	• Plans for 20 new venture capital funds during 2007-13 period • Fund of Funds established (2005)	• ERDF co-financed under Measure 3.2 of the OP Innovative Economy • ERDF co-financed
Sweden	• ALMI Invest • Innovationbron	• Co-funding from the ERDF • Innovationbron seed funding products are: soft loans, development grants, equity and management support for incubators

Source: authors compilation based on referenced materials and policy briefs for this study

The three Nordic countries have all adopted different approaches to funding of young innovative firms and the provision of seed and early stage capital[18]. Despite a range of initiatives, in the Nordic countries the supply of private capital for the very early stage of venture capital – the seed stage - has been limited. Consequently, this space is at present dominated by public and publicly funded players. However, the review of the three Nordic countries early-stage (seed) capital funds underlined that fragmentation and sub-critical fund size allied to limited 'deal flow means that the funds are not efficient. For example, in Finland, the status of the early stage investment industry was described as 'critical' with a mere five early-stage funds actively investing with few funds having above €50m under management, a limited ability to rapidly scale early stage companies to international growth and few investments even by those funds with over €50M under management reflecting the need for funds to reserve sufficient capital for follow-on investments or a change in investment strategy.

Of the new Member States, the Estonian case is probably the most innovative, with the Estonian Development Fund, established as a co-investment vehicle, without ERDF support, with a mission extending beyond investments in start-ups to fostering the development of an investment culture; as well as a foresight and strategy development division providing input to the overall policy development for innovation. An 'early' evaluation after two year of operations[19] found that the fund had been relatively successful in rolling out both an investment strategy and accompanying actions (e.g. establishing the Estonian Venture Capital Association). However, the restrictions set on the fund (e.g. no investments outside of Estonia) and the limited overall capital below the minimum industry standard threshold of at least €50m raised questions.

Latvia was a 'first mover' amongst the new Member States, inspiring establishing a fund of funds, with ERDF support, which then invested in three privately managed venture sector funds. An assessment carried out as part of a DG REGIO study on innovative ERDF funded projects in 2009 found that that although the investment target has been revised downwards, the project could be considered a success.

[18] For a good overview see the 2010 report from the Nordic Innovation Centre: Creating Nordic Success Stories Enhancing cooperation on the Nordic seed capital market.

[19] Nightingale P. & Reid A. (2010) Early-stage Investment by the Estonian Development Fund, An appraisal of activities 2007-2009 and scenarios for future development.

In Lithuania, the 'Controlling fund', created with ERDF support, aims to improve SME access to external funding sources (micro crediting up to €25 000; venture capital fund investments; guarantees for SME financial obligations). However, at the current time, the early-stage funds available are limited. The situation is similar in Poland, which has struggled despite an ERDF measure during 2004-2006, to launch planned venture capital funds. The KFK (Krajowy Fundusz Kapitałowy, http://www.kfk.org.pl), a fund of funds, was established in 2005 with support from the ERDF and EIB. However, it did not make a call for tenders to allocate funds of up to 300m PLN) until 2009. During the current 2007-13 period, there is a plan to develop 20 venture capital funds which are excepted to invest in about 160 innovative start-ups; on average €1.5m per start-up. By November 2010, the KFK had invested in seven funds (€63m, approx. PLN250m) and hence initial individual investments have only begun in the last few months.

It is clear from the overview of national organisation and experience that there is a potential for expanding both cross-country 'learning' and exchange of experience in the BSR on early stage funding but also potentially a greater integration or co-operation amongst early stage funds as well as the broader financial sector. Indeed, a 2007 report on "Financial Integration of the Baltic Sea Region Benefits and Barriers" argued that whilst, the Nordic countries are characterised by high levels of bank intermediation and developed nonbank sectors, financial systems in the Baltic countries are centred on conventional banking activates and non banking financial products (investment funds, venture capital funds and other nonbank investors) hold an asset share which is growing but still at a very moderate level[20]. The authors. argued that regional efforts to facilitate cross-border investments by actors in these categories could provide an important source of financing for SMEs in the Baltic and Polish markets.

More recently, the 2010 NICE report on Nordic seed capital market, 2010 concluded that: "*The resources on today's Nordic seed market are scattered. Much is to be gained by benchmarking and sharing best practices among Nordic public investors and financers. Increased Nordic cooperation is expected to lead to higher critical mass and tighter networks that are vital for the success of early stage national investment programmes. Combined, the Nordic countries could constitute a common market of a size that would produce venture capital players in different stages with critical mass and global competitiveness*".

Given the preceding observations on the difficulties of developing viable early-stage venture funds in the Baltic States and Poland, then if the term Nordic is replaced by the words Baltic Sea Region in the above paragraph then it sums up nicely the opportunity that could be pursued as part of the EUSBSR flagship project.

20 http://www.bdforum.org/download/Files/publications/Thematic%20Reports/Fin_l_Integration_Report_01.11.07.pdf.aspx?download=true

6. Transnational innovation co-operation in the Baltic Sea Region

The study aimed to:

- assess the extent to which the aspect of transnational cooperation is reflected in the regional innovation strategies.
- identify existing cooperation links (including which sectors are covered) and to assess to which extent such links are covered by Cohesion policy-funded operational programmes and/or the EUSBSR.

This section begins by considering the main structures and organisations established in the BSR to support inter-governmental and transnational co-operation; including the strategic framework established by the EUSBSR.

6.1 Baltic sea co-operation and the EU's Baltic Sea Region Strategy

Baltic sea co-operation has been developed gradually over the last 20 years subsequent to the collapse of the 'Iron Curtain' at the end of the 1980s. A number of inter-governmental or inter-regional bodies have been created and developed over the last two decades; while Baltic Sea region 'co-operation networks' in a wide range of fields have also been established.[21]

6.1.1 Inter-governmental co-operation

Baltic Sea region inter-governmental co-operation has focused to a significant extent on the environmental challenges facing the sea with agreements such as HELCOM enshrining priorities in this area. Clearly since the accession of all countries bordering the BSR (aside from Russia) to the EU, EU level institutions and programmes have become a main driver of inter-governmental co-operation. However, both prior to and after EU accession, a number of other inter-governmental organisations have played a leading role in the co-ordinating BSR policy priorities.

At inter-governmental level, the Council of the Baltic Sea States (CBSS)[22], established by the region's Foreign Ministers in Copenhagen in 1992, is an overall political forum for regional intergovernmental cooperation. The members of the Council are the 11 states of the Baltic Sea region[23] as well as the European Commission. Its work is organised around five main priority areas: environment, economic development, energy, education and culture, and civil security. Since 2009, the CBSS has placed an even stronger focus of its activities on maritime and sustainable development policies (establishment of a new CBSS expert group on Maritime Policy, the integration of the Baltic 21 network into the CBSS structure as an expert group on sustainable development, and the creation of a project facilitation budget line to be used as seed money for future CBSS projects. Economic development (under which innovation would fall) activities is not currently a main focus.

Established in 1971, the Nordic Council of Ministers (NCM; www.norden.org) is the platform for intergovernmental cooperation between the Nordic countries. NCM has a broad range of activities within 11 different Ministerial Councils. Traditionally, the area of education, research, culture, and innovation account for over half of the annual

[21] The Helsinki Commission, or HELCOM, works to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental co-operation between Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. HELCOM is the governing body of the "Convention on the Protection of the Marine Environment of the Baltic Sea Area" - more usually known as the Helsinki Convention.

[22] http://www.cbss.org

[23] Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia and Sweden.

budget of approximately € 120 million. Over the last few years, collaboration on competitiveness issues, in particular research and innovation, has become an ever more prominent part of the agenda. Compared to the CBSS, and aside from the scale of budget available to the organisation per se, NCM is differentiated from the CBSS in that it has a number of 'agencies' and notably in the field of research and innovation the Nordic Innovation Centre http://www.nordicinnovation.net, NORDFORSK http://www.nordforsk.org/en, Nordic Energy Research the funding institution for energy research http://www.nordicenergy.net.

In addition, the Nordic Investment Bank (NIB) http://www.nib.int/ finances projects that strengthen competitiveness and enhance the environment. The Bank offers long-term loans and guarantees on competitive market terms to its clients in the private and public sectors. NIB is an international financial institution owned by Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden.

Over the last decade, the NCM has sought to work closely with neighbouring countries around the BSR, notably with the three Baltic States (Estonia, Latvia and Lithuania) in the so-called Nordic-Baltic 8 framework (NB8). In addition to NCM offices in each of the Baltic States a number of specific programmes aim to strengthen co-operation and pursue policy agendas. For instance, the Nordic-Baltic Mobility and Network Programme for Business and Industry was launched in 2009 to strengthen co-operation in entrepreneurship and innovation field.

Case 9 Nordic–Baltic Mobility Programme for Business and Industry

The Nordic–Baltic Mobility Programme for Business and Industry is part of a longer Nordic-Baltic co-operation that was initiated in 1991 and has developed into a political co-operation in areas of joint priorities. The current Programme is planned to be operational for the period 2009 – 2013.

The programme aims to strengthen business co-operation, entrepreneurship, and regional cluster co-operation between the Nordic and Baltic (Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden) countries. It provides financial support to different stakeholders in the fields of business and industry to carry out study visits, internships, on-the-job training or network and cluster facilitating activities in Baltic or Nordic countries.

The programme is administered by the Nordic Council of Ministers' Office in Latvia (the Management Body). The Nordic Council of Ministers (NCM) decides on the operation and funding for the programme. The annual budget of the programme is financed by the Nordic Council of Ministers and the governments of Estonia, Latvia and Lithuania. Co-funding from beneficiaries is also mandatory.

In 2009 and 2010 101 projects were funded in total. Beneficiaries were businesses and organisations supporting the private sector. Several projects resulted in continuous cooperation between the involved parties, as for instance the Latvian Transport and Logistics cluster initiated FP7 project with the partners from the mobility programme project. The programme has shown evidence on how mechanisms to initiate and support the co-operation at initial phase are necessary.

In the spring of 2010, Latvia and Denmark in their capacities as the presidents of the Baltic Council of Ministers and the Nordic Foreign Policy Cooperation, respectively, decided to establish a 'wise men' group to look into how to advance cooperation between the Nordic and Baltic countries (NB8) in order to strengthen relations and address common regional and global challenges more efficiently. The NB8 Wise Men Report (NB8, 2010) focused essentially on recommendations for further co-operation in security, energy and defence policies. However, it did note that: "in general, that following accession of the Baltic States to the EU, the Nordic countries took a less active approach, leaving more room for the Baltic countries to adjust to their new status in Europe" and that 'Somewhat paradoxically, the lack of comprehensive political NB8 cooperation came at the same time as Nordic businesses actively started

entering the Baltic business sphere, mainly through direct investments and partnerships'.

In this context, the role of the EU, both in terms of the broad policy framework (the Lisbon Strategy during the period up to 2010 and currently the Europe 2020 objectives) and the access to EU funding programmes (Structural Funds including inter-regional co-operation, Research Framework Programmes, etc.) have clearly given a new dimension to the co-operation around the Baltic Sea. Given the importance of, notably, the Structural Funds as a source of funding (particularly in the Baltic States and Poland), a key question is the extent that BSR co-operation is driven by a cohesive and shared vision of priorities to which EU instruments contribute.

In short, currently, innovation, together with environment sustainability, accounts for a significant share of the regional and cross-border activities pursued at inter-governmental level in the BSR[24].

6.1.2 Baltic Sea region transnational co-operation networks

In addition to inter-governmental co-operation, a significant number of BSR networks have developed over time[25]. A number of the BSR level networks and organisations are in fields relevant to the innovation agenda and the main ones are listed in Figure 34. From the review of the existing institutions, it is striking to see the significant number of inter-intergovernmental forums and political networks established in the BSR. The NB8 Wise Men report (NB8 2010) noted that '*there is no need for new regional structures; indeed, there are voices even advocating the dissolution of many of the existing ones which some find to be redundant or inefficient*. In comparison to the public sector representation, the business sectors, seems however to be less organised and represented in the Baltic Sea cooperation landscape.

Figure 34: main Baltic Sea region public and NGO 'network organisations'

Co-operation network	Structure & objectives	Weblink
The Nordic Council of Ministers (NCM)	• The NCM is the forum for Nordic governmental co-operation • Denmark, Finland, Iceland, Norway and Sweden have been members since 1971 • The Nordic Council has 87 members, elected among the members of the national parliaments.	http://www.norden.org/
The council of the Baltic Sea States (CBSS)	• The council of the Baltic Sea States is a regional forum for intergovernmental collaboration between the eleven countries of the BSR and the European Commission established in 1992 • It consists of the Ministers for Foreign Affairs from each Member State and a member of the European Commission. The Presidency of the Council rotates among the MS on an annual basis • Members are responsible for funding common activities and/or for seeking and coordinating financing from other sources	http://www.cbss.org/

24 State of the region report 2008:sustaining growth at the top of Europe. by Christian Ketels
25 See for instance the list of organisations on the CBSS website: http://www.cbss.org/Content/links

Co-operation network	Structure & objectives	Weblink
The Baltic Sea States Subregional Cooperation (BSSSC)	• BSSSC is a political network for decentralised authorities (sub-regions) in the BSR • It acts as a regional partner to the CBSS SINCE 1993 • Its participants are regional authorities of the 10 BS littoral states promoting and advocating the interest of the sub-regions to national level and EU institutions	http://www.bsssc.com/
Baltic Development Forum (BDF)	• Baltic Development Forum is an independent non-profit networking organisation for business, governments, regional organisations, academia and the media to discuss, facilitate and develop new initiatives in BSR • Established in 1998, it is supported by a broad variety of members and strategic partners (public and private actors)	http://www.bdforum.org/
The Baltic Sea Chambers of Commerce Association (BBCA)	• The BBCA is an organisation of al together 50 chambers of commerce across the Baltic Sea Region. It is run by its members and has an elected presidium (the Presidents/CEOs of some of the members) • It promotes trade and business relationships across the Baltic Sea Region	http://www.bcca.ws/
Baltic Sea Unit (SIDA)	• This Baltic Sea arm of the Swedish International Development Cooperation Agency, works to further promote and develop relations and cooperation between diverse actors in the BSR • Since 2005, it helps to establish and fund cross-border projects and initiatives in three prioritised key areas: environment, social issues, and civil security	http://www.sida.se/balticseaunit
Baltic Sea Trade Union Network (BASTUN)	• BASTUN is an independent network of 22 member trade union confederations • It works as a forum where the trade unions of the Baltic Sea Region exchange information and discuss and define common interests • Additionally, The network aims at political and social influencing, coordinates joint projects and raises issues related to BSR within the international trade union	http://www.bastun.nu/

Co-operation network	Structure & objectives	Weblink
Nordic Investment Bank (NIB)	• NIB is an international financial institution owned by Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden • NIB's member countries have subscribed authorised capital according to a distribution key based on the eight member countries' gross national income • It promotes sustainable growth of its member countries by providing long-term complementary financing, primarily on projects that strengthen competitiveness and enhance the environment	http://www.nib.int/
The Union of Baltic Cities (UBC)	• Network of over 100 cities from 10 countries in the BSR to collaborate on various political, economic and social issues • It promotes the exchange of know-how and experiences between the cities	http://www.ubc.net/
Vision and Strategies around the Baltic (VASAB)	• VASAB is a platform for intergovernmental multilateral co-operation of 11 countries of the Baltic Sea Region in spatial planning and development • Set up in 1992, it organises on Ministerial Conference (every two or three years) giving basis for further strengthening and harmonisation of national and regional spatial planning policies	http://www.vasab.org/
The Baltic Metropoles Network (BaltMet)	• BaltMet represents eleven capitals and large metropolitan cities around the BSR • Its main goal is to promote innovativeness and competitiveness by engaging cities, as well as academic and business partners, into close cooperation	http://www.baltmet.org/
Baltic Sea Region Programme 2007-2013	• As one of 13 European transnational cooperation programmes, the programme co-finances co-operation projects in the BSR • Its objective is to strengthen the development of sustainable, competitive, and territorially integrated BSR	http://www.eu.baltic.net/
Nordic Innovation Centre	• Under the auspices of the Nordic Council of Ministers, Nordic Innovation works on implementing the Nordic trade, industry and innovation partnership programme • It cooperates with many different public and private companies, organisations and governmental agencies in the Nordic region	http://www.nordicinnovation.org/

Co-operation network	Structure & objectives	Weblink
Baltic Institute of Finland (BIF)	• The Baltic Institute of Finland is a non-profit foundation-based organisation promoting cooperation and partnerships around the BSR • Its central aim is to promote the launch of tangible collaboration projects in the BSR, and facilitate the participation of Finnish organisations • It is maintained by the Foundation for the Baltic Institute, founded by the City of Tampere	http://www.baltic.org/
University Programme (BUP)	• The Baltic University Programme (BUP) is a network of about 225 universities and other institutes of higher learning throughout the Baltic Sea region • The Programme focuses on questions of sustainable development, environmental protection, and democracy in the Baltic Sea region. The aim is to support the key role that universities play in a democratic, peaceful and sustainable development	http://www.ubc.net/ http://www.balticuniv.uu.se/
Baltic Sea Region University Network	• The BSRUN agreement was signed by 16 institutions in Turku on 28 February 2000. • The BSRUN has 34 member institutions in Belarus, Estonia, Finland, Latvia, Lithuania, Poland and Russia	http://www.bsrun.org/ http://www.bcca.ws/
Baltic University Programme (BUP)	• The Baltic University Programme (BUP) is a network of about 225 universities and other institutes of higher learning throughout the Baltic Sea region • The Programme focuses on questions of sustainable development, environmental protection, and democracy in the Baltic Sea region. The aim is to support the key role that universities play in a democratic, peaceful and sustainable development	http://www.balticuniv.uu.se/

6.1.3 The EU's Baltic Sea Region Strategy

As noted in previous sections, the role that EU instruments play in supporting the development of BSR co-operation has steadily grown since the first half of the 2000 decade. Initially, EU funding supporting co-operation operated through cross-border and inter-regional co-operation programmes (INTERREG during the 2000-2006 programming period of the Structural Funds).

The Baltic Sea Region Strategy, endorsed by the European Council in October 2009, is the first macro-regional strategy (subsequently inspiring a similar strategy for the Danube region). It has the objective of coordinating action within a functional region, by responding to the key challenges of: (i) enabling a sustainable environment, (ii) enhancing the region's prosperity, (iii) increasing accessibility and attractiveness and, (iv) ensuring safety and security in the region.[26] The strategy recognises that it is vital to strengthen transnational co-operation, both at the policy and business level to

26 http://ec.europa.eu/regional_policy/cooperation/baltic/

provide an integrated approach identifying needs, solutions and matching them to available resources in the Baltic Sea Region.

In the field of innovation, the cluster approach is identified as a potential tool for building on existing mapping studies in the region, the BSR Inno-Net project (2006-09) funded under PRO INNO Europe[27] as well as results of the European Cluster Observatory[28].

The 7th of the 15 priorities of the EUSBSR calls for joint effort is "to exploit the full potential of the region in research and innovation", helping to overcome the wide disparities in research and productive innovation. The strategy therefore aims at building upon opportunities such as a well-educated workforce, expertise in innovation particularly in the knowledge-based industries and a strong tradition of inter-regional co-operation.

Within the innovation related priority 7, two actions and four flagship projects have been highlighted in the accompanying action plan[29] to the Strategy. Strategic actions include 'establishing a common Baltic Sea Region innovation strategy' and 'Improve the exploitation of research through patents' under cooperative actions. Flagship projects include: 'develop a Baltic Sea region programme for innovation, clusters and SME-Networks', 'create a Baltic SEA Fund for innovation and research', 'develop a common Baltic Sea region strategy to promote services innovation', 'set-up cross-sectoral reference projects for innovation in health and life sciences', and 'setting up a Baltic Science Link'.

A year into the implementation phase, the work has, so far, focused on the launch of the flagship projects. However, the implementation of the aforementioned flagship projects is still at an embryonic stage, with the exception of BSR Stars.

Figure 35: Priority 7 flagship project state of completion

Flagship Project: Priority 7	Stage of implementation
7.1 BSR Stars- A Baltic Sea Programme for Innovation, clusters and SME networks	• Governance structure, developed a design and a plan for the Flagship implementation
7.2 Create a Baltic Sea Fund for innovation and research	• Starting-up phase, pre-planning phase
7.3 Develop a common Baltic Sea Region strategy to promote services innovation	• No action yet
7.4 The BSR Health region	• Ongoing and open project
7.5 Setting up a science link	• Starting-up phase, pre-planning phase

The development of a Baltic Sea Region programme for innovation, clusters and SME networks has resulted in the BSR Stars programme (7.1). Building on existing commercial strengths and competencies around the BSR, the BSR Stars aspires to, , foster the development of strategic alliances and collaborative innovation projects aimed to tackle common challenges. The opportunity is then to use a demand driven way of working with grand challenges and strong BSR capabilities. The vision for BSR Stars is to achieve global market lead within areas of grand challenges i.e. clean tech, future energy, future health, transports and telecommunication.

27 http://www.proinno-europe.eu/bsr-innonet

28 www.clusterobservatory.eu

29 The Action Plan sets out 15 Priority Areas and 80 flagship projects across the four pillars 'Environment', 'Prosperity', 'Accessibility' and 'Safety and Security.

In terms of its development, the other flagship project worthwhile mentioning, is the ScanBalt project (7.4). The mission of ScanBalt Health Region is to set up cross-sectoral and transnational reference projects for collaboration and innovations in both health and in life sciences to promote public health on a high and sustainable level and to make the Baltic Sea Region a globally leading and prosperous Health Region (see also Case 1). The ScanBalt BioRegion introduced the basic principles of sustainability in 2004 within all fields of life sciences whether it is health, energy, nutrition, or environmental life sciences. The Baltic Sea Region can in this sense be regarded as a model for providing the basis for a knowledge-based economy and for implementing a shared strategy together in a sustainable way in a broad spectrum of activities.

The first review and update of the entire action plan will take place during the Polish Presidency of the EU in the second half of 2011. Subsequent reviews will be followed during later Baltic Sea Region presidency. The opportunity is then to use a demand driven way of working with 'grand challenges' and strong BSR capabilities.

6.2 Transnational networks and organisations funded by EU programmes

EU funding programmes supporting RTDI co-operation at transnational or inter-regional level across the BSR have been highlighted as playing an essential role during the interviews. For this reason, a specific section of the study is devoted to this issue. Therefore, and in addition to the identification of nationally or regionally based organisations (Section 5) and the main transnational and intergovernmental co-operation networks (see Figure 34), this section identifies the various EU funded BSR inter-regional and transnational initiatives with a mission to operate at Baltic Sea level or covering more than one country or region in the research and innovation field.

A distinction has been made between:

- Regional and national organisations that have a remit or mission statement to operate at BSR level
- Transnational or inter-regional projects and networks (supported notably by EU funding instruments such as ERA-NETs, INNO-NETS, INTERREG, etc.)

6.2.1 Baltic Sea Region Programme 2007-13: fostering innovation sub-theme

The EU's Baltic Sea Region Programme 2007-13 promotes regional development through transnational cooperation by funding projects to foster innovations, internal and external accessibility, the Baltic Sea as a common resource, and attractive and competitive cities and regions. Partners from 11 countries (eight EU and Belarus, Norway and Russia) are working together with a total programme budget of €236m coming from ERDF and Norwegian national funding[30].

There are about 65 transnational projects contributing to the four pillars as well as the 15 priorities areas of the BSR Strategy. Within the fostering innovation priority, a total of 22 projects, with a minimum of three BSR countries and partners involved, are currently supporting transnational co-operation. The list of lead partners involved in the programme is provided in Appendix D. Of special interest are the BSHR HealthPort and StarDust projects, both of which are partly financed by the BSR Programme and are fully aligned with priority 7 of the EUSBSR (see section 6.1)

The targeted sectors for these projects are very diverse and the number of projects funded is still not sufficient enough to confirm superior sectoral support coming from the fostering innovation sub-theme projects. However, energy, ICT and environment (including climate change) are among those sectors for which a greater number of

[30] For more information see: http://www.eu.baltic.net

projects have been funded (three projects each). Other sectors such as creative industries or biotechnology have also had a slightly higher support (2 projects).

Figure 36: Overview of BSR Programme 2007-2013 fostering innovation projects

Project Name	Number of countries involved	Number of project partners
BaltFood	7	17
Baltic Fashion	8	11
BalticSupply	6	9
BaSIC	10	16
Best Agers	9	7
BONITA	7	14
BSHR HealthPort	4	9
BSR InnoReg	7	34
BSR QUICK	3	9
BSR_CBP	6	3
COOL Bricks	7	19
FM	9	13
IBI Net	7	15
ICT for Health	8	9
JOSEFIN	7	23
Longlife	8	40
MIN-NOVATION	7	19
PlasTEP	7	11
REMOWE	8	11
SPIN	6	12
StarDust	7	18
URBAN CREATIVE POLES	6	18

Source: Baltic Sea Programme 2007-2013 secretariat

6.2.2 INTERREG IV C - innovation & the knowledge economy sub-theme

The INTERREC IV Programme makes available ERDF funding for interregional co-operation for the period 2007-2013. Nevertheless, the geographical scope (Europe) and the areas of support differ from those of the BSR programe. INTERREG IVC focuses on innovation and the knowledge economy and environment and risk prevention. The programme's overall objective is "to improve the effectiveness of regional policies and instruments". Under the innovation and the knowledge economy priority of INTERREG IVC, there are 51 projects with 124 partners from the BSR. The highest number of participants, with respectively 41 (33%) and 34 (27 %), are based in Sweden and Finland. The presence of Baltic countries is diverse. Where Estonia presents a rather satisfactory participation rate (12 organisations involved), the participation of Latvia and Lithuania can be seen as particularly low (both of these countries have each only eight organisations). German and Polish regions are also less represented in comparison to Sweden, Finland or Denmark. As a result, Sweden, Finland and Denmark account for over 70 % of all organisations involved (88 out of a total of 124). A list of organisations is provided in Appendix D.

The projects running under the innovation and knowledge economy priority must address one of four given subthemes (figures in percentage are share of BSR participants by theme):

- Innovation, Research & Technological Development (23%)
- Entrepreneurship and SMEs (38%)
- Information Society (17%)
- Employment, Human Capital and Education (22%)

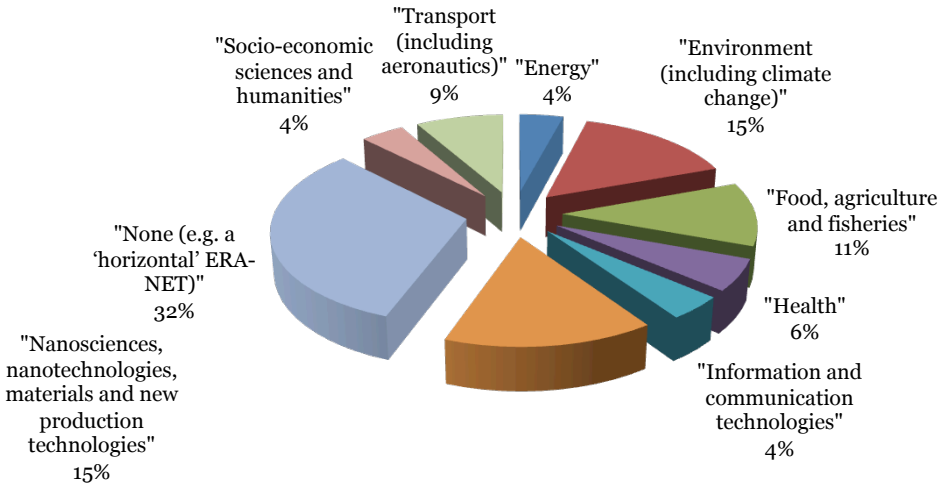
As far the targeted fields are concerned, government and social relations, creative industries and ICT need to be highlighted recur most often for the BSR participants.

6.2.3 ERA-NETs Scheme

The ERA-NET scheme aims to strengthen the coordination of research programmes through allowing national and regional authorities to identify research programmes they wish to coordinate or open up mutually. The participants in these actions are therefore typically ministries or regional authorities defining research programmes or programme 'managers' such as research councils or other research funding agencies managing research programmes.

The scheme, which initially started with FP6 and was later expanded under FP7, has supported 139 projects in which at least one organisation of the BSR countries has participated. All BSR countries are involved in the scheme. Germany[31] (35% of all projects) is by far the leading participant and Finland, Sweden, Denmark and Poland present a significant involvement. A list of organisations and corresponding country is provided in Appendix D.

Figure 37 ERANETs: BSR priority fields (FP6& FP7)



Source: NETWATCH website. Calculations Technopolis Group

Furthermore, for ERANET projects with BSR participation, the most predominant interest fields of the active ERANETs in the BSR are in scientific or technical domains (such as nanoscience or nanotechnologies) as well as on specific policy areas generally related to societal challenges (climate change and environment issues). Finally, it is interesting to mention a special involvement in traditional sectors such food, agriculture and fisheries (see Case 10).

[31] The data from the NETWATCH database does not allow to differentiate atthe NUT2 level, therefore, Germany and Poland have been taken at the country level.

Case 10: BONUS for Baltic Sea Science – Joint Baltic Sea R&D Programme

The Bonus programme brings together the research community of marine, maritime, economical and societal research to address the main societal challenges faced by the Baltic Sea System, and more particularly in the maritime eco-system

The current BONUS programme 2010-2016 acts as continuation to the previous BONUS ERA-NET and BONUS+. The BONUS ERA-NET running between 2004-2008, was a joint project put forward to develop the establishment of a Joint Baltic Sea Research Programme. BONUS+ pilot initiative followed to test the system of collaboration among the national funding institutions launching it first call for proposals in 2007.

The first Bonus project was funded under the ERA-NET scheme as part of the FP6 2002-2006, it was funded by the EU as well as all members and associated members of the EEIG. Its successor, Bonus+ was two thirds coming from national funding agencies and one third funded by EU ERANET+. During the actual phase of the project for the period 2010-2016, half of the funding (€50 million) come from EC funding and the remaining 50% of the budget from national contributions.

The different BONUS phases have, generally speaking, helped bringing together the key research funding organisations from all the EU member states around the Baltic Sea. At this first stage, the programme did not offer funding for networking of scientists or research projects. Instead, it made the national research funding organisations cooperate by building up a Joint Baltic Sea Research Programme to fund research. Progressively, the BONUS+ opened a new stage of cooperation through the call for proposals launched in 2007. The programme has funded a total of 16 projects involving over 100 research institutes and universities and has set out to test the mechanisms of collaboration among national funding institutions.

Source: Bonus programme website: http://www.bonusportal.org

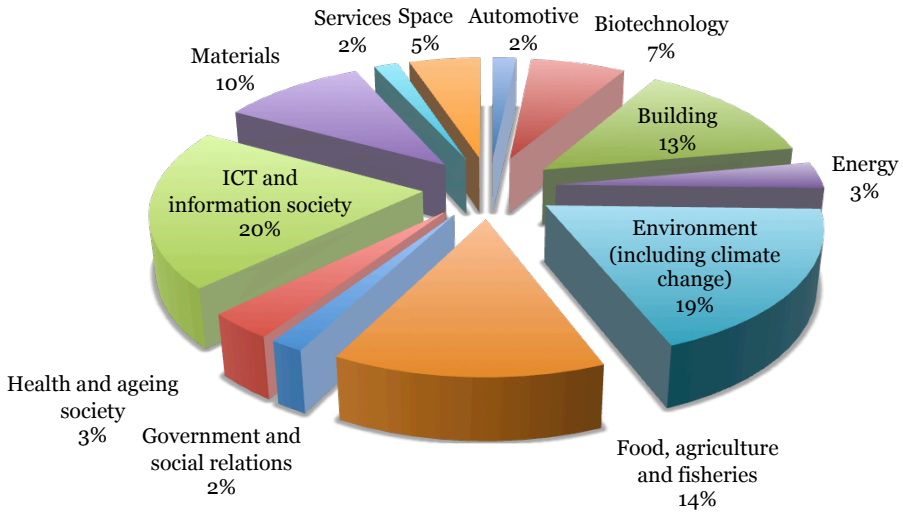
6.2.4 Regions of Knowledge, Europe-Innova and INNO-Nets

Under the RoK Programme, nine projects with involvement from the Baltic Sea Region were identified. Three of these projects are in the ICT and information society sector; two in the socioeconomic science and humanities; and the other two are focused in the environment field. The highest participation can be found in Sweden and Denmark, both of which stand for 80% of the total of organisations involved.32

In comparison to RoK, Europe INNOVA and INNO-NETs have a considerable number of projects running in the BSR. For INNO-NETs the expert team has identified 13 projects and the sum of 30 BSR organisations involved. As for Europe-Innova, 29 projects have been identified with over 60 partners organisations involved. ICT and information society together with environment sector have been the most recurrent fields financed by Europe- Innova. Once more, the most active organisations for both of these programmes are located in Finland and Denmark followed by Sweden (11 organisations).

32 More information on the projects, theme of calls and targeted field of the nine projects funded by Regions of knowledge is provided in Appendix D.

Figure 38: Europe INNOVA: BSR targeted sectors



Source: Europe Innova website. Calculations by Technopolis Group

6.2.5 Transnational cluster co-operation in the BSR

First efforts to develop transnational linkages among clusters in the Baltic Sea Region were taken by the Nordic Council of Ministers and through the Nordic Innovation Centre. The Northern Cluster Alliance, launched by FORA, Innovation Norway, TEKES and VINNOVA in 2004, became a first platform for exchanging practices on cluster policies. In 2006 the Baltic Sea Region Innovation Network (BSR INNO-Net) was launched under the PRO INNO Europe initiative of the European Commission. The BSR INNO-Net aimed at creating operational and long-term links between cluster policy makers, implementing agencies and analysts in the Baltic Sea Region. The partners established a joint conceptual framework for cluster policy formation, evaluation and operational activities across national borders and created joint innovation programmes for cluster development. Pilot projects were initiated with clusters cooperating under areas such as biotechnology, food, ICT and wood production and furniture. The BSR INNO-Net has been a very successful policy forum on clusters and provided a basis and many new ideas to the EU Strategy for the Baltic Sea Region[33] presented by the European Commission in 2009.

Specific projects in the field of clusters have been supported via the "Baltic Sea Region INTERREG IIIB Neighbourhood Programme 2000-2006"[34] and later by the "Baltic Sea Region Programme 2007-2013"[35]. For example the projects, "Connect BSR" and "Connect BSR+" funded under the 2000-2006 programme targeted the development of clusters according to the triple helix model, including the development of new companies, raising venture capital and developing model solution. Cluster-related support areas of the 2007-2013 programme are the "stimulation of transnational interactions between enterprises, R&D institutions and public authorities towards territorial expansion of clusters" and the "integration of SMEs into existing transnational co-operation clusters" with several projects going on such as the BaltFood or BalticSupply. Today, transnational cluster activities are part of the EU Strategy for the Baltic Sea Region, more specifically of the BSR Stars[36] flagship programme (See Section 6.1.3).

33 http://ec.europa.eu/regional_policy/cooperation/baltic/index_en.htm
34 http://www.spatial.baltic.net/
35 http://eu.baltic.net/
36 http://www.bsrstars.se/

Figure 39: Summary of projects on clusters under different initiatives

BSR INNO Net (funded under FP6) 2006-2009	BSR Programme (funded under ERDF) 2007-2013	BSR Stars flagship under the BSR Strategy 2010 -
• Pilot on food • Pilot on furniture • Pilot on ICT • Pilot on bioenergy	• BSR Capacity Building Programme • BaltFood • BalticSupply	Stardust • Mobile Vikings • Active for Life • Marchain • Clean Water • Comfort in Living

Case 11: Transnational Cluster Cooperation in the ICT field in the BSR: Mobile Vikings

The ICT sector in the BSR is highly developed with advanced technologies hosting many important ICT clusters. In this context, "Mobile Vikings" aims to excel in new methodologies and tools leveraging BSR's strengths in telecommunication/mobile applications and services. The key building block of the approach is to exploit the vast theoretical knowledge on open innovation and user and demand-driven innovation and put concrete new methods in practice as part of the innovation strategies of companies, academia and society.

Mobile Vikings is a five partner consortium from five countries led by Mobile Heights (Sweden) with the Latvian ICT Cluster, Øresund IT, HERMIA, Competence Cluster for Ubiquitous Computing and Visorial Information Technology. There are a further 11 associated partners from Norway, Demark, Poland, Germany, Finland and Sweden.

The collaboration is focused on creating new products and services in new and growing companies piggy-backing on the international networks of global enterprises. The project aims at new user- and demand driven business and innovation models that secure jobs and competitiveness with a thematic focus on digital business and services and ubiquitous solution. The activities include: firstly, the development of test beds for new products and services in the telecommunications/mobile applications area. Secondly, an investigation of how open innovation methodologies can be used by cluster managers; thirdly, creating a real and unified Baltic Sea market in the specific field.

Source: http://www.bsrstars.se/stardust/mobile-vikings/

6.3 Framework Programme cooperation

International research cooperation within the EU and with associated countries has been funded for more than two decades via the EU's Framework Programmes for Research and Technological Development (FP). Given the different accession dates to the EU of the BSR countries, some have a longer research cooperation history than others using this EU mechanism. This may result in larger numbers of individual participants or in larger numbers in terms of individual participations by country or region. Given that FP participation is open to partners from all EU and associated countries, it is interesting to analyse actual cooperation patterns amongst countries and regions[37].

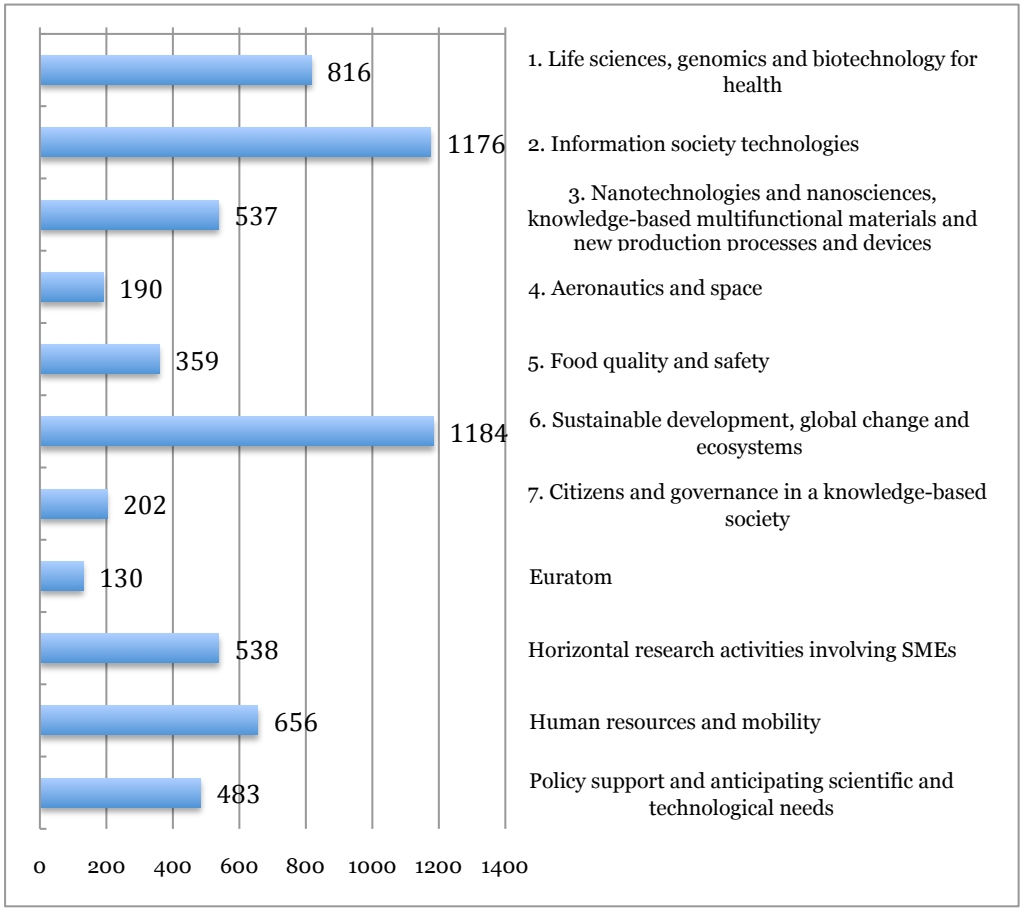
At the NUTS level, the FP6 data is only available at country level (NUTS 1) for the Baltic States and Denmark, however, data for Germany, Finland, Poland and Sweden is available at NUTS 2 and NUTS3 levels. The European Commission's (EC) total

[37] As names of the participants are not standardised and the addresses, in particular the NUTS codes, are not always complete, it is impossible to identify for example cooperation densities of any given organisation (participant) without an enormous cleaning effort. The analysis thus results in conclusions such as "region x cooperated ten times with participants from within the region, 40 times with other domestic regions and 100 times with other EU regions." Thus the term "participations" is used rather than participants, as the latter is misleading.

financial contribution under FP6 amounted to €15.5 billion o which 92% (€14.2 billion) was allocated within the EU27 Member States. The BSR regions obtained roughly €1.4 billion, with Sweden (€624 million), Denmark (€372 million) and Finland (€314 million) leading. The BSR NUTS2 region that received the smallest funding was Warmińsko-Mazurskie with almost €1m.

In terms of priority areas, *Information Society Technologies* obtained the largest share with 23% of total EC grants, followed by *Life sciences, genomics and biotechnology for health* (14%) and *Sustainable development, global change and ecosystems* (13%). However, the BSR showed clear preferences for two priority areas: Sustainable development and ICT obtained each about 19%, followed by life science with 13% (Figure 40).

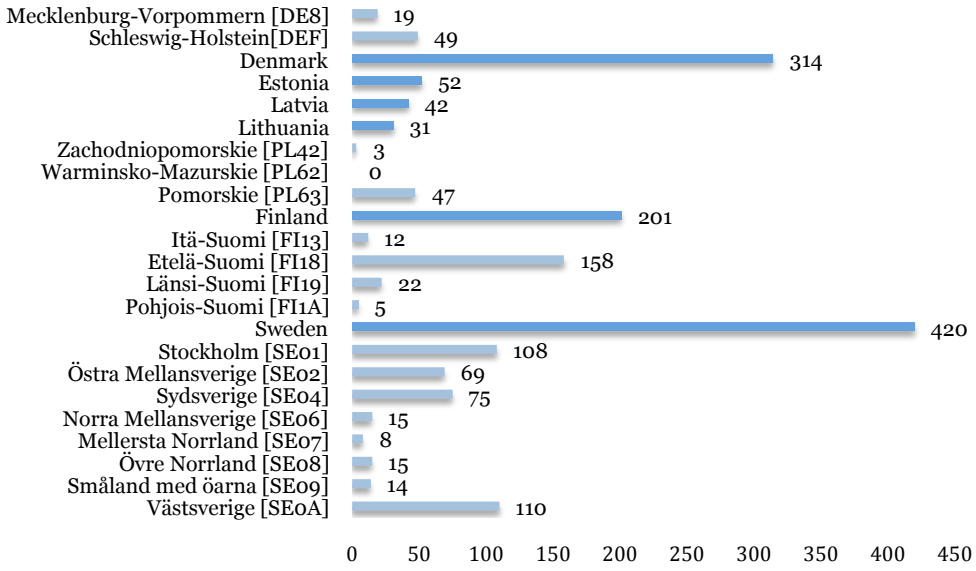
Figure 40: BSR participations in FP6 by priority area



Source: E-Corda, Treatment and calculations: Technopolis Group

A regional breakdown is presented in Figure 41 for the sustainable development priority area. At country level, Sweden shows the highest number of participations, followed by Denmark and Finland. At the regional level, South Finland (FI18) has the highest number of participations, followed by West Sweden (SE0A). The absence of two of the northern Polish regions in this priority area is noteworthy. If the field is a core Baltic Sea unifying priority, then the lack of cooperating Polish partners suggests a weakness that may be explained by a missing research infrastructure or a less developed integration in international research networks.

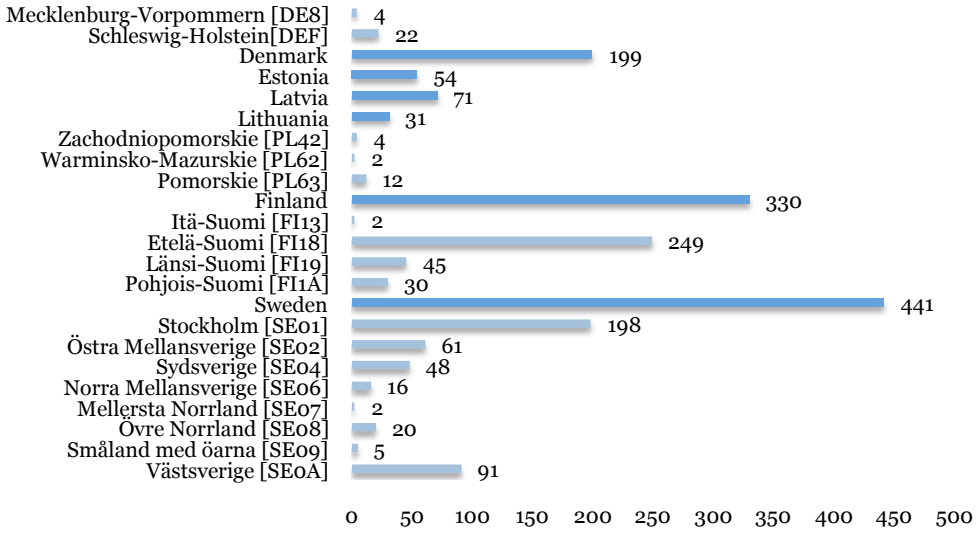
Figure 41: BSR participations by region in FP6, priority area
Sustainable Development, global change and ecosystems



Source: E-Corda; Treatment and calculations: Technopolis Group
Note: The Swedish NUTS codes follow the old, 2003 NUTS classification

A rather similar picture can be seen for the Information society technologies (Figure 42), with the difference that Finland is relatively more involved and the difference to Sweden compared to the previous field is much lower. In terms of main regions, South Finland is still the dominant Finnish region but for Sweden, the Stockholm region (SE01) is by far the most active in this priority area, followed by West Sweden (SE0A).

Figure 42 BSR participations by region in FP6, priority area: i*nformation technologies*



Source: E-Corda; treatment and calculations: Technopolis Group
Note: The Swedish NUTS codes follow the old, 2003 NUTS classification

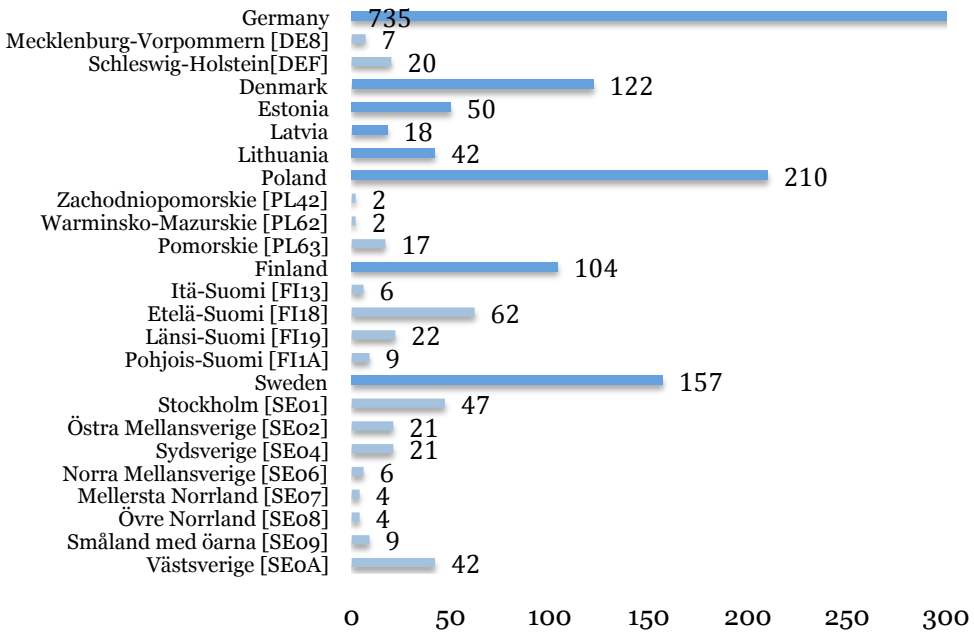
Given the focus on innovation in the BSR, the analysis of the rather small FP priority area, 'Horizontal research activities involving SMEs' is pertinent. The priority received only 3% or roughly €465 million under FP6, and accounted for 9% of all BSR

participations. However, as priority is aimed at generating a relatively high proportion of participations by smaller firms it is interesting to look at from the perspective of Baltic Sea wide knowledge transfer. The key figures concerning this priority are:

- 490 projects were funded; 255 (52%) are with a BSR participant;
- A total of 5,440 participations, including also FP-associated countries like Norway or Turkey; with 524 (9.6%) participations of BSR.
- 91% of the organisations participated only once. 6% took part twice and only 3% participated more than two times;
- Project size ranged from three to 46 participants with an average of 11; for the BSR participant projects, the range was from 3 to 40 with an average of 11.
- The priority area involved a large share of industry (61%) followed by public research organisations (17%), the higher education sector (11%), and 'other' (11%).

While German participants make up 13.5% of the priority area, for the two German BSR regions, this priority has very low relevance: not even 1% of participations from Mecklenburg-Vorpommern and only 2.7% from Schleswig-Holstein. The overall Polish share in this priority is 3.9%: Pomorskie (PL63) provides 8% of the participations and 1% from each of the two other regions.

Figure 43 BSR participations by region in FP6, priority area
Horizontal research activities involving SMEs

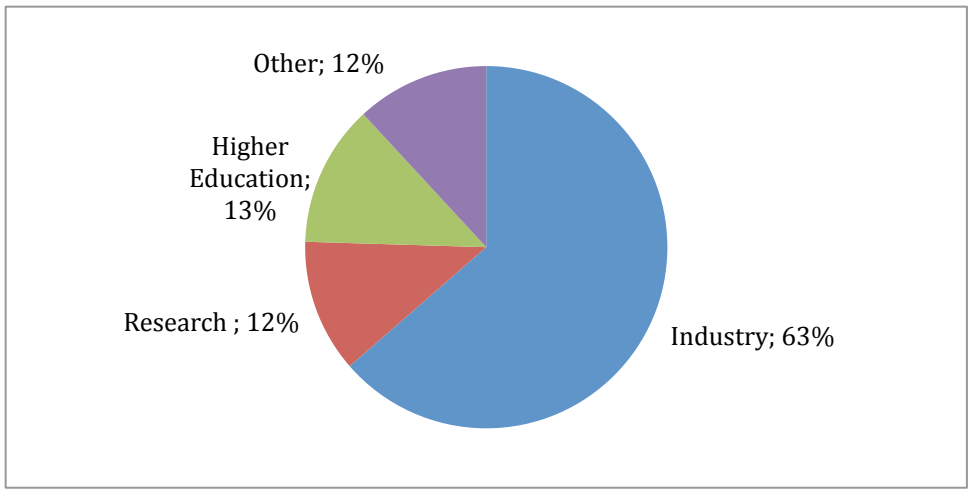


Source: E-Corda; Treatment and calculations: Technopolis Group
Note: The Swedish NUTS codes follow the old, 2003 NUTS classification

By type of organisation (Figure 44), the BSR participation varies from the overall FP6 patterns, the most striking difference being the lower share of public research institutes (12% BSR versus 17% overall). In the Polish regions, but also in many Finnish and Swedish regions, the sector is not involved. This may be because the public research centres in these regions are not well integrated with regional SMEs. In Finland, the share of public research centres participations is well above average at 19%, however, only one participation is not from South Finland (FI18). There is a similar pattern in Sweden with the overall share of public research organisations around average (13%) but 60% of participations from Southern Sweden (SE0A) and

20% from Stockholm region (SE01) while the other six regions have either one or zero participations.

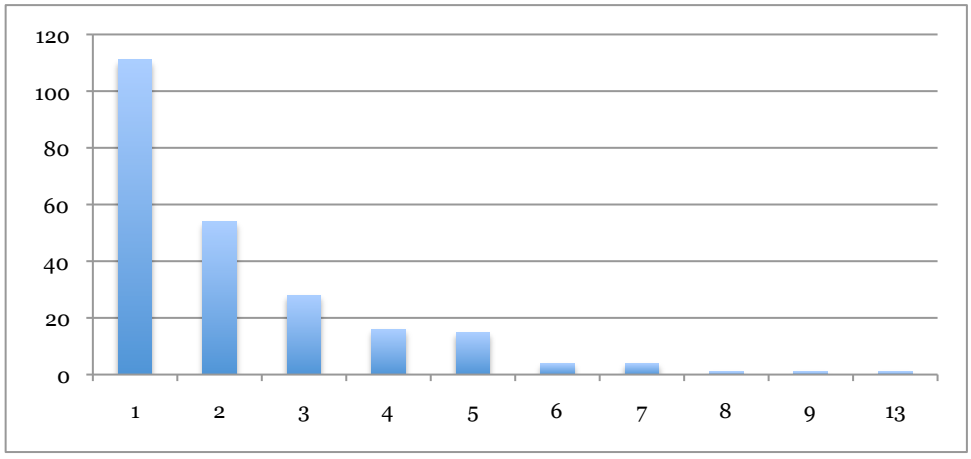
Figure 44: BSR participations by type of participant in FP6, priority area *Horizontal research activities involving SMEs*



Source: E-Corda; data treatment and calculations: Technopolis Group

Do the Baltic Sea regions co-operate more amongst themselves or seek partners from a broader geographic area? From the 255 projects where BSR participants were involved 524 times, there is only one project entirely composed of BSR partners (an ICT project with seven partners from DE8, EE, FI, LT, and LV). Moreover, 43% of the projects had a single BSR partner, 21% two and three projects had eight or more BSR partners (see Figure 45). More than 50% of the project partners were from the BSR in 17 projects.

Figure 45 : Number of BSR participants per project, FP6, priority area *Horizontal research activities involving SMEs*



Source: E-Corda, data treatment and calculations: Technopolis Group

In summing up, the analysis of FP6 participations tends to lead to similar conclusions as to those of the specialisation analysis, in that the thematic fields of BSR participation in the FP correspond to those identified as cross-region strengths. Equally, while there is a logic to co-operate with 'neighbours' working on the same or related topics, in a search for scientific excellence, this is less of a first choice criteria. Establishing 'joint programmes' where BSR Member States pool national funds and launch common calls for proposals for R&D projects could help strengthen current co-operation patterns.

7. Conclusions and recommendations

7.1 Conclusions

The following four main conclusions are derived from the study

Innovation performance in the Baltic Sea Region is far from homogenous a fact that needs to be acknowledged in planning transnational co-operation

Innovation performance and opportunities: common challenges, diverse strengths

The Baltic Sea Region as a macro-region is a sub-set of the diversity of innovation potential that can be found in the EU as a whole. The BSR includes areas with widely varying levels of economic development and innovation potential. This diversity of regional potential exists not only between countries (the three Baltic States and the northern Polish regions versus the Nordic countries) but also nationally. The two German regions, for instance, are comparatively weak performers from a national perspective. Equally, not all regions in the 'innovation leaders' are 'equal', for instance, while the Finnish capital region is a European 'powerhouse', Eastern Finland lags well down the European regional innovation scoreboard.

A BSR research and innovation area is unlikely to be achieved without much more developed transnational 'institutions'

This fact appears to be less well reflected in the strategic foundations of the Baltic Sea strategy and in transnational co-operation as promoted to date. Moreover, while the Nordic countries have been able to develop and pursue jointly the concept of the Nordic research and innovation area (NORDIA), the development of a Baltic Sea research and innovation area will be a considerably greater challenge without the same level of sophistication or longevity of transnational 'governance structures' as exists amongst the Nordic countries.

Unbalanced efforts to focus and specialise innovation policies

The review of innovation strategies and policies round the BSR provides evidence of a considerable effort at both national and regional levels to develop tailored research and innovation policies responding to specific strengths and weaknesses in the business and higher education and research sectors. The mapping of policy priorities highlights a number of key areas where stakeholders consider available funding should be focused, including:

- ICT
- Life science (notably biotechnology)
- Healthcare (and 'wellness') services:
- Agro-food
- 'Cleantech' (notably in Denmark and Finland);
- Energy (notably renewables) (with some overlap with cleantech field)
- Materials (ranging from nanotech, through plasma to more traditional materials)

Regional innovation strategies have adopted a specialisation agenda, but the level of sophistication varies markedly between the 'north-west' and 'south-east' rims of the Baltic Sea.

However, in a number of cases, the policy prioritisation is more 'on paper' than pursued in an effective operational manner. Equally, there is an imbalance between a more in-depth evidence based understanding of specialisation strengths in the Nordic regions (and to some extent the German regions) and a more nascent effort to focus funding in the Baltic States and Polish regions.

A second issue is that while the mapping highlights many similar areas of policy specialisation across the BSR regions, the specific focus in each region may be rather different (e.g. in the materials field ranging from smart textile to plasma, or between blue, white and red biotech).

A macro-region with many talents but a lack of critical mass

The organisational mapping identified 490 **main** organisations active in the field of innovation or an average of 20 per BSR region. The sheer number and diversity of organisations present even in the smaller (in population terms) Member States or regions is impressive. Moreover, the study highlights a well-developed 'tradition' of broad-based regional partnership driving innovation developments notably in the three Nordic States.

Yet the flip side of the coin is that this 'multiplication' of organisations may be at the same time an inherent weakness. Somewhat bluntly, does a macro-region with a population of around 37m people need 80 plus science parks, 200 plus universities, 200 plus clusters, etc. Or to put the question in a more sophisticated manner, even if there is a 'proximity matters' argument for multiplying the number of 'innovation intermediaries' are they able to offer the scope, quality and depth of services required to support businesses to innovate or to educate and train creative people ?

The BSR is rich in 'innovation organisations', but the risk of duplication of effort and fragmentation of capacity weakens the potential of the macro-region.

From a BSR strategic perspective this should not imply a top-down 'rationalisation' but rather the need to develop even more structured transnational co-operation in order to avoid a further phase of multiplying organisations that involve budgetary commitments from national, regional or EU funds. In all points of the triple helix (business, academic-research and government), a strategic reflection is needed on how to improve knowledge on what exists and guarantee access to pre-existing expertise and innovation infrastructures in the BSR. Examples from both within the region (e.g. the BONUS programme) and further afield could be used to inspire future action.

The Structural Funds are a major contributor to BSR innovation policy but are not yet 'levelling the playing field'.

During the 2007-13 period, the Structural Funds are investing close to €5.5 billion in support of research, technological development and innovation (RTDI) across the 25 BSR regions. Close to 40% of this total is allocated to Estonia, Latvia and Lithuania and a further 28% of the total is invested in the three Polish Baltic Sea regions. In terms of the focusing of this funding, 62% of investment in research centres and a similar share of investment in developing human potential for research and innovation is allocated to the three Baltic States. Close to 50% of ERDF investment in favour of research infrastructure is concentrated in three 'regions' out of 25 round the BSR (Mecklenburg-Vorpommern, Estonia and Lithuania). This concentration of funding represents a massive boost to the research and innovation systems of the 'catching-up' countries and regions concerned.

The Structural Funds are investing €5.5 billion in research and innovation heavily concentrated on the weaker innovation performers in the BSR.

Clearly, the importance of the Structural Funds varies both, from a budgetary and strategic orientation perspective, across the BSR. In Member States with regions eligible for support under the Convergence Objective (Estonia, Germany, Latvia, Lithuania, Poland) the share of the ERDF in total government expenditure on RTDI is considerably higher than in the eligible regions (Denmark, Germany, Finland and Sweden) for the Regional Competitiveness and Employment objective. Equally, in the two larger Member States (Germany and Poland) account must be taken of 'multi-level governance' context with both regional policy measures and national (operational) programmes intervening.

In both budgetary and strategic terms the Structural Funds are extremely significant in Estonia, Latvia, Lithuania and the Polish regions. They represent the vast-majority of public RTDI funding in these countries. As noted earlier, these are equally the countries for which catching up on innovation is a key element for securing future competitiveness. However, the rate of implementation is rather slow with limited results to report to date according to interviewees. Moreover, while in absolute terms for the countries concerned the funding is considerable, in relative (per capita) terms the Structural Funds contribution barely influences the 'innovation investment' gap between the Nordic and the other less-developed regions round the Baltic Sea. At best

The investment while considerable will at best 'level the playing' field in a few specialised fields of business innovation or academic research.

the longer run gains will help the Polish regions and Baltic States to balance the playing field in a few selected niche' in terms of quality and excellence of R&D and innovation activities enabling them to co-operate as 'equals' with Nordic partners.

In the Nordic countries, although in comparative terms, Structural Funds are a much more marginal share of innovation policy funding, they are seen as providing the resources for 'ground-breaking' new ideas and as 'fundamental and necessary in early phase of new developments'. Moreover, they often leverage other public-private funds into innovative platforms. The lessons of Structural Funds programming from the 'more advanced BSR regions, highlight 'mistakes' that need to be avoided in the current convergence regions, namely a focus on developing a first class infrastructure, e.g. in the German region of Mecklenburg-Vorpommern 'most research buildings' received ERDF support, but stakeholders noted that more attention should have been paid at an earlier stage to developing competitive R&D activities.

Transnational co-operation that is ad hoc and 'project-based' with limited synergies with regional or national strategies.

The interviews with stakeholders carried out highlight that while they recognise the validity of the logic behind co-ordinating efforts in favour of upgrading research and innovation potential at the Baltic Sea in practice this has proved difficult:

There is little or no integration of a transnational Baltic Sea dimension in national and regional programmes.

- National and regional operational programmes were designed without any (significant) thought to integrating national investments in a transnational framework;
- Measures and investments were decided before the EUSBSR was adopted and it proved difficult to align the national measures to the new strategy
- Most of the current co-operation is 'bottom-up', driven by bidders perception of how to align their interests with programme priorities and essentially 'project-based' (short-term, one-off). Hence, it does not lead (with some exceptions) to a structuring of capacity or permanent joint activities.
- In general, stakeholders find it more effective to develop stronger bilateral (cross-border or focused co-operation between a limited number of organisations) links than platforms that cover the entire BSR.

Without EU funding programmes the level of co-operation amongst the BSR would be much more limited.

The evidence suggests that without EU funding programmes in place the level and intensity of co-operation across the Baltic Sea region would be limited at best. At the current time, the co-operation is also largely 'public sector' driven and more account could be taken of how to build on pre-existing co-operation (business supply chains or thematically focused research and innovation platforms with a business or societal driven demand).

In the field of research and innovation co-operation funded by EU programmes (INTERREG, Baltic Sea programme, ERANET, etc.) the patterns of co-operation do suggest that a number of common themes are a focus of interest of Baltic Sea partners, notably: environment and sustainable development, ICT and life sciences.

Stakeholders interviewed underlined that the flagship projects of the EUSBSR could provide a new more structured framework. To date the most developed of the five flagship projects is the BSR Stars project which draws on a decade or more of cluster related co-operation, underlining the rationale to build on upon pre-existing networks.

7.2 Recommendations: a future role for transnational co-operation in supporting Baltic Sea innovation policies

A strong rationale for increased co-ordination of innovation strategies and 'joint programming' in a number of fields

The study findings suggest that there are options for further integration and co-development of innovation strategies and policies in the Baltic Sea region in at least five fields. To some extent, our findings confirm the orientation of the flagship projects of the EUSBSR, however, some additional options and some issues requiring further attention are also raised.

Macro-region clusters and 'competence centres'

The most developed of the EUSBSR flagship projects under priority 7 (innovation) is the BSR Stars project. The findings of the study tend to confirm the rationale for a more structured and strategic programming driven approach to 'cluster' co-operation in the Baltic Sea region. However, there is a need to take into account the differing levels of development and the different competitive advantages of the clusters around the Baltic Sea if not there is a risk that the initiative simply reinforces existing disparities pulling resources towards the strongest clusters.

In addition, the need for supporting a strong long-term structured co-operation between regional 'competence centres' (business-academia R&D consortia) could be investigated. Most nations round the BSR now have such competence centres and many operate in similar or potentially complementary fields, greater integration of market-led R&D would be beneficial. This could lead to triple helix or business-industry platforms in specific key technologies as identified in the mapping of the study.

A Baltic Sea Fund for financing of innovative enterprises

Recent Nordic wide studies on early-stage funds for young innovative enterprises have underlined that current early-stage and seed-funds are sub-critical even in Denmark, Finland and Sweden. Whilst the German regions can draw on a larger national financial sector, their weaker innovation profile does not necessarily make them first priority for national funds. The Polish regions and Baltic States are experimenting with various forms of funding for early stage firms, however, the deal flow is not sufficient in these regions to support the minimum scale for a viable early-stage fund.

Similarly, innovative public procurement (another option for promoting the development of new, technology based firms) is still only at the very initial stages even in the three Nordic countries. The opportunities for developing BSR procurement platforms giving groups of local and regional authorities more capacity to source innovation solutions from young innovative firms in fields such as cleantech or renewable energies should be explored.

In both these areas, there is a real rationale for extending Nordic efforts to create even greater critical mass and develop expertise across the entire BSR. Future EU (ERDF and EIB) support for early-stage funding should be made conditional on regional and national funds not being restricted to investing in 'local companies' and on the linking or merging of sub-critical national funds (eventually be through a BSR Fund-of-Funds). The Danish experience, where local Innovationsmiljøer (incubators) invest initial seed capital, up to de minimis levels, with follow on funding provided by the national early stage fund (Vækstfonden) could be a model for developing similar tight links between incubators and S&T parks and investors at BSR level.

An open access network of Baltic Sea research infrastructures

The study underlines that current efforts to develop a strategic approach to investments in research infrastructures are piecemeal and sub-optimal in the context of the ESFRI and the specific priorities of the Baltic Sea region. The level of

sophistication and preparedness varies widely from the Nordic countries own national plans and Nordic wide coordination to more 'rudimentary' and inadequately defined priorities in other regions. The experience to date of investment of ERDF funds in research infrastructures in the Baltic States, for instance, suggests that investment decisions are driven first and foremost by institutional priorities (universities). Open access plans aimed at ensuring optimal use of the infrastructure or equipment are considered as 'administrative requirements' rather than real business plans providing a basis for revenue generating or cost-sharing activities.

Notably in the BSR regions eligible for ERDF funding under the Convergence objective, the current focus is on 'catching up' on several decades of under-investment in building and equipment rather than on structuring investments so as to complement available infrastructures elsewhere in the macro-region. Hence, somewhat bluntly, the priority seems to be to maximise square metres of lab space rather than to use available funds to create the maximum access to infrastructures for researchers and companies.

In this area, there is need for a stronger 'oversight' by the European Commission (plus EIB) to avoid dispersion of funding and duplication of infrastructure or equipment investments. Pre-conditions for all future ERDF co-financed investments in research infrastructure or major elements of research infrastructure should be a) international peer-reviewed regional or national research infrastructure plans explaining how proposed investments will ensure a clear synergy with ESFRI and generate identifiable 'value added' compared to pre-existing infrastructure in neighbouring Baltic Sea regions b) 'open access business plans' proving, based on a market survey, demand from not only national but also other BSR researchers/businesses for buying time or sharing facilities.

From the Commission's side, the need to review ERDF rules on revenue generation so as not to discourage efforts to make R&D centres 'self-financing' and bring rules on eligibility of operating costs into line with those of the Framework Programme for research should be a priority.

Joint programming rather than project based funding of BSR research and innovation programmes

In the period since 2004, the development of plans for joint programming in the field of research and innovation through ERANETS, etc. and the efforts to develop various Baltic Sea region networks through ERDF funded transnational projects has created a basis for a new programmed approach that is structured around longer-term research and innovation priorities rather than 'networks and projects'.

Hence, the study recommends a shift away from a 'bottom-up' project based funding. Rather, available funds (national budgets, ERDF/ESF, other EU or Nordic funding streams) could be structured into a limited number of three to four strategic Baltic Sea region research and innovation funding programmes.

In addition to work under existing ERANETS to develop joint programmes, models that could inspire such developments are the Nordic Top-Level Research Initiative (http://www.nordforsk.org/en/programs/programmer/toppforskningsinitiativet) or national models including from outside the BSR region, such as the Scottish Research Pools (http://www.sfc.ac.uk/research/researchpools/researchpools.aspx).

The need for a BSR Mobile Expertise programme

A fifth area where more could be done to exploit complementarities and synergies is to enhance access to expertise in emerging or advanced technologies. The organisational mapping underlined that there is a significant range of expertise in various technology fields and in terms of innovation advisory services. However, it is unlikely that most of the regions or smaller member states around the BSR can mobilise 'locally' all expertise required by innovative businesses. Equally, a lot of (ESF) funding is being channelled into improving higher educational (doctoral schools, innovative teaching

methods, mobility schemes, etc.) and vocational training systems. Scope for synergies exist and are not yet exploited adequately.

Possible examples of actions could include:

- Enhanced efforts to develop Baltic educational (doctoral schools, etc.), mobility programmes, or life long learning programmes in priority fields (ESF co-financed actions);
- Pooling expertise available to S&T parks, centres and incubators, etc. through a BSR Innovation Advisory network potentially linked to an innovation vouchers scheme (ERDF co-financed actions).

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Appendix A Relevant literature

A.1 Business clusters and scientific and technology specialisation

- Sectoral Innovation Watch
  - Europe Innova [EI] (CIP): http://www.europe-innova.eu
  - European Cluster Observatory http://www.clusterobservatory.eu
- Monitoring European Trends in Social Science and Humanities (METRIS) http://www.metrisnet.eu/
- Exploring regional structural and S&T specialisation: implications for policy. Regional Key Figures of the European Research Area Booklet 2008. Prepared by Dr. Viola Peter Technopolis Group and Rainer Frietsch, Fraunhofer ISI
- Regional Innovation Scoreboard. Hugo Hollanders (MERIT), Stefano Tarantola and Alexander Loschky (JRC) (December 2009)

A.2 Organisational mapping

- BONUS Baltic Organisations Network for Funding Science EEIG http://www.bonusportal.org/
- International Associations of Science Parks http://www.iasp.ws/publico/intro.jsp
- ERA-NETs http://netwatch.jrc.ec.europa.eu/
- INNO-Policy Trendchart http://www.proinno-europe.eu/trendchart
- ERAWATCH http://cordis.europa.eu/erawatch/index.cfm
- Regional Innovation Monitor http://www.rim-europa.eu/

A.3 Transnational co-operation in the Baltic Sea Region

- Baltic Sea Region Programme 2007-2013 http://eu.baltic.net
- Nordic R&D collaboration at EU level: NORDERA. IPTS (September 2010)
- Baltic Partnerships: Integration, Growth and Local Governance in the Baltic Sea Region. OECD (April 2007)
- Creating links in the Baltic Sea Region by Cluster cooperation- BSR Innonet: follow-up report on clusters pilots. Karin Nygård Skalman, Anna Zingmark (VINNOVA) (April 2010)
- FP7 eCORDA database (RTD-FP7)
- Interreg IV C – subtheme "Innovation, Research and Technological Development" (ERDF) http://i4c.eu/
- INTERREC IV C Interregional Cooperation - First collection. Joint Technical Secretariat of the INTERREC IV C European Commission (July 2009)
- INTERREC IV C Interregional Cooperation - Second collection. Joint Technical Secretariat of the INTERREC IV C European Commission. (June 2010)
- Eurada (2010) Mapping of INTERREC IV C (Subtheme " Innovation, Research and Technological Development"), Regions of Knowledge and Europe Innova Project Partners.
- Eurada (2010) Results of the experiment in programme-level capitalisation on INTERREG IVC projects in the subtheme innovation, research and technology development.

A.4 Assessment of ERDF contribution

- ERAWATCH analytical country reports (September 2009)
- Assessment of the impact of the Regions of Knowledge (ROK) programme. Technopolis Group for Directorate-General for Regional Policy (ongoing)
- Ex-post assessment of regional programmes of innovative actions. Technopolis Group for Directorate-General for Regional Policy (December 2010)
- Strategic Evaluation on innovation and the knowledge based economy in relation to the 2007-13 Structural Funds period. Technopolis Group for Directorate-General for Regional Policy (2006). Technopolis Group

Appendix B Guideline for interviews with key stakeholders

B.1 Guideline for interviews with key stakeholders

1. Background and context

Name, organisation, position and contact details (minimum email address) of respondent.

Please explain briefly the role of your organisation in the regional and/or national and innovation system ? To what extent have you or your organisation been involved in Baltic Sea region (BSR) co-operation in the field of innovation ?

2. Organisational mapping

Aside from your own organisation, which are the five main institutions within the research and innovation system in your country/region? Please comment on your knowledge of their involvement in BSR actions.

Name of organisation	Role	Website	Contact person & email	Active in BSR networks, etc.
(Name)	Policy making/ implementation/ cluster manager/ R&D performance/ advisory services	(http)	Name @	Yes/no/don't know
(Name)	Policy making/ implementation/ cluster manager/ R&D performance/ advisory services	(http)	Name @	Yes/no/don't know
(Name)	Policy making/ implementation/ cluster manager/ R&D performance/ advisory services	(http)	Name @	Yes/no/don't know
(Name)	Policy making/ implementation/ cluster manager/ R&D performance/ advisory services	(http)	Name @	Yes/no/don't know
(Name)	Policy making/ implementation/ cluster manager/ R&D performance/ advisory services	(http)	Name @	Yes/no/don't know

3. Innovation policy mapping and smart specialisation

Prior to the interview, the interviewee should be sent the results of the policy mapping for their region/country in order to allow them to comment on it.

Nb: If the respondent indicates that there are other strategy documents or key measures, these should be identified and added to the policy mapping: minimum information to collect: name, year (of publication/launch), organisation responsible, website/weblink.

To what extent does the table you received reflect the up to date situation in terms of :

- national/regional innovation strategies in favour of research and innovation
- the main innovation related policy measures ?

Definition of a smart specialisation strategy (SSS): "smart specialisation involves businesses, research centres and universities working together to identify a region's most promising areas of specialisation, but also the weaknesses that hamper innovation."

- To what extent is there an evidence based understanding of the scientific, technological or industrial specialisation in the region/country concept ?
- Does the current regional RTDI policy adequately respond to the regional specialisation or needs of specific key business sectors &/or has focused resources on a few key competitive areas ?
- To what extent does the current national/regional innovation policy target specific technologies, sectors (including services) or clusters ?

Nb: Areas of particular interest include: formation and development of clusters, innovation-friendly environment for business (in areas such as energy, IT, environment and forestry/wood), embedding lifelong learning in research and innovation, strengthening of research infrastructures and centres of competence, public procurement, use of ICT.

  - If yes, which fields/sectors/clusters are targeted by RTDI policy ?
  - How well do the prioritised fields corresponds to the scientific, technological and industrial strengths of your region/country ?
  - What share of RTDI funding is clearly thematically or sectorally focused?
- How well is the RTDI policy articulated with other policies (environment, education, ICT, transport, employment & social affairs, etc.)?
- How important is the ERDF (or ESF) contribution to supporting the implementation of research and innovation strategies/measures in your region/country? Have the Structural Fund programme helped to focus or target policy on specific strategic sectors or technology fields ?

4. Transnational cooperation (TC)

- How important is transnational or inter-regional funding at BSR level as a complement to national or regional funding measures ?
- Considering the main R&D competence centres and infrastructures in your region/country:
  - How well are they integrated in Baltic Sea Co-operation ?
  - Does the planning of investment in research infrastructure or new R&D centres take account of other existing R&D centres or infrastructures around the Baltic Sea in the same field ?
- How important are EU Structural Fund programmes (Interreg IV, Baltic Sea Region Programme 2007-13) in fostering RTDI related co-operation or the co-ordination of RTDI related investments (e.g. pooling of R&D infrastructures, sharing of expertise or joint funds for supporting high-tech start-ups, etc.)
- To what extent are EU funding instruments other than the Structural Funds important for supporting national/regional and/or BSR co-operation in the field of innovation ? For instance FP7, CIP, ERA-NET, INNO-NETS, JPIs) ?
- Is there a trend towards greater or less BSR co-operation ? and if so what factors influence the intensity of co-operation (lack of incentives, complexity of programmes, legal or administrative obstacles, difficulties to develop joint or inter-regional strategies, lack of knowledge/trust between potential partners, etc.)
- In your opinion, what are the future or unexploited opportunities for transnational co-operation in the field of RTDI in the BSR region?

5. Good practice and future options

- What are the current (or future expected) main outcomes/impact of ERDF funded RTDI measures in your region/country ?
- What lessons would you draw from the past/current experience and how can research and innovation (SS) strategies be improved in the future?
- Can you recommend any innovation measures from within your country/region that you deem to be working well/good practice?
- Are you aware of any good-practice examples of Baltic Sea region co-operation or co-ordination actions in the field of RTDI ?

B.2 Overview of interviews with key stakeholders

Name of interviewed	Organisation	Position	Team expert
Jari Romanainen	Tekes	Executive Director, Customerships	Alo Merilo
Virve Vimpari	European Commission	Desk Officer for Finland	Alo Merilo
Markku Wallin	Ministry of Employment and Economy of Finland	Permanent state undersecretary	Alo Merilo
Ilze Beināre	Ministry of Economics of Republic of Latvia	Head of Entrepreneurship Competitiveness Department,	Anete Vitola
Dace Ratniece	Ministry of Education and Science of Latvia	Head of Policy Coordination Department	Anete Vitola
Arina Andreičika	Ministry of the Environmental Protection and Regional Development of Latvia	Head of Development Instruments Department	Anete Vitola
Agnese Dagile	DG REGIO, European Commision	Desk Officer for Latvia	Anete Vitola
Dorota Kopeć	Marshal Office of Warmia and Mazury Voivodeship	Deputy Head of Department of Regional Policy	Jacek Walendowski
Izabela Mirotta-Murawsk,	Marshal Office of the Pomorskie Voivodeship	Head of Unit of Entrepreneurship and Innovation, Department of Economy	Jacek Walendowski
Gunnar Edlund	VINNOVA	Senior Advisor	Jakob Hellman
Marie-Louise Eriksson	Department of Economic Development & Innovation, Region Skåne	Business Development Manager	Jakob Hellman
Johan Holmberg	Swedish Research Council	Research officer, department of research funding	Jakob Hellman
Anders Olsson,	Region Värmland	Responsible "Innovative environments"	Jakob Hellman Peter Stern
Hans-Åke Persson, ,	Region Västra Götaland	Responsible Objective 3	Jakob Hellman Peter Stern
Christer Christensen,	Regional Growth, Ministry of Enterprise, Energy and Communication, Sweden	Senior Advisor	Jakob Hellman Peter Stern
Göran Brulin	*Swedish Agency* for Economic and Regional Growth	Senior Analyst and professor	Jakob Hellman Peter Stern
Lars Fernvall,	Swedish National Agency for Innovation Systems	Director, External Affairs,	Jakob Hellman Peter Stern
Dr Albertas Žalys	Ministry of Education and Science of Lithuania	Director, Department of Higher Education, Science and Technology,	Jelena Angelis
Johan Magnusson	DG REGIO, European Commision	Desk Officer for Lithuania	Jelena Angelis
Almantas Danilevičius	Ministry of Economy of Lithuania	Director of Innovation and Knowledge Society department	Jelena Angelis
Eugenijus Mačinėkas	Association Santaka Valley (Kaunas)	Director	Jelena Angelis
Wolfgang *Blank* Henner Willnow	*BioCon Valley*	CEO Senior Consultant	Viola Peter
Bernd Ross	Ministry of Science, Technology and	Head of Section: Policy issues university policy,	Viola Peter

	Transport of Land Schleswig-Holstein	academic planning, International, knowledge and technology transfer	
Kaarina Williams	Staatskanzlei Schleswig-Holstein	Coordinating transnational cooperation concerning the BSP	Viola Peter

Appendix C Results of analysis of policy databases

C.1 Baltic Sea research & innovation stakeholders and organisations in ERAWATCH-TrendChart and RIM databases

Geographical coverage	Name of the organisation
Denmark [DK]	Danish Agency for Science, Technology and Innovation
Etelä-Suomi [FI18]	Danish Council for Research Policy
	Danish Council for Strategic Research
	Danish Council for Technology and Innovation
	Danish National Advanced Technology Foundation
	Danish National Research Foundation
	GTS - Advanced Technology Group
	Ministry of Economic and Business Affairs
	Ministry of Science, Technology and Innovation
	Technical University of Denmark
	The Danish Council for Independent Research
	The Danish National Advanced Technology Foundation
	The Danish Technological Institute
	The growth fund
	The Prevention Fund
	Universities Denmark (former Danish Rectors' Conference)
	University of Copenhagen
	Centre for Economic Development, Transport and the Environment of Uusimaa
	Culminatum Innovation Oy Ltd
	Forum Virium Helsinki
	Lahti School of Innovation, Lappeenranta University of Technology
	Lahti Science and Business Park Ltd
	Regional Council of Päijät-Häme
	Uusimaa Regional Council
Germany [DE]	Federal Ministry of Economic Affairs and Technology
	Federal Ministry of Education and Research
Hovedstaden [DK01]	Biopeople
	Business Link Greater Copenhagen
	Capital Denmark Growth Forum
	Copenhagen Cleantech Cluster
	Danish Design Centre
	Innovation Center Copenhagen
	Medicon Valley Alliance
	Øresund Food
	Øresund IT
	ScanBalt
	Scion DTU
	Symbion
	The Capital Region of Denmark
Itä-Suomi [FI13]	Centre for Economic Development, Transport and the Environment of Pohjois-Karjala
	MikTech Ltd
	The Regional Council of Etelä-Savo
Länsi-Suomi [FI19]	Centre for Economic Development, Transport and the Environment of Pirkanmaa
	City of Tampere
	Council of Tampere region
	Jyväskylä Regional Development Company Jykes Ltd
	Regional Council of Central Finland
	Regional Council of South Ostrobothnia
Latvia [LV]	Association of Mechanical Engineering and Metalworking Industries of Latvia
	Association of Textile and Clothing Industry
	Business Innovation Center of Latvian Electronic Industry
	CONNECT Latvia
	Council of Higher Education
	Investment and Development Agency of Latvia
	Latvia Technology Park
	Latvian Academy of Sciences

	Latvian Council of Science
	Latvian Electrical Engineering and Electronics Industry Association
	Latvian Information and Communications Technology Association
	Latvian IT Cluster
	Latvian Land and Mortgage Bank
	Latvian Rectors' Council
	Latvian Space Technology Cluster
	Latvian Technological Center
	Latvian technological parks, centers and business incubators association
	Life Science Cluster of Latvia
	Ministry of Economics
	Ministry of Education and Science
	Ministry of the Environmental Protection and Regional Development
	National Development Council
	Ogre Business and Innovation Incubator
	Patent Office of the Republic of Latvia
	Riga City Council City Development Department
	Riga Technical University
	State Education Development Agency
	State Regional Development Agency
	The Association of Latvian Chemical and Pharmaceutical Industry
	The Latvian Federation of Food Enterprises
	University of Latvia
	Ventspils High Technology Park
Lithuania [LT]	Lithuanian University of Agriculture (LŽŪU Science and Technology Park)
	'Technopolis' Science and Technology Park
	Agency for International Science and Technology Development Programmes in Lithuania
	Alytus Regional Development Agency
	Ignalina NPP Region Business Incubator
	Ignalina Nuclear Power Plant Regional Development Agency
	Institute of Botany
	Institute of Geology and Geography
	Institute of Hygiene
	Integrated Maritime Science, Business and Education Centre (Valley)
	INVEGA
	Invest Lithuania
	Kaunas Chamber of Commerce, Industry and Crafts
	Kaunas High-Tech and Information Technology Park
	Kaunas Regional Development Agency
	Kaunas Regional Innovation Centre
	Kaunas University of Technology
	Kazlu Rudos Business Incubator
	Klaipėda Chamber of Commerce, Industry and Crafts
	Klaipeda Economic Development Agency
	Klaipeda Science and Technology Park
	Klaipeda University
	Knowledge Economy Forum
	KTU Regional Science Park
	Laser and Light Science and Technology Association
	Lithuanian Veterenary Academy
	Lithuanian Business Support Agency
	Lithuanian Energy Institute
	Lithuanian Innovation Centre
	Lithuanian Institute of Agrarian Economics
	Lithuanian State Science and Studies Foundation
	Lithuanian University of Agriculture
	National Centre for Technological Platforms
	National Regional Development Agency
	Nemunas Valley
	NorthTown Technology Park
	Panevezys Chamber of Commerce, Industry and Crafts
	Panevezys Science and Technology Park
	Santaka Valley
	Siauliai Business Incubator
	Siauliai Chamber of Commerce, Industry and Crafts
	Siauliai Regional Development Agency
	Siauliai University
	Sunrise Valley
	Telsiai County Business Incubator

	The Lithuanian Academy of Science
	The Republic of Lithuania Ministry of Economy
	The Republic of Lithuania Ministry of Education and Science
	The Research Council of Lithuania
	Utenos Regional Development Agency
	Vilnijos Business Incubator
	Vilnius Chamber of Commerce, Industry and Crafts
	Vilnius Gediminas Technical university
	Vilnius Santara Valley
	Vilnius University
	Visoriai Information Technology Park
	Vytautas Magnus Univeristy
MECKLENBURG-VORPOMMERN [DE8]	Max Planck Institute for Plasma Physics
	BioCon Valley
	Biotechnikum Greifswald
	Campus Plasmamed
	Equity Funds for SMEs (mutual institution of local banks)
	Federal State Institute for Public Funding
	Fraunhofer Institute for Computer Graphics Research (IGD-R)
	Guarantee Bank Mecklenburg-West Pomerania
	Hanseatic Institute for Entrepreneurship and Regional Development (HIE-RO)
	Institute for Technological Consulting
	Leibnitz Institute for Catalytsis (LIKAT)
	Leibniz Institute for Plasma science and technology
	Ministry for Education, Science and Culture of Mecklenburg-West Pomerania
	Ministry of Economy, Labour and Tourism Mecklenburg-Vorpommern
	Research Association Mecklenburg-Vorpommern
	Technology Centre of Western Pomerania
	University of Greifswald
	University of Rostock
	Steinbeis-Transferzentrum Technologiemanagement Nordost
	ATI Küste GmbH
Mellersta Norrland [SE32]	Åkroken Science Park
	Business Incubator Östersund
	County Administrative Board of Jämtland
	County Administrative Board of Västernorrland
	Fiber Optic Valley
	Mid Sweden University
Midtjylland [DK04]	Agro Business Park
	Agro Food Park
	Business Link Central Denmark
	Development Centre UMT
	Growth Forum Central Jutland
	INCUBA Science Park
	Innovation Lab
	Innovation Network for Biomass
	Østjysk Innovation
	Region Central Denmark
	TEKO
Nordjylland [DK05]	Aalborg University
	BioMed Community
	BrainsBusiness ICT NORTH DENMARK
	Business Link Northern Jutland
	Center for Sundhedsteknologi
	Northern Jutland Growth Forum
	NOVI Research Park
	Region of North Jutland
Norra Mellansverige [SE31]	BoomTown
	Borlänge Science Park
	Compare Karlstad Foundation
	Dalabit
	Faxepark
	High Voltage Valley
	Inova
	Movexum
	Region Gävleborg
	Region Värmland
	Regional Cooperation Council of Dalarna
	Sandbacka Park
	Steel & Engineering

	Teknikdalen Foundation
	The Packaging Arena
	The Paper Province
	The technology park in Gävle
	Triple Steelix
Östra Mellansverige [SE12]	County Administrative Board of Södermanland
	County Administrative Board of Västmanland
	Create
	Idélab
	Mälardalen University
	Munktell Science Park
	Örebro Regional Development Council
	Östsam Regional Development Council
	Sörmland Regional Council
	The robot valley
	University of Örebro
	Uppsala BIO
	Uppsala Innovation Centre
	Uppsala Regional Council
	Uppsala University
	Västerås Science Park
Övre Norrland [SE33]	Acusticum
	Aurorum Business Incubator
	Aurorum Science Park
	Bpark
	County Administrative Board of Norrbotten
	Internetbay
	Luleå University of Technology
	North Sweden
	ProcessIT Innovations
	Region Västerbotten
	Solander Science Park
	The Norrland Fund
	Umeå Biotech Incubator
	Uminova Innovation
Pohjois-Suomi [FI1A]	Centre for Economic Development, Transport and the Environment of Pohjois-Pohjanmaa
	Council of Oulu Region
	Oulu Innovation Ltd
	The University of Oulu
Poland [PL]	Foundation for Polish Science
	Ministry of Economic Affairs
	Ministry of Science and Higer Education
	Polish Academy of Science
	Polish Agency for Enterprises Development
	Polish Business and Innovation Centres Association
	The National Centre for Research and Development
Pomorskie [PL63]	Baltic Centre for Biotechnology and Innovative Diagnsotics Ltd "BioBaltica"
	Baltic Eco-Energy Cluster
	Business Angel Seed Fund
	Centre of Maritime Technology
	Electrotechnical Institute Gdańsk Branch
	Gdańsk Construction Cluster
	Gdańsk University of Technology
	Gdynia Maritime University
	Institute of Hydroengineering of Polish Academy of Sciences
	Inveno Fund
	Maritime Institute in Gdańsk
	Marshal Office of the Pomorskie region
	Polish Federation of Apparel and Textile
	Pomerania Development Agency
	Pomerania ICT Cluster
	Pomeranian Science and Technology Park
	Regional Pomeranian Chamber of Commerce
	Sea Fisheries Institute in Gdynia
	Ship Design and Research Centre
	The Gdańsk Science and Technology Park
	The Szewalski Institute of Fluid-Flow Machinery (IMP)
	The University of Gdańsk

	Innovation Centre in Slupsk of the Polish Federation of Engineering Association - NOT
SCHLESWIG-HOLSTEIN [DEF]	Academy of Economics Schleswig-Holstein
	Business Development and Technology Transfer Corporation of Schleswig-Holstein GmbH
	European Forum for Telemedicine
	Fraunhofer Institute for Marine Biotechnology (EMB)
	Fraunhofer Institute for Silicon technology
	Guarantor Bank of Schleswig-Holstein
	Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research
	Innovation Foundation Schleswig-Holstein
	Investitionsbank Schleswig-Holstein (IB)
	Kiel Institute for the World Economy
	Leibniz Institute of Marine Sciences at the Christian-Albrechts Universität zu Kiel (IFM-GEOMAR)
	Lübeck University of Applied Sciences
	Luebeck Business Development Corp.
	Max Planck Institute for Evolutionary Biology
	Ministry for Labour, Social Affairs and Health - Schleswig-Holstein
	Patent Commercialisation Agency
	Prime Minister office of Schleswig-Holstein
	Research Centre Borstel, Leibniz-Centre for medicine and bio sciences
	State Ministry for Science, Economic Affairs and Transport of Schleswig-Holstein
	University of Applied Sciences Flensburg
	University of Flensburg
	University of Kiel
	University of Luebeck
Sjælland [DK02]	Business Link Sjælland
	Growth Forum Zealand
	Industrial Symbiosis
	Region Zealand
	Roskilde University
Småland med öarna [SE21]	Atrinova
	Energy Agency for Southeast Sweden
	Growth Gotland
	Kalmar Science Park
	Linnaeus University
	Municipality of Gotland
	Regional Council of Kalmar County
	Regional Council of Southern Småland
	Regional Development Council of Jönköping County
	Science Park Gotland
	Science Park Jönköping
	Science Park-systemet i Jönköpings län
	Sustainable Sweden Southeast
	The incubator in Kronoberg
	Videum Science Park
Stockholm [SE11]	County Administrative Board of Stockholm
	IVL Swedish Environmental Research Institute
	Karolinska Institutet Science Park (KISP)
	Kista Science City
	Maritime Forum
	Office of Regional Planning, Stockholm County Council
	Stockholm Business Region Development
	Stockholm Innovation & Growth (STING)
	SU Innovation
Suomi/Finland [FI]	CLEEN Ltd - The energy and environment strategic centre for science, technology and innovation
	FIMECC Oy Finnish Metals and Engineering Competence Cluster
	Forestcluster Ltd
	Ministry of Education
	Research and Innovation Council
	Sitra
	Strategic Centre for Health and Well-Being
	Technical Research Centre of Finland
	The Academy of Finland
	The Finnish Forest Research Institute
	The Finnish Funding Agency for Technology and Innovation

	The Ministry of Employment and the Economy
	TIVIT Oy
Sweden [SE]	Almi
	Industrifonden
	Innovationsbron
	Knowledge Foundation
	Ministry of Defence
	Ministry of Education and Research
	Ministry of Enterprise, Energy and Communications
	Swedish council for working life and social research
	Swedish Defence Materiel Administration
	Swedish Energy Agency
	Swedish Foundation for Strategic Research
	Swedish National Space Board
	Swedish Research Council
	The Swedish Governmental Agency for Innovation Systems
	The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning
Syddanmark [DK03]	AluCluster
	Business Link Southern Denmark
	Green Network
	IT Forum in South Denmark
	Mechatronics Cluster Denmark
	Plast Center Danmark
	Region of Southern Denmark
	Southern Denmark Growth Forum
	The innovation network RoboCluster
	The triange region
	University College Lillebælt
	University of Southern Denmark
Sydsverige [SE22]	Blekinge Business Incubator
	BoostHbg
	Ideon Innovation
	Ideon Science Park
	Krinova Science Park
	Lund University
	Medeon
	Media Evolution
	Medicon Valley
	Minc
	Mobile Heights Business Center
	NetPort.Karlshamn
	Region Blekinge
	Region Skåne
	Skåne Food Innovation Network
	TelecomCity
	University of Lund
Västsverige [SE23]	Automotive Sweden
	Brewhouse Incubator
	Business Region Göteborg
	Chalmers Innovation
	Espira Growth Center in Sjuhärad
	Gothia Science Park
	GU Holding
	Halland Regional Development Council
	IDC West Sweden
	Innovationsbron (West Sweden)
	Innovatum Technology Park
	Lindholmen Science Park
	MedCoast Scandinavia
	Region Västra Götaland
	Sahlgrenska Science Park
	Science Park Halmstad
	Smart Textiles
	SSPA Sweden
	University of Borås
	University of Gothenburg
Warminsko-Mazurskie [PL62]	Agro-food Cluster
	Centre of Green Technologies
	Centre of Innovation and Technology Transfer of Warmia and Mazury University

	Elblag Incubator of Modern Information Technologies
	Elblag Technology Park
	Innovation Centre in Bialystok of the Polish Federation of Engineering Association - NOT
	Marshal Office of Warmia and Mazury
	Podlaski Metalworking Vluster
	Polish Platform for Homeland Security - Modern Security (University of Bialostok)
	Regional Develoment Agency of Warmia and Mazury
	The City Commune of Elblag
	University of Bialostok
	University of Warmia and Mazury in Olsztyn
	Warmia & Mazury Chamber of Craft and Entrepreneurship
Zachodniopomorskie [PL42]	Amber Business Angel Network
	Association of Socio-Economic Initiatives
	Chamber of Craft Small and Medium Enterprises in Szczecin
	Innovation Centre in Koszalin of the Polish Federation of Engineering Association - NOT
	Koszalin University of Technology Science and Technology Park
	Marshal Office of the Westpomeranian Region
	Polish Entrepreneurs Foundation
	Polish Technology Platform 'Water Transport' New Szczecin Shipyard
	Pomeranus Seed Capital Fund
	Szczecińk Science and Technology Park
	Technical University of Koszalin
	Technology Park in Koszalin
	The University of Szczecin
	West Pomerania Economic Development Association
	Western Pomeranian Chemical Cluster "Green Chemistry"
	Westerpomerania University of Technology
	Westerpomerania Wood and Furniture Cluster
	Westpomeranian Agency for Regional Development
	Food Cluster
	ICT West Pomerania
Estonia [EE]	Archimedes Foundation
	Enterprise Estonia
	Estonian Academy of Sciences
	Estonian Development Fund
	Estonian Science Foundation
	Ministry of Economic Affairs and Communications
	Ministry of Education and Research
	Research and Development Council
	The Estonian Patent Office
	The Foundation for Lifelong Learning Development Innove
	Climate and Energy Agency
	University of Tartu, Office of Research and Institutional Development
	Technology and Innovation Centre at Tallinn University of Technology
	Estonian Chamber of Commerce and Industry
	Ambient Sound Investments (ASI)
	Estonian Institute of Innovation
	Tallinn University, Research and Development Office
	Lääne-Viru College, R&D Department
	Institute of Baltic Studies
	Estonian E-Health Foundation
	Tartu Biotechnology Park Innovation Centre Ltd
	Tallinn Science Park Tehnopol
	Tartu Science Park
	Tartu Centre for Creative Industries
	Baltic Innovation Agency
	NOW! Innovations
	Curonia Research
	Invent Baltics OÜ
	Estonian Health Technology Cluster
	Industrial Export and Innovation Cluster
	Competence Centre for Cancer Research
	Estonian Nanotechnology Competence Centre
	Competence Centre in Electronics-, Info- and Communication Technologies

C.2 Baltic Sea clusters organisations in the European Cluster Observatory

Geographical coverage	Name of the cluster
Denmark	Ã˜resund Environment Academy
	Ã˜resund Food Network
	Ã˜resund Science Region
	Alexandra Instituttet
	APEX
	Bio Med Community
	Biocenter East Jutland
	BioLogue
	BioMedico Forum
	BioTEAMSouth
	CenSec
	Center for Software Defined Radio
	Centre for Sub-Suppliers
	Centre of Health Technology
	Copenhagen Crossroads
	Cross-Border-Logistics
	Danish Fashion Insitute
	Danish Innovation Centre for Furniture and Woodvorking Industry
	Danish Knowledge Centre of Experience Economy
	Danish Maritime Authority
	Danish University Wind Energy Training
	Dansk Design Center
	Development Centre Aarslev
	Egion
	Environment Forum Funen
	Environment Network South
	Flagship Denmark
	Foodture
	Gate 21
	Green Centre
	Green Network
	Green Network South Jutland
	Hydrogen Innovation & Research Centre
	ICT Forum
	ICT North Denmark
	Industrial Design Centre
	Innovation Centre for Bioenergy and Environmental Technology
	IT City Katrinebjerg
	IT Forum TrekantomrÃ¥det
	IT Growth House 5th
	Key2Green
	Knowledge Centre for Food Development
	Knowledge Centre for Tourism and Experience Economy
	Knowledge Lab
	Maritime Development Center of EuropÃ©
	Medicon Valley Alliance
	Movie Funen
	Musicon Valley Denmark
	NorCOM
	Offshore Center Denmark
	Plastic Centre Denmark
	RoboCluster
	ScanBalt
	Seedland
	Sport Study South Funen
	Steel Centre
	TCM Denmark
	Teko
	The Danish Transport Academy
	The industrial symbiosis of Kalundborg
	The Interactive House
	The Maritime Growth Centre
	TrekantomrÃ¥det Transport Forum

Estonia	Competence Centre for Cancer Research
	Competence Centre of Electronics and ICT
	Estonian Biotechnology
	Estonian ICT Demo Center
	Tallinn Media Cluster
	Wood building cluster of Estonia
Finland	Association of Finnish Maritime Industries
	Cleantech Cluster
	ClimBus
	DENSY
	EduCluster Finland
	Embedded Systems
	Farma
	Finn-Medi Research
	FinNano
	Foodwest
	GIGA
	HealthBIO
	ICT Turku
	IMTEC
	Intelligent Machines
	Koneteknologiakeskus
	Lappeenranta Innovation
	Living Business
	Logicity
	MASINA
	Merinova Energy Technology & Economy
	Micropolis
	NewPro
	Nordite
	PrizzTech Materials Technology
	Sara
	Serve
	SymBio
	Tampere Region Centre of Expertise
	Technology Centre Teknia
	Teknia Agrobiotechnology
	The Nanotechnology Cluster Programme
	The TRIO Programme
	Tourism and Experience Management Competence Cluster
	Turku Touring
	Ubiquitous Computing Cluster Programme
	VAMOS
Latvia	Latvian IT cluster
Lithuania	Infobalt
	Lithuanian furniture cluster
	Sunrise valley
	Window to the Future
Lubuski	Lubuski Klaster Metalowy
Meclklenburg-Vorpommern	BalticNet-PlasmaTec
	BioCon Valley
	CELISCA
	KBR â€“ Biomaterials Rostock
	Kunststoffzentrum Westmeklenburg
	Maritime Allianz Ostseeregion
	Maritime Cluster in Mecklenburg-Vorpommern
	Nukleus
Pomorskie	Å»ywnoÅ›Ä‡ zÂ Pomorza
	BaÅ‚tycki Klaster Ekoenergetyczny
	GdaÅ„ska Delta Bursztynu
	Gdansk Building Cluster
	Klaster Biotechnologii, Farmacji iÂ KosmetykÃ³w
	Klaster turystyczny Bory Tucholskie (Touristic Cluster Tuchola Forest)
Schleswigh-Holstein	Center for Product Development
	Cross-Border-Logistics
	Hightech Itzehoe
	Maritime Cluster in Schleswig-Holstein
	MedRegio
	schiff-gmbh

	WT|SH
Sweden	Ã˜resund IT
	Ã˜resund Logistics
	Ã–stra SkÃ¥nes KonstnÃ¤rsgille
	Acusticum
	ADA Association for Design and Advertising
	Advantage Hardwood
	Aluminiumriket
	Automation Technology Cluster of West Sweden
	Automotive Sweden
	BioFuel Region
	BioMedley.com
	BIOMIME
	Biotech Valley
	Brewhouse Innovation
	CBioPT
	Center for Surface and Microstructure Technology
	Center of Visualization GÃ¶tebrg
	CERC
	CHARMEC
	CID
	Compare IT
	CPM
	CTT
	DalaBIT
	Fiber Optic Valley
	Film i VÃ¤st
	Filmpool Nord
	Future Position X
	GÃ¶teborgBIO
	HÃ¤lsans nya verktyg
	HÃ¤lsoteknikalliansen
	Heavy Vehicles
	High Temperature Corrosion
	HomeCom
	IDEA Plant
	Industri 45
	Industriellt Distrikt Skaraborg
	Innovation i GrÃ¤nsland
	Innovatum
	Internet Bay
	IUC Sydpoolen
	IUC Wermland
	KÃ¶ksriket
	Kalmar Bioscience
	KCEM
	Livets Nya Verktyg
	Livsmedel i VÃ¤st
	MÃ¶belriket Furniture Kingdom
	Maritime Forum
	Mat21
	MedCoast Scandinavia
	Microwave Road
	Nano Ã˜resund
	NIMED
	Packaging Mid Sweden
	PLUS
	Polymercentrum i Ã–stbo-VÃ¤stbo AB
	ProcessIT Innovations
	Processum
	ProNano
	PSCI
	PUCK
	Robotdalen
	Rock City
	S-SENCE
	SamvÃ¤te i VÃ¤st
	SkÃ¤rteknikcentrum
	SkÃ¥nes Livsmedelsakademi
	SNAP

	Soft Center Network Ronneby
	Subtopia
	Sustainable Sweden Southeast AB
	Sweden Logistics
	Teknocenter
	Telecom City
	Telematics Valley
	The Packaging Arena
	The Paper Province
	TrÃ¤centrum NÃ¤ssjÃ¶
	TrÃ¤riket
	TrÃ¤tÃ¥rtan
	Triple Steelix
	Union Wood
	Uppsala BIO
	VingÃ¥ker Energetic Science Park
	WURC
	yWood
Warminsko-Mazurskie	Klaster "Razem Ciepleja€
	Klaster ProducentÃ³w Okien i DrzwiÂ â€žMazurskie okna"

C.3 Policy documents and strategies in ERAWATCH-TrendChart and RIM databases

Regional coverage	Full title in English
Denmark [DK]	A Step Beyond - International Evaluation of the GTS institute system in Denmark (English documents)
	Action Plan for Construction
	Action plan of the Danish Council for Strategic Research - Research that counts
	Danish Council for Research Policy Annual Report 2005 - Research Policy Challenges
	Danish Council for Research Policy Annual Report 2006
	Denmark's National Reform Programme (2005)
	Denmark's National Reform Programme (2008)
	Denmarks National Reform Programme: First Progress Report Contribution to EUs Growth and Employment Strategy (The Lisbon Strategy)
	Education, Training and Networking for Entrepreneurship in Denmark 2008
	Entrepreneurship in the Regions in Denmark 2006
	Innovation Denmark 2007-2010
	Innovation Denmark 2007-2010 (english version)
	Innovation Denmark 2008
	Innovation Strategy for the Service Industry
	Inside Service Innovation - Challenging Policy (English document)
	Nordic Innovation Monitor 2009 (English document)
	OECD Entrepreneurship Review of Denmark
	Progress, Innovation and Cohesion - Strategy for Denmark in the Global Economy
	Public Research Commercialisation Survey (English document)
	Strategy for strengthened innovation in the public sector
	Strategy for the GTS network 2010-2015
	Strategy for the International Innovation Activities of the Enterprises
	The Industrial PhD - An effective tool for innovation and knowledge sharing (English document)
Estonia [EE]	Action Plan for Growth and Jobs 2005-2007. For implementation of the Lisbon Strategy
	Estonian Action Plan for Growth and Jobs 2008-2011 For implementation of the Lisbon Strategy
	Estonian National Development Plan for the Implementation of the EU Structural Funds. Single Programming Document 2004-2006
	Estonian Strategy for Competitiveness 2009-2011
	Knowledge-Based Estonia. Estonian Research and Development and Innovation Strategy 2007-2013
	Knowledge-based Estonia. Estonian Strategy for Research and Development 2002-2006
	National Strategic Reference Framework 2007-2013 and Operational Programmes
	Progress Report on the Action Plan for Growth and Jobs 2005-2007. For implementation of the Lisbon Strategy
Etelä-Suomi [FI18]	Competitiveness strategy of the Helsinki Metropolitan Area
	ERDF operational programme for Southern Finland
	Industry strategy of Varsinais-Suomi 2009
	Innovation Strategy of the Helsinki Metropolitan Area
	Innovation Strategy of Uusimaa Region
Germany [DE]	Bund-L‰nder-Agreement on the excellence initiative of the Federal and the L‰nder governements on supporting science and research at German universities
	Freedom for Research in the Humanities
	Higher Education Pact 2020
	Hightech Strategy for Germany
	Joint Initiative for Research and Innovation
	Nano Initiative Action Plan 2010
	National Reform Program of Germany - "Moving forward with innovation - promoting security with change - completing German unification"
	New Impulses for Innovation and Growth. 6 billion Euro programme for Research and Development
	Research and Innovation for Germany. Results and Prospects.
	Research, Innovation and Technological Performance. Report 2009.
	White Biotechnology - Chances for new Products and environmetally sound

	Processes
Hovedstaden [DK01]	Partnership for knowledge, growth and welfare – a business development strategy
	Regional Partnership agreement on growth and business development
	The road to a strong biotech cluster in the Capital region
Itä-Suomi [FI13]	Eastern Finland Programme
	ERDF operational programme for Eastern Finland 2007 - 2013
	The Innovation Strategy of Eastern Finland
	The Innovation Strategy of Etelä-Savo Region 2010 -2015
Länsi-Suomi [FI19]	ERDF operational programme for Western Finland
	Innovation strategy of Pirkanmaa region
	Joint Strategy for Innovation Activity 2010-2016
	The Regional Technology Strategy of Central Finland 2005 - 2015
Latvia [LV]	Economic Stabilisation and Growth Revival Programme of Latvia
	Guidelines for Development of Science and Technology for 20092013
	Latvian National Development Plan for 2007-2013
	Law on Research Activity
	National Strategic Reference Framework of Latvia 2007-2013
	Programme for Promotion of Business Competitiveness and Innovation for 20072013
	Sustainable Development Strategy of Latvia until 2030 (Latvia2030)
Lithuania [LT]	2010-2013 implementation plan of the Lithuanian innovation strategy 2010-2020
	Biomedical and Biotechnology Joint Research Programme
	Concept of the Establishment and Development of Integrated Science, Studies and Business Centres (Valleys)
	Economy support plan
	Engineering and Information Technologies Joint Research Programme
	General National Complex Programme
	General National Research, Science and Business Cooperation Programme
	High technologies development programme for 2007-2013
	Industrial biotechnology development programme for the year 2011-2013
	INNO-Policy TrendChart: Innovation Policy Progress Report - Lithuania
	Joint Research Programmes Preparation and Implementation
	Lithuanian Innovation Strategy 2010-2020
	Lithuanian Science and Technology White Paper Implementation Programme
	Long-Term Development Strategy of the State
	Long-Term Economic Development Strategy of Lithuania until 2015
	Material Sciences, Physical and Chemical Engineering Joint Research Programme
	National General Strategy: the Lithuanian Strategy for the use of European Union Structural Assistance for 2007-2013
	National Lisbon Strategy Implementation Programme for 2008-2010
	National programme on development of research, technologies and innovation in the space sector for 2010-2015
	Natural Resources and Agriculture Joint Research Programme
	Operational Programme for Economic Growth for 2007–2013
	Priority Trends for Scientific Research and Experimental Development in Lithuania
	Priority Trends for Scientific Research and Experimental Development in Lithuania for 2007-2010
	Researchers' career programme
	The Lithuania Long-Term Strategy for Research and Development
	The Programme for the Integrated Science, Studies and Business Centre (Valley) "Nemunas"
	The Programme for the Integrated Science, Studies and Business Centre (Valley) "Santaka"
	The Programme for the Integrated Science, Studies and Business Centre (Valley) "Santara"
	The Programme for the Integrated Science, Studies and Business Centre (Valley) „Saulėtekis“
	The Programme of the Integrated Science, Studies and Business Centre (Valley) for the Development of Lithuanian Maritime Sector
MECKLENBURG-VORPOMMERN [DE8]	ERDF operational program under the convergence objective, Mecklenburg-West Pomerania 2007-2013
	European and Baltic Sea report 2009/2010
	Guidelines for technology policy Mecklenburg-West Pomerania
	Joint Federal-Federal State Agreement "Improvement of regional economic structure" in Mecklenburg-West Pomerania
Mellersta Norrland	Growth Programme Västernorrland 2008-2010 with perspective on 2013 – A

[SE32]	sector programme based on the vision Västernorrland 2010
	Regional Development Strategy for Jämtland´s County
	Regional Structural Funds Programme for Regional Competiveness and Employment in Middle Norrland– 2007-2013
Midtjylland [DK04]	Innovation and growth – a business development strategy
	Innovation Strategy 2008-2010 Central Jutland
	Regional Partnership agreement on growth and business development
Nordjylland [DK05]	Growth and Balance – a business development strategy
	Growth Forum North Jutland annual report 2009
	Regional Partnership agreement on growth and business development
Norra Mellansverige [SE31]	Possibilities close to you – Regional Development Programme Gävleborg 2009-2013
	Regional Structural Funds Programme for Regional Competiveness and Employment in North Middle Sweden – 2007-2013
	The Dala Strategy - With common efforts towards 2016
	Värmland is flourishing and knows no bounds – Regional Development Program 2009 - 2013
Östra Mellansverige [SE12]	Enterprising Västmanland – Regional Growth Progamme for Västmanland 2009-2013
	Growth Programme for the Economic Development of the Örebro Region 2009-2013
	Regional Action Plan for Innovations - Örebro Region
	Regional Structural Funds Programme for Regional Competiveness and Employment in East Middle Sweden – 2007-2013
	The Sörmland Strategy – a strategy for sustainable growth and development in Sörmland
Övre Norrland [SE33]	R & D Co-operation in the EU-arena, between Västerbotten County and Norrbotten County
	Regional Growth Programme for Norrbotten
	Regional Structural Funds Programme for Regional Competitiveness and Employment in Upper Norrland – 2007-2013
	Västerbotten County - Regional Growth Strategy 2010
Pohjois-Suomi [FI1A]	ERDF operational programme for Northern Finland
	Oulu inspires - Innovation Strategy 2007 - 2013
Poland [PL]	Act of 30 April 2010 on the Principles of Financing Science
	Act on some forms of supporting innovation activities
	Building upon knowledge: Science reform for Poland's development
	National Reform Programme for 2008-2011
	National Scientific Research and Development Programme
	Operational Programme Human Capital, 2007-2013
	Operational Programme Innovative Economy, 2007-2013
	Partnership for Knowledge
	Poland 2030 - Development Challenges
	Science Strategy in Poland until 2015
	Strategy for the development of Higher Education in Poland until 2020
	The Implementation Document of the National Reform Programme 2008-2011
Pomorskie [PL63]	Complement Document of the Pomorskie Regional Operation Programme for years 2007-2013
	Regional Development Strategy
	Regional Innovation Strategy
SCHLESWIG-HOLSTEIN [DEF]	Baltic Sea Report 2010
	ERDF operational programme under the competitiveness and employment objective, Schleswig-Holstein 2007-2013
	Programme for the Future of the Economy - Schleswig-Holstein
	Programme for the Future of the Labour Market - Schleswig-Holstein
	Report of the budget structure commission
Sjælland [DK02]	A new Strategy for region Zealand
	Growth Forum Zealand's business development strategy
	Regional Partnership agreement on growth and business development
Småland med öarna [SE21]	A future of opportunities - The Regional Development Programme up to 2020, Jönköping County
	Meeting place Södra Småland – Regional Development Programme, a strategy for Kronoberg county
	Regional Structural Funds Programme for Regional Competitiveness and Employment in Småland and the Island – 2007-2013
Stockholm [SE11]	Regional Strategy for Entrepreneurship in Stockholm County 2007-2013
	Regional Structural Funds Programme for Regional Competitiveness and Employment in Stockholm – 2007-2013
	RUFS 2010 - Regional Development Plan for the County of Stockholm

SUOMI / FINLAND [FI]	National Innovation Strategy
Suomi/Finland [FI]	Education and Research 2003-2008: Development Plan
	Education and Research 2007-2012: Development Plan
	Evaluation of the Finnish National Innovation System
	Government Programme of Prime Minister Matti Vanhanen's second Cabinet
	Government Resolution on the Structural Development of the Public Research System
	Government statement on Innovation Policy
	Government Strategy Document 2005
	Government Strategy Document 2007
	Knowledge, innovation and internationalisation
	Review2008
	Science, Technology, Innovation
	Strategy for the internationalisation of Finnish higher education institutions
	The Lisbon Startegy for Growth and Jobs - The Finnish National Reform Programme 2005-2008
	The Lisbon Strategy for Growth and Jobs - The Finnish National Reform Programme 2005 - 2008: Annual Progress Report (2006)
	The Lisbon strategy for growth and jobs 2008-2010 - The Finnish National Reform Programme
Sweden [SE]	A national strategy for regional competitiveness, entrepreneurship and employment 2007-2013
	Financing strong research environments - an international prospect
	Government bill 2004/05:80 Research for a Better Life
	Innovative Sweden - A strategy for growth through renewal
	New World - New University
	Sweden's reform programme for growth and employment Skr. 2005/06:23
	VINNFORSK - VINNOVA's proposal to improved commercialisation and increased returns in growth of research investments at universities
Syddanmark [DK03]	Business development strategy 2007-2012
	Growth Account: Growth and prosperity
	Regional Partnership agreement on growth and business development
Sydsverige [SE22]	Growth Blekinge - Regional growth programme for Blekinge 2008-2013
	Regional Development Programme for Skåne 2009-2016
	Regional Structural Funds Programme for Regional Competitiveness and Employment in Skåne-Blekinge 2007-2013
	Skåne´s Innovation Capacity - An action plan for a more innovative Skåne
Västsverige [SE23]	Growth Programme for Halland 2007-2010
	Growth Programme for Västra Götaland 2008-2013
	Regional Policy for global impact – The RTD & Innovation strategy of Region Västra Götaland Sweden
	Regional Structural Funds Programme for Regional Competitiveness and Employment in West Sweden – 2007-2013
Warminsko-Mazurskie [PL62]	Analysis of Implementation of the RIS in Warmia and Mazury
	Complement Document of Warmia and Mazury Regional Operational Programme (2007-2013)
	Regional Development Strategy
	Regional Innovation Strategy until 2020
Zachodniopomorskie [PL42]	Complement Document of Westpomeranian Voivodship Regional Operational Programme (2007-2013)
	Development Strategy of the Westpomeranian Voivodship
	Regional Innovation Strategy in Westpomeranian Voivodship

C.4 Research and innovation measures in the RIM database

Country/Region	Title of Measure	Duration: From	Duration: To
Mecklenburg-Vorpommern [DE8]	Patent and License Fund Mecklenburg-West Pomerania	2003	
	Promotion of science and research	1999	
	Promotion of scientific excellence in Mecklenburg-West Pomerania	2006	2010
	Support of research, development and innovation	2008	2013
	Support of technology-oriented networks	2008	2013
	TIP - The new programme for new business founders (transparent innovative tailored)	2007	
	VentureCup-MV 2011	2002	
Schleswig-Holstein [DEF]	Norgenta Life Science Agency	2004	2004
	Seed- and Start-Up-Fund Schleswig-Holstein	2007	2010
	Support for Environmental Innovations (UI)	2008	2013
	Support for Research, Development and Innovation in Business Enterprises (BFEI)	2009	2013
	Support for Research, Development and Technology Transfer (FET)	2008	2013
	Support Programme Higher Education, Business, Transfer III (HWT III)	2010	2012
Hovedstaden [DK01]	Growth Forum Initiatives (Capital region)	2007	
Sjælland [DK02]	Growth Forum Initiatives (Zealand region)	2007	
Syddanmark [DK03]	Growth Forum Initiatives (Southern Denmark)	2007	
Midtjylland [DK04]	Growth Forum Initiatives (Central Jutland)	2007	
Nordjylland [DK05]	Growth Forum Initiatives (Northern Jutland)	2007	
Zachodniopomorskie [PL42]	Business competition of the Marshal of the Westpomeranian voivodship		
	R&D Infrastructure	2007	2013
	SME investments in new technologies	2007	2013
	Specialist advisory services to SMEs	2007	2013
	Support to the innovation institutions of business environment	2007	2013
Warminsko-Mazurskie [PL62]	Increasing competitiveness of enterprises	2007	2013
	Increasing potential of business intermediary organisations	2007	2013
	Regional innovation strategies	2007	2013
Pomorskie [PL63]	Financial instruments for SMEs	2007	2013
	Innovative solutions in SMEs	2007	2013
	Micro, Small and Medium-Size Enterprises	2007	2013
	Regional innovation strategies	2007	2013
	Regional network of transfer of innovative solutions	2007	2013
	Systemic Support to Entrepreneurship	2007	2013
Stockholm [SE11]	Creative Business Region Stockholm	2009	2011
	Entrepreneur STHLM	2008	2011
	Innovation Stockholm	2008	

	Karolinska Institute Innovation	1996	1996
	Powerhouse Life Science in Stockholm Life Solna-Stockholm	2010	2013
	STING - Stockholm Innovation and Growth	2001	
	Stockholm MedTech Growth	2009	2012
	Strengthening Stockholm's ICT-cluster – Kista Science City	2009	2011
Östra Mellansverige [SE12]	Business Science Arena	2009	
	Meal Centre (pilot study)	2010	2010
	New Tools for Health	2004	2013
	Processes and Relations in Innovative Environments (PRIM)	2008	2010
	Robot Valley	2004	
	Uppsala Bio	2003	2012
Småland med öarna [SE21]	Dare-Grow-Win	2008	2010
	Dynamism in Småland's Clusters (DISK)	2008	2010
	Functional analysis of the innovation system of Småland/Blekinge	2010	2010
	Knowledge and Innovation in Småland (KIS)	2008	2011
	Småland's and Gotland's Incubators 2.0	2008	2010
	Entrepreneurship Fund South Sweden	2009	2014
	ICT Blekinge - BICT 1	2008	2011
	Innovator Skåne	2010	2010
	Media Evolution	2009	2011
	Medicon Valley Alliance	1997	1997
	Mobile Heights		
	Skåne Food Innovation Network	2003	2012
	Swedish Model for Clean Growth	2007	2010
Västsverige [SE23]	Growth Halland	2008	2011
	HINT – (Sustainability Innovation Growth)	2008	2010
	Industrial Dynamics	2008	2010
	InMotion	2009	2010
	Smart Textiles	2008	2017
	Social Entrepreneurship	2009	2012
Norra Mellansverige [SE31]	Fiber Optic Valley	2001	2011
	Future Position X	2007	2007
	High Voltage Valley	2005	
	SLIM – System Management for Innovative Platforms and Cluster Organisations in Northern Central Sweden	2007	2013
	The Packaging Arena	2002	2002
	Triple Steelix	2004	2004
Mellersta Norrland [SE32]	Åkroken Science Park		
	Fibre Science and Communication Network	1999	
	Innovation Office 'Four-leaf clover'	2010	2011

	MIUN Innovation	2009	2009
	Packaging Mid Sweden	2008	2011
	Peak Innovation	2008	2017
	Processum Biorefinery Initiative		
Övre Norrland [SE33]	Biotechnology - Berries	2007	2010
	Electronic System – a regional Innovation System - ESIS	2008	2011
	Innovation sluice Västerbotten	2010	2013
	Krenova	2008	2010
	ProcessIT Innovations	2002	2013
	TräCentrum Norr (Wood Centre North)	2007	2010
	Umeå Biotech Incubator	2003	2013
Suomi / Finland [FI]	Regional cohesion & competitiveness programme COCO	2010	2013
	Tekes programmes	2010	2010
Itä-Suomi [FI13]	ERDF operational programme for Eastern Finland 2007-2013	2007	2013
	The Development Programme for Technology Industry in North Karelia 2015	2011	2015
Etelä-Suomi [FI18]	ERDF operational programme for Southern Finland 2007-2013	2007	2013
	The Centre of Expertise Programme (OSKE)	1995	2013
Länsi-Suomi [FI19]	Creative Tampere -programme	2006	2011
	ERDF operational programme for Western Finland 2007-2013	2007	2013
	Functioning Labour Markets - skilled workers and jobs - Development Programme 2009 - 2013	2009	2013
	Research and Innovation Programme of Higher Education Institution Network of South Osthrobothnia	2007	2013
Pohjois-Suomi [FI1A]	ERDF operational programme for Northern Finland 2007-2013	2007	2013

C.5 Research and innovation measures in TrendChart and ERAWATCH database

Country/ Region	Name of the support measure
Denmark	25 % Tax Scheme: Taxation of the Salaries of Well-paid Foreigners and Foreign Researchers
	Act on technology transfer on Public Research Institutions
	Advanced Technology Group - GTS
	Better Innovation
	Business Development Finance - The Growth Foundation
	Centres of Excellence
	Energy Technology, Development and Demonstration Programme (EDDP)
	Fund for employee-driven innovation in the public sector
	Gazelle Growth programme
	Graduate Schools
	Industrial PhD initiative
	Innovation center for eBusiness - IBIZ
	Innovation Consortiums
	Innovation packages (international consultancy)
	Interdisciplinary Research programme on the correlation between food, nutrition and health
	Investments in work force saving technologies
	Knowledge pilots
	Knowledge voucher (small scale innovation projects)
	New Knowlege for the Construction Industry
	Niels Bohr Visiting Professorship
	Pre-project grant for the 7th EU framework programme
	Proof of Concept
	Regional innovation agents
	Regional technology centres
	Research voucher for SMEs
	SPIR - Strategic Platforms for Innovation and Research
	Strategic research in education and creativity
	Strategic research in strategic growth technologies
	Strategic research programme for environmentally sustainable energy and energy production
	Sustainable transport and infrastructure
	The 'double-up' initiative
	The Danish National Advanced Technology Foundation
	The Innovation Act (food)
	The prevention fund - new technology to prevent disabilities
Estonia	Business incubator programm
	Cluster development programme
	Competence centre programme
	Competence Centres
	Development of collaboration and innovation in HEIs
	Doctoral Studies and Internationalisation Programme "DoRa"
	Estonian Development Fund
	Innovation vouchers
	Modernisation of R&D apparatus and equipment
	National programme "Estonian language and cultural memory 2009-2013"
	National programme "Language Technology Support for the Estonian Language 2006–2010" (NPELT)
	Product development Programme (earlier title R&D Financing Programme)
	Research and development institutions" infrastructure development programme
	Researcher mobility programme MOBILITAS
	Support for the Involvement of Innovation Staff
	Supporting the investments of infrastructure of test and semi-industrial laboratories
	Targeted financing of R&D institutions
	TeaMe
	Technology investment support in industrial enterprises
	Technology investment support in industrial enterprise
	The Centres of Excellence of the Estonian Science Programme
	The SPINNO Programme

Finland	BioRefine 2007 -2012
	Boat Programme 2008 -2011
	Built environment
	Centre of Expertise Programme (OSKE)
	Centres of Excellence (CoE)
	Computational Science Research Programme - LASTU
	Concepts of Operations 2007 -2011
	Digital Product Process 2008-2012
	Environmental, Societal and Health Effects of Genetically Modified Organisms (ESGEMO)
	Finland Distinguished Professor Programme (FiDiPro)
	Finnish Innovation Centres - FinNode
	Finnvera"s financial services for start-ups and micro-enterprises
	FinnWell - Healthcare programme 2004 – 2009
	Foundation for Finnish Inventions" funding for inventions
	Fuel Cell 2007 -2013
	Functional Materials 2007 -2013
	Funding for purchase of innovation services
	Funding scheme for young innovative companies
	GIGA Converting Networks 2005 -2010
	Graduate schools system
	INNOFINLAND
	Innovations in social and healthcare services
	Intelligent, resource-efficient production technologies (EffTech)
	InvestorExtra
	Liito - Innovative Business Competence and Management 2006-2010
	MASI - Modeling and simulation 2005-2009
	NewPro - Advanced Metals Technology - New Products 2004 - 2009
	NORDITE 2005-2010
	Pharma - Building Competitive Edge 2008–2011
	Reseach Programme on Substance Use and Addiction (ADDIKTIO)
	Research Programme on Business Know-how (LIIKE 2)
	Research Programme on NanoScience (FinNano) 2006-2010
	Research Programme on Neuroscience (NEURO) 2005-2009
	Research Programme on Photonics and Modern Imaging Techniques
	Research programme on Power in Finland (VALTA) 2007–2010
	Research Programme on Sustainable Production and Products (KETJU)
	Research Programme on The Future of Work and Well-being
	Responding to Public Health Challenges (SALVE)
	Safety and security 2007-2013
	Sapuska - Added Value for International Food Markets 2009-2012
	Seed Fund Vera Ltd
	Serve - Pioneers of Service Business 2006-2013
	SISU 2010 - Innovative Manufacture 2005 - 2009
	Spaces and Places
	Sustainable community 2007-2012
	Sustainable energy
	SymBio - Industrial Biotechnology 2006-2011
	The Finnish Workplace Development Programme Tykes
	The Millennium Technology Prize
	The Research Programme on Nutrition, Foods and Health (ELVIRA) 2006-2010
	The Research Programme on the Application of Information Technology in Mechanical, Civil and Automation Engineering 2005-2009 (KITARA)
	Tourism and Leisure Services 2006-2009
	TRIO Programme
	Ubicom - Embedded ICT 2007-2013
	Ubiquitous computing and diversity of communication (MOTIVE)
	VAMOS - Value Added Mobile Solutions 2005-2010
	Venture Cup Finland
	Verso - Vertical Software Solutions 2006-2010
	Water Programme 2008-2012
Germany	Action Programme Environment and Health
	BioFuture
	Central Innovation Programme SME
	Centres for Innovation Competence
	Climate2 - Research for Climate Protection and Protection from Climate Impacts
	Economic Sciences for Sustainability
	Environmental Specimen Bank (ESB)
	ERP Innovation Programme

	EXIST - Start-ups from Science
	ExistGo-Bio
	Framework Concept for the Production of Tomorrow
	Framework Programme "Biotechnology - Using and Shaping its Opportunities"
	Framework Programme "Research for Sustainability"
	Framework Programme Microsystems 2004-2009
	Framework Programme: Materials Innovations for Industry and Society (WING)
	Functional Nutrition Research
	Future Construction
	GenoMik Plus
	GeoTechnologies
	Health Research: Scientific Research for the people
	High-tech Start-up Fund
	ICT 2020
	IGF - Promotion of Joint Industrial Research (incl. ZUTECH)
	Innovation Alliances
	Innovative Regional Growth Poles
	IT Research 2006
	Junior Research Groups in Socio-ecological Research
	Knowledge for Decision-Making Processes
	Megacities of Tomorrow
	Methods to replace animal experiments
	Nanotechnology
	National Aeronautics Research Programme
	National Network "Computational Neuroscience"
	Networks of Competence
	Next Generation Solar Energy Technology
	Optical Technology
	Patent Information Centres and Thematic Information Centres
	Research Bonus
	Research for Civil Security
	Road Construction Research Programme
	SIGNO - Protection of Ideas for Commercial Use
	SME innovative
	Socio-ecological Research
	Sustainable Forestry
	Technology Venture Capital Programmes
	The Humanities in the Social Dialogue
	TOP - Technology oriented visiting and information programme
	Top Cluster Competition
Latvia	Attraction of highly qualified workforce
	Attraction of Human Resources to Science
	Basic and Applied Research Projects Programme
	Energy State Research Programme
	Enhancing motivation for innovation and business start-up
	Export and innovation award
	High value added investments
	Investments in development of micro, small and medium-sized companies in specially supported territories
	Pre-seed support for innovative business ideas
	Promotion of science competitiveness programme
	State research programme " Information technologies"
	State research programme "Agrobiotechnology"
	State research programme "Forestry and wood processing technology"
	State research programme "Latvian studies (Letonica) - culture, language and history"
	State research programme "Material science"
	State research programme "Medical science"
	State research programme "Organic synthesis and biomedicine"
	State research programme “Environmental research”
	Support for development of innovation centres and business incubators
	Support for development of new products and technologies
	Support for establishing industrial property rights
	Support for introduction of new products and technologies into production
	Support for Joint Research Projects
	Support for science and research
	Support to international R&D collaboration (EUREKA)
	Support to liaison offices for technology transfer
	Support to market oriented research

	Support to SME venture capital
	Support to the implementation of doctoral programmes and postdoctoral research
Lithuania	Assistant - 1
	Assistant - 2
	Assistant - 3
	Controlling fund
	Development of computer literacy skills
	Development of entrepreneurial skills
	Direct support for IPR protection in enterprises
	E-business LT
	High technologies development programme
	Idea LT
	Improvement of knowlegde about science and technologies among pupils and youth and support to equal rights in science
	Improvement of the Qualifications and Competencies of Scientists and Researchers (scientific databases, e-documents)
	Industrial biotechnology development programme
	Inogeb LT-1
	Inogeb LT-2
	Inoklaster LT
	Inoklaster LT+
	Intellect LT+
	Invest LT
	Leader LT
	Lithuanian National Lisbon Strategy Implementation Programme
	Partial compensation of SME''s credit interests
	Process LT
	Programme of Second Stage for the Implementation of the Lithuania Long-Term Strategy for Research and Development (2006–2009)
	R&D Quality and Training of Experts
	Social responsibility of enterprises
	Strengthening of the General Science and Studies infrastructure
	Support for Business Missions
	Support for the devlopment and participation in technology platforms
	Support for the participation of foreign experts in the events, organised in Lithuania
	Support of scientists and researchers mobility and students scientific work
	Support to Priority Research and Experimental Development Trends in Lithuania
	The Creation of Infrastructure, aimed at the Improvement and Dissemination of Knowledge about R&D, Technologies and Innovations
	The Creation of National Open Source Scientific Communication Centre
	The Development of the High Level Research Centres and Competence Centres
	The improvement of human resources in enterprises
	The Preparation of R&D Infrastructure Development Projects
	The Programme of Industrial Biotechnology Development in Lithuania for 2006-2010
	The Single Programming Document of Lithuania for 2004-2006. Measure 1.5. “Development of Infrastructure of Labour Market, Education, Vocational Training, Research and Study Institutions and Social Services”
	The Single Programming Document of Lithuania for 2004-2006. Measure 3.1 “Direct support to business”
Poland	Creation of the system facilitating investments in SMEs
	Creator of innovativeness
	Development of centres with high research potential
	Development of R&D personnel qualifications and raising awareness of the role of science in economic development
	Development of workforce and enterprises in regions
	Fiscal incentive
	Initiating innovation activities
	Innovation Voucher
	Investment relating to science IT infrastructure
	Investments related to R&D activities within enterprises
	Lifelong learning
	Management of intellectual property rights
	New investments with high innovation potential
	NewConnect
	Patent Plus
	Polish Product of the Future

	Status of R&D Centres
	Strengthening and developing HEIs academic potential as well as increasing the number of graduates at courses of strategic importance for the development of knowledge-based economy
	Strengthening potential of science staff
	Support to applied research projects undertaken by science institutions
	Support to cooperation linkages at national level
	Support to innovation centres
	Support to networks of intermediary organisations providing innovation services at national level
	Support to risk capital funds
	Support to scientific research for building the knowledge-based economy
	Support to the creation of joint research infrastructure of science entities
	Support to the implementation of R&D results
	Support to the system for the adaptability of personnel
	Technological initiative
	Technology credit
	Transfer of knowledge
Sweden	Berzelii Centres
	Biomedical Engineering for Improved Health
	Cluster Programme
	Company graduate schools
	Company/ university research profiles
	Competence development in industry
	Designed Materials including Nanomaterials
	Environment-driven markets
	FAS Centres
	FAS Post-doc grant
	Forest research programme
	Global Links for Strong Research and Innovation Milieus
	Grant for postdoctoral position in Sweden
	Green Nano
	Human Proteome Resource (KAW)
	Industrial Biotechnology
	Innovation financing
	Innovation in food
	Innovations for Future Health
	Institute Excellence Centres
	National Aeronautical Research Program
	ProEnviro
	Regional Development Programme
	Research & grow
	Research profiles
	Research- and Postgraduate Programme (Smaforetags- och industridoktorandprogrammet)
	Solar Energy for hydrogen production (KAW)
	Strategic Research Centres
	Sustainable Renovation
	SWECIA - Mistra SWEdish research programme on Climate, Impacts and Adaptation
	Swedish Norwegian business cooperation
	The Key Actor"s Programme
	The Linnaeus Grant
	The National Incubator Programme
	Vehicle and traffic safety
	Venture Cup
	VINN Excellence Centre
	VINN NU
	VINN-Verification
	VINNMER
	VINNPRO
	VINNVÄXT - Regional growth through dynamic innovation systems
	Visualisation research programme

Appendix D Transnational co-operation in the BSR

D.1 Baltic Sea Region Programme 2007-13: fostering innovation sub-theme projects

Project Acronym	Project Name	Lead Partner
Best Agers	Best Agers -professionals in their primes to foster business and skills development in the Baltic Sea Region	Wirtschaftsakademie Schleswig-Holstein GmbH DE
BaltFood	BaltFood - The BSR Food Cluster: Innovation and Competitiveness in Action	Wirtschaftsförderung Lübeck GmbH DE
Baltic Fashion	Promoting the innovative Baltic Fashion industry throughout the Baltic Sea Region	
BalticSupply	Interregional SME Supply Clusters along the Northeast Corridor	Senator für Wirtschaft und Häfen DE
BaSIC	Baltic Sea Innovation Network Centres	WISTA-MANAGEMENT GMBH DE
BONITA	Baltic Organisation and Network of Innovation Transfer Associations	Universität Bremen DE
BSHR HealthPort	BSHR HealthPort - Baltic Sea Health Region - Business acceleration support and training bridging innovative SMEs and health care organisations to strengthen BSR health economy	
BSR InnoReg	Strengthening Innovation Governance in Baltic Non-metropolitan Regions through Transnational Cooperation	Suomen Itämeri-instituutti FI
BSR QUICK	BSR QUICK - Qualification, Innovation, Cooperation and Keybusiness for Small and Medium Enterprises in the Baltic Sea Region	Hanse-Parlament e.V. DE
BSR_CBP	Capacity Building Programme on Trans-National Cluster and Innovation Systems in the Baltic Sea Region	Trekantsområdet DK
COOL Bricks -	COOL Bricks - Climate Change, Cultural Heritage & Energy Efficient Monuments	
FM - FIRST MOTION	Driving BSR regional development by innovating the high-skill growth sector "creative/AV industry" (FM)	Filmförderung Hamburg Schleswig-Holstein GmbH DE
IBI Net	IBI Net - "Intercountry Business Incubators' Network"	Riga Planning Region LV
ICT for Health	ICT for Health - Strengthening social capacities for the utilisation of eHealth technologies in the framework of ageing population	
JOSEFIN	Joint SME Finance for Innovation	Investitionsbank Berlin (IBB) DE
Longlife	Longlife - Sustainable, energy efficient and resource saving residential buildings with consideration of unified procedures and new and adapted technologies	Technische Universität Berlin DE
MIN-NOVATION	MIN-NOVATION Mining and Mineral Processing Waste Management Innovation Network	
PlasTEP -	Dissemination and fostering of plasma based technological innovation for environment protection in BSR	Technologiezentrum Fördergesellschaft mbH Vorpommern DE
REMOWE	Regional Mobilizing of Sustainable Waste-to-Energy Production	Mälardalens högskola SE
SPIN	Sustainable Production through Innovation in Small and Medium sized Enterprises	Umweltbundesamt (UBA) DE
StarDust	StarDust - The Strategic Project on Trans-national Commercial Activities in Research & Innovation, Clusters and in SME-Networks	
URBAN CREATIVE POLES	URBAN CREATIVE POLES - Development and Promotion of Creative Industry Potentials in Medium-Sized Cities of the Baltic Sea Region	

Source: Baltic Sea Region Programme 2007-2013 database

D.2 INTERREG IV C - innovation & the knowledge economy sub-theme – number of BSR organisations per project

Sub -Theme	Project Name	Number of BSR organisations participating
Employment, human capital and education	• Brain Flow	2
	• CREATOR	2
	• DART	2
	• Gender4Growth	1
	• PADIMA	1
	• PEOPLE	1
	• SolidarCity	1
	• UNICREDS	6
	• WINNET 8	11
Entrepreneurship and SMEs	• B2N	3
	• CITIES	2
	• CLUSNET	3
	• CREA.RE	2
	• Creative Growth	6
	• CREATIVE METROPOLES	5
	• ENSPIRE EU	3
	• ENTREDI	2
	• EuroPROC	1
	• ICER	1
	• ICHNOS PLUS	1
	• IMAGEEN	1
	• NEEBOR	6
	• POOLING4CLUSTERS	1
	• Robinwood PLUS	1
	• RURALAND	2
	• SEE	4
	• YES	3
Innovation, research and technology development	• ChemClust	1
	• CLIQ	4
	• DISTRICT+	1
	• ECREIN+	1
	• ERIK ACTION	1
	• ERMIS	2
	• FRESH	4
	• I4W	1
	• INNOHUBS	2
	• INNOPOLIS	2

	• IPP	1
	• MINI EUROPE	1
	• MKW	3
	• RAPIDE	4
	• SCINNOPOLI	1
The Information Society	• DE-LAN	1
	• DLA	3
	• eCitizen II	4
	• EVITA	4
	• ICT-VN	1
	• IMMODI	2
	• OSEPA	2
	• PIKE	1
	• RTF	3

Source: INTERREG IV C database, data extracted 3 February 2011.

D.3 Baltic Sea Region organisations involved in ERA-NET projects

Organisation Name	Country	Regional Coverage
Academy of Finland	Finland	National
Agency for International Science and Technology Development	Lithuania	Not specified
Agency for Renewable Resources	Germany	National
Alfred Wegener Institute for Polar and Marine Research	Germany	Not specified
Application Center Oberpfaffenhofen	Germany	Not specified
Archimedes Foundation	Estonia	National
Association of Finnish Marine Industries	Finland	National
Bavarian Ministry of Economy, Infrastructure, Transport and Technology	Germany	Not specified
BIA Bremen Innovation Agency	Germany	Not specified
BONUS - Baltic Organisations Network for Funding Science EEIG	Finland	International
Center for Innovation and Technology in Northrhine-Westfalia	Germany	Not specified
Central Association for occupational safety, health protection, accident insurance	Germany	National
Central Office of Metrology	Estonia	National
Centre for Metrology and Accreditation	Finland	National
Danish Fundamental Metrology Ltd	Denmark	National
Danish Maritime Authority	Denmark	National
Danish Ministry of Foreign Affairs - Department for Technical Advisory Services	Denmark	National
Danish Ministry of the Environment	Denmark	National
Danish Ministry of Transport	Denmark	National
Danish National Advanced Technology Foundation	Denmark	National
Danish Polar Centre	Denmark	Not specified
Danish Road Directorate	Denmark	National
Danish Water Forum	Denmark	National
Elytra	Denmark	National
Energinet.dk	Denmark	National
Enterprise Estonia	Estonia	National
Estonian Academy of Sciences	Estonia	National
Estonian Ministry of Culture	Estonia	Not specified
Estonian Police Forensic Service Centre	Estonia	National
Estonian Science Foundation	Estonia	National
Estonian Ministry of Education and Research	Estonia	National
EURAMET	Germany	International
European Organisation for Astronomical Research in the Southern Hemisphere	Germany	Not specified
Federal Agency for Agriculture and Food	Germany	National
Federal Environment Agency	Germany	National
Federal Highway Research Institute	Germany	National
Federal Institute for Geosciences and Natural Resources	Germany	National
Federal Institute for Occupational Safety and Health	Germany	National
Federal Institute for Risk Assessment	Germany	Not specified
Federal Ministry of Consumer Protection, Food and Agriculture	Germany	National
Federal Ministry of Economics and Labour	Germany	National
Federal Ministry of Economics and Technology	Germany	National
Federal Ministry of Education and Research	Germany	National
Federal Ministry of Labour and Social Affairs	Germany	National
Federal Ministry of the Environment, Nature Conservation and Nuclear Safety	Germany	National
Federal Ministry of Transport, Building and Urban Affairs	Germany	National
Federal Office for Building and Regional Planning	Germany	National
Federal Office for Consumer Protection and Food Safety	Germany	Not specified
Finish Cancer Registry	Finland	National
Finnish Consulting Group International	Finland	International

Finnish Environment Institute	Finland	National
Finnish Funding Agency for Technology and Innovation	Finland	National
Finnish Institute of Occupational Health	Finland	National
Finnish Ministry of Social Affairs and Health	Finland	National
Finnish Ministry of Trade and Industry	Finland	National
Finnish Road Administration	Finland	National
Finnish Vehicle Administration	Finland	National
Finnish Work Environment Fund	Finland	National
Forest cluster Ltd	Finland	National
Foundation for Strategic Environmental Research	Sweden	National
Fraunhofer Society	Germany	National
German Aerospace Centre	Germany	National
German Development Institute	Germany	National
German Federal Foundation for the Environment	Germany	National
German Federation of Industrial Research Associations	Germany	National
German Foundation of Organ Transplantation	Germany	National
German Police University	Germany	National
German Research Foundation	Germany	National
German Social Accident Insurance	Germany	Not specified
Helmholtz - Community of German Research Centres	Germany	National
Helsinki Institute of Physics	Finland	National
IFOK GmbH - Institute for Organizational Communication	Germany	Not specified
INNtex Innovation Network Textile	Germany	Regional
Institute and Outpatient Clinic for Occupational, Social and Environmental Medicine	Germany	National
Institute for Quality and Efficiency in Health Care	Germany	Not specified
Institute of Health and Labour NRW	Germany	Regional
International Bureau of BMBF	Germany	National
International Centre for Research in Organic Food Systems	Denmark	National
Julius Kuhn Federal Research Institute for Cultivated Plants	Germany	Not specified
Karlsruher Institut für Technologie	Germany	National
Klaipeda University	Lithuania	Not specified
Latvian National Academy of Sciences	Latvia	National
Latvian Science Council	Latvia	National
Latvian State Institute of Agrarian Economics	Latvia	National
Leibniz-Institute for Agricultural Engineering Potsdam-Bornim	Germany	Regional
Lithuanian Road Administration	Lithuania	National
Machine Technology Centre Turku Ltd	Finland	Not specified
Ministry for Foreign Affairs	Finland	National
Ministry of Agriculture	Estonia	National
Ministry of Agriculture	Latvia	National
Ministry of Agriculture and Forestry	Finland	National
Ministry of Agriculture of the Republic of Lithuania	Lithuania	National
Ministry of Agriculture of the Republic of Lithuania	Lithuania	National
Ministry of Defence	Sweden	National
Ministry of Economic Affairs and Energy	Germany	Regional
Ministry of Economics	Latvia	National
Ministry of Economics and Communication	Estonia	National
Ministry of Education and Science	Latvia	National
Ministry of Education and Science of the Republic of Lithuania	Lithuania	National
Ministry of Employment and the Economy	Finland	National
Ministry of Enterprise, Energy and Communications	Sweden	National
Ministry of Environment	Latvia	Not specified
Ministry of Family and Consumer Affairs	Denmark	National
Ministry of Food, Agriculture and Fisheries	Denmark	National

Ministry of Health of Republic of Lithuania	Lithuania	National
Ministry of Innovation, Science, Research and Technology North Rhine-Westfalia	Germany	Regional
Ministry of Innovation, Science, Research and Technology of North Rhine-Westphalia	Germany	Not specified
Ministry of Labour, Health and Social Affairs of North Rhine-Westphalia	Germany	Not specified
Ministry of Science and Research	Germany	Regional
Ministry of Science, Technology and Innovation	Denmark	National
Ministry of the Environment	Finland	Not specified
Ministry of the Interior - Police Department	Finland	National
Ministry of Traffic, Energy and Regional planning North Rhine-Westphalia	Germany	Regional
Ministry of Transport and Communications	Finland	National
Ministry of Transport of the Republic of Latvia	Latvia	Not specified
National Archives	Sweden	Not specified
National Board of Health	Denmark	National
National Centre for Research and Development	Poland	National
National Food and Nutrition Institute	Poland	Not specified
National Food Institute - Technical University of Denmark	Denmark	Not specified
National Institute for Working Life	Sweden	National
National Metrology Institute	Germany	National
National Police Department Denmark	Denmark	National
National Research Centre for the Working Environment	Denmark	National
Nofer Institute of Occupational Medicine	Poland	National
Nordic Council of Ministers	Denmark	Not specified
Nordic Forest Research Co-operation Committee	Finland	Not specified
Nordic Optical Telescope Scientific Association	Sweden	Not specified
Plant Protection Institute	Poland	Not specified
Police Academy of Latvia	Latvia	National
Polish Academy of Science	Poland	National
Potsdam Institute for Climate Impact Research	Germany	National
Project Management Agency for Production and Manufacturing Technologies	Germany	National
Project Management DESY	Germany	National
Project Management GSI	Germany	National
Project Management Juelich / Research Centre Juelich	Germany	National
Region Västra Götaland	Sweden	Regional
Regional Oncologic Centre Board - Upsala Örebroregionen	Sweden	National
Research Centre of Agricultural and Forest Environment	Poland	National
Research Council	Sweden	National
Research Council for Production and Technology Sciences	Denmark	National
Research Institute of Pomology and Floriculture in Skierniewice	Poland	National
Saxon State Ministry of the Environment and Agriculture	Germany	Regional
Science Council of Lithuania	Lithuania	National
Sea Fisheries Institute in Gdynia	Poland	National
Senator for Economy and Ports	Germany	Not specified
Silesian University of Technology	Poland	National
Society for Innovative Employment Promotion	Germany	Not specified
Spinverse Capital and Consulting	Finland	National
State Inspection for Heritage Protection	Latvia	National
Swedish Construction Sector Innovation Centre	Sweden	National
Swedish Council for Working Life and Social Research	Sweden	National
Swedish Defence Research Agency	Sweden	Not specified
Swedish Energy Agency	Sweden	National
Swedish Environmental Protection Agency	Sweden	National
Swedish Governmental Agency for Innovation	Sweden	National

Systems		
Swedish Institute of Agricultural and Environmental Engineering	Sweden	National
Swedish Maritime Administration	Sweden	National
Swedish Meteorological and Hydrological Institute	Sweden	National
Swedish National Police Board	Sweden	National
Swedish National Roads Administration	Sweden	National
Swedish Rail Administration	Sweden	National
Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning	Sweden	National
Technical Research Centre of Finland	Finland	National
Technical Research Institute of Sweden	Sweden	National
Technical University of Lodz	Poland	National
Tetraplan A/S	Denmark	National
TÜV Rheinland Consulting GmbH	Germany	National
University of Tartu	Estonia	National
University of Technology	Estonia	Not specified
Värmeforsk	Sweden	National
VDI Technologiezentrum GmbH	Germany	National
Vilnius Gediminas Technical University	Lithuania	National
Warsaw University of Technology	Poland	National
WoodWisdom-Net Project Secretariat	Finland	International
Wrocław Regional Development Agency SA	Poland	Not specified

Source: ERA-NETS database, data extracted 3 February 2011

D.4 Baltic Sea Region organisations involved in Regions of Knowledge

Project acronym	Theme 1 of the call	Targeted field/Sector	Country of partner
BioMob	Enhancing the sustainable use of natural resources and of the natural and man-made environment	Socio-economic sciences and humanities	Denmark [DK]
Bridge-BSR	Maximising the benefits of research infrastructures for regional economic development Socio-economic sciences and humanities		Denmark [DK] Estonia [EE] Germany [DE] Latvia [LV]
EMSAC	Transnational cooperation between regional research-driven clusters	Food, agriculture and fisheries	Sweden [SE]
INRES	Maximising the benefits of research infrastructures for regional economic development	Environment (including climate change)	Denmark [DK]
iRegions	Maximising the benefits of research infrastructures for regional economic development ICT and information society		Sweden [SE] Estonia [EE]
REDICT	Bringing the benefits of research to SMEs	ICT and information society	Denmark [DK]
STInno	Transnational cooperation between regional research-driven clusters	Environment (including climate change)	Sweden [SE]
TOUREG	Bringing the benefits of research to SMEs	Services	Sweden [SE]
TRANS REG NCP	Trans-national co-operation among NCPs n/a		Latvia [LV] Lithuania [LT]

Appendix E Evidence on ERDF impact

E.1 Summary of DG REGIO innovation policy reports for the 2007-2013 for Baltic Countries

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
Denmark	• Innovation, knowledge sharing and knowledge development • Creation and development of new business • Application of new technologies	• National government sets up the strategic framework • Danish Growth Council is appointed to advise on strategy and administer the implementation of the national policies • Growth Forums to implement the respective regional strategies for the development of trade and industry	• Strong coherence between the objectives of the ERDF and the regional strategies of the six regions • Each of the six Danish regions carries out their own innovation policy (e.g. North Jutland: New products and business models, development of new technology, Increase work places)	• 82.2 % (209m) of total ERDF in the period 2007-2013 is supporting innovation activities	• 1st priority: boosting applied research and product development (€107m) • 2nd priority: knowledge transfer and support to innovation poles and clusters (€68m) • 3rd priority: innovation friendly environment (€33m)	• Only eight projects have been completed and have conducted a final evaluation • These evaluations show a strong focus on the primary output of the respective performance, recipients mostly conduct the evaluations themselves.	• 4 cross border co-operation programmes • 2 transnational ones	• Widen the scope of the evaluations • Develop evaluations that deal with results and impacts in a methodological and consistent way • Bring the evidence from the output-level of the projects to the aggregate result level
Estonia	• Competitive quality and increased intensity of R&D, • Innovative enterprises to create	• Single NUTS II • Objective 1 region • Top-down approach in the	• No regional priorities in R&D and innovation policy, • Innovation-	• 22,2% of total ERDF resources for innovation (€668 m)	• 1st priority: Boosting applied research (€319m) • 2nd priority: knowledge transfer	• Recent evaluations call for greater emphasis on the enterprise sector (vis-à-	• Central Baltic INTERREG IV • Estonia and Latvia co-	• Concept of programmes remains fuzzy • The administrative

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
	new value in the global economy, and • Innovation-friendly society aimed at long-term development.	design of innovation policies	policy support measures at the local level remain limited		and poles (€264m) • 3rd priority: innovation friendly environmental (€89m)	vis current orientation towards infrastructure-related investments). • More balance between research policy and innovation policy measures	operation programme	capacities are weak • Important R&D and innovation policy measures need to be increased financially in order to be continued
Finland	• Productivity development based on innovation • Obtaining an internationally leading role in innovativeness	• Clearly visible regional dimension • Regional policy is based on the Government's regional policy strategy • Regional Councils are responsible for administrating, coordinating and steering national and EU cohesion programmes	• Support to enterprises • Support to networking activities • Strengthening of knowledge structures • Improving accessibility and the operative environment of regions;) • Environmental effects and sustainable development. •	• Nearly two thirds of the total ERDF resources (€629m) are allocated for innovation purposes	• 1st priority: boosting applied research (€216 m) • 2nd priority: promoting innovation friendly environment (€196m) • 3rd priority: knowledge transfer and poles (€219m)	• Finnish system is less international than in many other countries and is increasingly falling behind in this respect • Allocation of public resources to innovation actions in relatively disadvantaged regions	• Baltic Sea Region Programme • The Northern Periphery Programme • INTERREG IVA Pohjoi • Central Baltic INTERREG IV A Programme:	• Disadvantaged regions (main target of the ERDF programmes) are more challenging than in a larger regions • More emphasis on the special requirements of networking and cluster in these regions
Germany	• Convergence programmes -	• ERDF implemented at	• Reflecting Lander focus,	• ERDF in Lander (10% for	• ERDF "subsumed" under domestic policy	• Systematic evidence	• Dependent on specific	• NIS weakness - Application and

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
	Targeting R&D in enterprises and strengthening basic functions of RIS – adjusting the deficits of the respective system • Competitiveness programmes – improve performance of the RIS. Higher variation in policy mix • Application and transfer of knowledge and its economic valorisation	Lander level, supporting innovation policies •	ERDF implementation means focus on specific parts of the RIS: applied research, and R&D in enterprises complemented by training, consultancy, and instruments for market introduction. • More or less the same policy mixes across the Lander	competitiveness; 30% for convergence regions) • Convergence regions – EUR 3.143 bn available for innovation (27.7% of the overall ERDF in 2007-13) • Competitiveness regions – EUR 1.853 bn (39% of total ERDF • Decision-making dominated by domestic side, not ERDF-strategies. • R&D spending mainly by the private sector (68%)	• Innovation and R&D essential for ERDF programmes • ERDF funds at Land level, mostly spent on project support, focused on the application phase and the private sector – about 10% of R&D expenditure • Convergence – emphasis on knowledge transfer and support to innovation poles and clusters – 66%; applied research-24%; innovation friendly environment – 11%. • Competitiveness – knowledge transfer and support to innovation poles and clusters – 47%; applied research-36%; innovation friendly environment – 18%.	across programmes is rare • Evaluations available for individual programmes • R&D projects in enterprises assessed as successful. • Increasing innovation capacity in participating enterprises. • Positive effects in infrastructure • Participation in joint research projects showing above average return • Single studies showing positive cluster/networks effects	Lander programmes	transfer of knowledge and its economic valorisation • Continued support for RIS • Innovation in services • Significant variation in RIS • Multi-annual strategic approach at the interface between research and the private sector • Policy mix integrating infrastructure and transfer policies
Latvia	• Providing financial instruments and support services for	• Single NUTS II • Objective 1	• There is no formal regional policy in terms	• 27% (€882m) of total ERDF resources for innovation	• 1st priority: boost applied research (€550m)	• Evidence on the performance	• n/a	• Achieving a shift of emphasis from

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
	science research institutions and businesses operating in technology-intensive sectors; • Improving applied research at universities, other research institutions and in technology intensive companies • Increasing innovation capability by promoting interaction among innovation actors •	region • Top-down approach in the design of innovation policies •	of the EU definition. • There are not administrative entities no regional administration and no separate strategy at the regional level •		• 2nd priority innovation friendly environment (€161m) • 3rd priority: knowledge transfer and poles (€110m)	of the innovation measures is almost non-existent • Implementation problems have stemmed from insufficient budget co-financing		increasing science research capacity towards actual commercialisation of the outputs • Overcoming the lack of co-financing and entrepreneurial culture • Increased active participation in international networks
Lithuania	• Development of a high quality labour force, • Increase in the share of high and medium added value businesses • Fostering innovation creation in SMEs. • Knowledge dissemination between entities • Creation of the right infrastructure	• Single NUTS II • Objective 1 region • Top-down approach in the design of innovation policies	• Innovation policy is developed and implemented only at national level • No regional priorities in R&D and innovation policy	• Support amounts to 37.4% (€1,157m) of ERDF funds	• 1st Priority: boosting applied research (€516m) • 2nd priority: knowledge transfer and poles (382m) • 3rd priority: creating an innovation friendly environment receives (€259m)	• There is no substantial evidence on the performance of innovation measures co-financed by ERDF • Implementation remains slow and evidence on impact is as yet not available. • There has been	• Baltic Sea Region Programme 2007-2013 • CLOE Programme • BSR-INNOnet • JOSEFIN project • INTERREG IVC	• Unfavourable economic and budgetary situation • Substantial delays in drafting and confirming the documents • Need for strategic planning and better legislative framework

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
						considerable interest in R&TD projects		• Project applicants still lack experience and knowledge of how to prepare the documents needed
Poland	• National Regional Development Strategy 2007-13 • 16 regional Ops (three relevant for the Baltic Sea Region) • Implemented as part of EU policies • Key operational programme is the OP Innovative Economy • Innovativeness one of the six goals formulated in the National Development strategy 2007-13 • Innovation defined in the context of competitiveness in the NSRF	• Clearly visible regional dimension • All regions have RIS	• National and regional priorities are similar. • Level of innovation hope to be improved by, inter alia, direct supports to enterprises, develop potential for innovation (e.g. infrastructure, financing R&D), technology transfer, creation of new innovation-environment institutions and provision of support to existing, encouraging cooperation, training,	• ERDF as the main source of innovation funding • Science and education mostly nationally funded, 83% and 96%, respectively. • OP Innovative Economy – EUR 9.7 bn (ERDF will contribute € 8.25bn, 12.3% of the total allocation within the NSRF) • 16 regional Ops – EUR 3.25 bn for innovation + special development programme for 5 poorest regions	• Applied research and development – 44% of total • Innovation friendly environment" – 31% • Innovation poles and clusters – 25%	• Dependent on specific region • At national level assessment of ERDF spending is very difficult due to considerable dispersion of information and lack of comparable data. • No thorough analysis possible. • Issue is that ERDF related outcomes typically exist concurrently with other supports, e.g. ESF.	• Dependent on specific RIS	• Low levels of innovation • Country yet to begin implementing a serious innovation policy • Enhancing selectivity of financing science and enterprises • Improving coordination among programmes and projects at national and regional levels • Spreading the idea of innovation to wider society

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
			financing			• Overall impact of tech parks rather limited. Better result form projects strengthening cooperation between R&D and economy.		
Sweden	• "Innovative Sweden" strategy was presented in 2004. The main priorities are: education, research trade and industry policy areas • There only a number of targeted innovation strategies.(e.g. services) • Some public agencies have their own strategies (e.g VINNOVA)	• The public sector finances R&D through grants paid directly to higher education institutions and sectoral research agencies • Several public agencies are responsible for innovation: VINNOVA is responsible for RTDI, the Swedish Research Council supports basic research ,and Swedish agency for Economic and Regional	• The National Strategy for Regional Competitiveness, entrepreneurship & employment 2007-2013 serves as basis for regional programmes financed by ERDF. • Five priorities are outlined in this national strategy: innovation and renewal, improvement of skills and improved labour supply, accessibility, strategic cross border cooperation and	• The role of ERDF in supporting innovation is significantly growing • Over 60% of the ERDF budge (€566 m) is intended to be allocated in innovation • Differences in ERDF innovation budget allocations exist between regions	• 1st Priority: stimulate research and innovation and entrepreneurship in SMEs (43%) • 2nd Priority: knowledge transfer (35%) • 3rd priority: innovation friendly enviroment (30%)	• An evaluation was completed in July 2010 • Swedish programmes created 3,700 new firms and 5,000 new jobs in five regions • Projecst have succeed to mobilise regional actors and be organised in a more professional way	• n/a	• Limited capacity to formulate new ideas and develop new projects (most of the projects seem to be reformulated version of old projects) • Significant gap between policy documents and practice in the financed projects • Mismatch between innovation projects and Structural Funds projects in relation to the time

Country	National Innovation policy priorities/strategies	Governance framework	Regional Innovation policy priorities/ Strategies	ERDF Overall budget	ERDF innovation focus	Evaluations	Interregional co-operation	Challenges
		Growth is responsible for enterprises and competitiveness	sparsely populated regions in Northern Sweden					horizon

Source: DG REGIO: Expert Evaluation Network delivering Policy Analysis on the Performance of Cohesion Policy 2007-2013. Summary by Technopolis Group

Appendix F BSR interesting case studies

Case 1: Lithuania – Integrated centres of science, studies and business ("Valleys")

In November/December 2008, the Government of the Republic of Lithuania adopted a resolution on the establishment of integrated centres of science, studies and business ("Valleys"). The Ministry of Education and Science and the Ministry of Economy allocated €400m for the implementation of the Valleys programme through the National Integrated Programme and the General National Research and Science and Industry Cooperation Programme. Funding is from the EU Structural Funds for 2007-2013 Programming period.

Three components constitute the programme – Valleys, Joint Research Programmes (JRPs) and individual projects. Five Valleys have been announced:

- Santara Valley (in Vilnius) specialising in biomedical research, i.e. biotechnologies, innovative medicines, biopharmacy;
- Sauletekis Valley (in Vilnius) – laser and light technologies and material sciences (including. nanotechnologies, semiconductor technologies and electronics, civil engineering);
- Santaka Valley (in Kaunas) – material science, sustainable chemistry and pharmacy, mechatronics, future energy and ICT;
- Nemunas Valley (in the Kaunas region) – agro-science, i.e. agro biotechnologies, bioenergy and forestry, safety and wellness; and
- Integrated Marine Science and Industry Center (Valley) (in Klaipeda) – marine technologies and environment.

The overall aim of the Valleys programme is to concentrate the potential of scientific research, studies and knowledge intensive business in specific geographical areas. However, to a large extent, the programme is oriented towards infrastructure development of selected HEIs and PRIs with the purpose to upgrade and concentrate the research infrastructure in selected geographic areas.

In order to improve the co-ordination and synergies among the Valleys and Valley participants (higher education institutions, public research institutions and businesses) and to have more results-oriented Valley projects, four JRPs were introduced in 2009: Biomedicine and Biotechnology; Engineering and Information Technologies; Materials Science, Physical and Chemical Technologies; and Natural Resources and Agriculture. The goal of the JRPs is to concentrate research potential in selected sectors across Lithuania, improve the effectiveness of EU-funded initiatives, and develop education, training and business co-operation mechanisms.

There are 20 R&D infrastructure development projects under four JRPs within five Valleys, which present a mix of Open Access research centres; Studies centres; Science and technology parks; Business incubators and other. These projects are linked by the JRPs as well as funding for research and studies ("soft projects"). It is intended that the combination of infrastructure and soft projects and in specific sectors will accelerate innovation in the selected research areas. In addition to these projects, there are also:

- Consoloidation of studies potential projects – relocation of faculties;
- Establishment/ relocation of students dormitories;
- Installation/renewal of universties' studies infrastructures;

- Establishment of R&D thematic networks, promotion of associations activities;
- Other projects for procurement of equipment

Although the process of equipment acquisition has already started, it is still too early to talk about any outcomes. It is also too early to talk about recommending this programme as an example of the regional/national good practice to other policy makers.

At the moment, there are a number of key issues that still need to be sorted. Despite the shared will and agreement for cooperation among the HEIs, PRIs, local governments and business, in most cases there is still a naturally prevailing tendency to satisfy the needs and interest of specific HEIs or PRIs and not to consider the wider innovation system. There is also a lack of cooperation experience of Lithuanian science and research institutions, local governments and business, as well as the absence or limited participation of foreign companies.

Finally, when the programme was being developed no elements of cooperation with outside Lithuania were considered or indeed the international best practice was accessed and taken into the account. It is now acknowledged that perhaps when developing and implementing individual projects, partners should look outside Lithuania – if not at the wider BSR then at least at the neighbouring countries such as Latvia. These and other issues are hoped to be improved in the course of this programme's implementation. If the programme develops to cover a mix of infrastructure projects (where real Open Access Centres are established), 'soft' projects, players from across Lithuania (rather being purely geographically focused) and players from abroad (whether as users of the new infrastructure or as partners in some projects), it will make an interesting example how different elements of the innovation and RT&D can function together.

Case 2: BioCon Valley

BioCon Valley is the regional life-science cluster in Mecklenburg-Vorpommern. It dates back to 1996 when the federal "BioRegio" competition was launched and 17 regions were competing over €100 million that the three winning regions obtained. The competition, the prototype of the new technology policy in Germany, with a focus of a specific technology and with the aim to strengthen the strong was, was open to all regions. Given the evaluation criteria, one can understand the efforts of the participants to present a coherent proposal, that needed to include the strengths of the region in terms of biotechnological research, commercial applications, and a development concept for the future. Other criteria concerned the interdisciplinary of relevant research networks, supporting services such as patent offices, consulting, measures for spin-offs and the settling of new firms.

Mecklenburg-Vorpommern was not among the winning regions but the preparation efforts to set up a regional network proved very stimulating and thus, all of the then 17 participating regions are part of the now 25 German 'bio-regions'.

According to patent statistics measuring the German biotech sector by region, the position of Mecklenburg-Vorpommern increased between 2000-2005 remarkably. It started as a region contributing only 1.2% of all German biotech patents in 2000 and was able to increase this share to 3.9% in 2005, having thus the second highest average annual growth with 27%. According to the DPMA, Mecklenburg-Vorpommern is technologically specialised in biotech given that this patent category obtained 11% of all of the region's patents in 2007, whereas other patent classes are in the range of 2-3% only. Patent statistics also reveal that science and industry contributed equally to applications. Compared to the leading regions this shows however a lack of the relevant applying industry.

Key modalities

BioCon Valley Mecklenburg-Vorpommern e.V. is a non-profit association funded 2001. It has the aim to to promote cooperation with other regions in the filed of life sciences with other regions, in particular the BSR.

Partnership and governance

The cluster has about 160 members from industry, research, public bodies and support organisations, but also hospitals and service-oriented establishments like hotels. Between 1997-2007, the number of companies in the cluster increased from 44 to over 90. The number of employees increased form 550 to 2,400.

Activities supported

The BioCon Valley started as a life-sciences cluster. Since 2004 it pursues equally 'health' which is of course closely connected in terms of its life-science research base, yet in terms of applications it differs. It terms of the industrial fields of its member firms, 55% are in biotech, 20% in medical technologies, 2% in pharma and 22% in other fields. About 40% of the firms are located in incubators, 10% next to the Greifswald university.

BioCon Valley is an important 'network broker' – it actively pushes the concept for turning the region into the Number 1 health economy region in Germany. As such it manages also hic@re - the "Health region of the future" project that the region won in 2010 in a federally funded competition.

BSR co-operation: extent to which potential for BSR level synergies or co-operation

was integrated from an early stage in planning

The cluster started to establish cooperation with international partner regions early on. Its clear focus is on the Baltic Sea regions but it is not exclusively limited to the BSR.

In 2001, BioCon Valley started together with the Medicon Valley Academy, and BioTurku the EU-funded initiative ScanBalt. Since 2004 it has its own legal entity and functions as a meta network for 40 life sciences regions in the BSR that brings together about 60,000 employees in this sector.

The cluster extended its contacts to south-east Asia, where it maintained a cooperation with the Japanese prefecture Mie. This project was funded by the Japanese External Trade Organisation under its Region-to-Region programme.

BioCon Valley is also a partner in the North German cluster Biokatalyse 2021 (Biocatalysis 2021) which obtains mainly federal funding. The partner provides public relations and facilitates its internationalisation strategies which are important to attract further private partners.

In December 2008, a life science marketing measure started in order to form a joint platform for the regions Greifswald and Szcecin. It aims at cross-border exchanges of information and the initiation of joint projects, in particular under FP7's life sciences programmes.

Funding (incl. identification of ERDF or other EU funds) and public/private split

BioCon Valley is a registered non-profit organisation. As such its members pay an annual fee which is structured by type of member (firms by income, public bodies, individuals, etc.). As a non-profit organisation, there is no legal obligation to publish a balance sheet.

The cluster obtained €4 million from the ERDF in 2007 for the coordination of health measures in the land. For the years 2008 and 2009 it obtained equally ERDF funding for its annual national and sectoral conference (€149,100 and 157,800 respectively).

It obtains funding for the management of the federally funded initiative hic@re, worth about €7 million over 2010-2014.

Main outcomes to date

As a network broker, the BioCon Valley cluster initiative has brought a noticeable stimulus for the regional development in Mecklenburg-Vorpommern. Its technological avenue towards positioning the region as a leading location for the health economy may indeed help the region to develop a unique profile within Germany, and having the large BSR as potential cooperation partners due to its inclusion in ScanBalt may also prove to be a valuable asset.

Lessons for other BSR:

The smart specialisation strategy of Mecklenburg-Vorpommern can indeed be used as a model for several other, industrially weak regions in particular in Poland and the Baltic States. The choice for biotechnology – life sciences is somewhat due to chance – given that the first technological competition targeted this field. As an instrument the bottom-up initiatives proved to create a dynamic that was taken up and fostered by the regional government. Given that biotechnology offer many technological avenues and applications in several industries, a region focussing on biotechnology still needs to chose a particular field. Here the way the region mapped its competences (see policy brief), set up a strategy and implemented measures is certainly instructive and can be *applied* in many other regions.

Case 3: The Pomorskie Voivodeship (Poland) – Support for Strategic Clusters

Many regions across the EU support clusters because there are several potential benefits. Firstly, an effective cluster can lead to the increase of local enterprises productivity. Secondly, spatial proximity can be a source of innovation. It is worth to mention here knowledge transfer, competition, and science-industry co-operation. Thirdly, the remaining positive effects of clusters include among other things better access to services provided by business intermediary organisations, an increase of investment in infrastructure as well as higher income per inhabitant. In a nutshell, the rise in popularity of clusters among policymakers can be explained by the fact that clusters are viewed to have potential of becoming engines of regional competitiveness and economic growth.

Taking into account the above-mentioned considerations, the Pomorskie voivodeship is not an exception. Almost two years ago, it formally adopted the 'Regional Cluster Programme: 2009-2015'. Comparatively to other Polish regions, this programme is unique mainly because it supports clusters which are evaluated as strategically important for the development of the Pomorskie voivodeship. The main objective of the programme is to strengthen the competitiveness of the Pomorskie economy through the support to regional and local clusters. The programme foresees the support for three types of clusters, including: (1) strategic clusters, (2) sub-regional (local) clusters, and (3) embryonic clusters (technological networks).

The main benefits of obtaining a status of strategic cluster are three-fold. First, the cluster can receive support for the functioning and development of cluster, including co-financing of cost related to activities of the cluster animator, promotion and marketing materials, as well as technology transfer and observatory / monitoring types of projects. Second, preferences can be given to proposals submitted by those strategic clusters for certain support measures of the Regional Operational Programme and the regional component of Human Capital Operational Programme. The third benefit associated with the status of strategic cluster is that regional authorities can issue a recommendation which can be presented during the application for other public support programmes (e.g. EU Structural Fund interventions – National Operational Programmes, the Seventh Framework Programme, and the European Territorial Co-operation Programme). In order to avoid lock-ins, it is planned that new competition will be organised to select strategic clusters before the launch of the 2014-2020 financial perspective.1

So far, three initiatives have obtained a status of strategic clusters.

The Baltic Eco-Energy Cluster (BEEC) is a common initiative of the Polish Academy of Science Institute of Fluid-Flow Machinery, University of Warmia and Mazury, Gdansk University of Technology, Koszalin University of Technology, Marshals and Self-Governments of the Pomorskie and Warmińsko-Mazurskie Voivodeships, as well as the economic units and associations having their seats in those voivodeships.

The main mission of BEEC is to introduce and promote a widely understood idea of distributed co-generation, understood as simultaneous small and medium scale production of thermal energy and electricity from renewable energy sources, mainly biomass, but also by converting water, solar and wind energy.2

[1] Regional Programme of Support to Clusters for the Pomorskie Voivodeship for years 2009 – 2015. Available only in Polish at: http://www.pomorskie.klastry.pl/upload/pages/493_program%20wspierania%20klastrow.pdf

[2] http://www.bkee.pl

The Pomeranian ICT Cluster brings together some 70 organisations from the business and science sector. The initial steps towards establishing the Pomeranian ICT Cluster were taken during the implementation of projects during the 2005-2008 period undertaken by the Centre of Excellence – WiComm at the Technical University of Gdansk. As a result, enterprises from the ICT sector overcome a lack of trust and become convinces about the benefits stemming from the co-operation and knowledge transfer.

The main objective of the cluster is to establish favourable conditions for the development of enterprises from the ICT sector in the region through the supply of knowledge, supporting innovation, fostering co-operation between firms and other institutions as well as implementation of joint goals of cluster members.

With regard to planned activities, the Pomeranian ICT Cluster aims at establishing co-operation with 18 European ICT clusters participating in the BSR Stars – Mobile Vikings project (2010-2013).3

According to the 2010 ranking commissioned by the Polish Agency of Enterprises Development and prepared by Delloitte, the Pomeranian ICT Cluster was as the best cluster among 47 analysed Polish clusters.4

The Construction Cluster obtained a status of strategic cluster in December 2010. The co-operation in the framework of that cluster was initiative in 2007 and in the same year the cluster was registered as Ltd. company. Initially the cluster consisted of 18 members and currently brings together 42 entities.

It is planned that until 2015, the Construction Cluster will become a leading organisation of construction sector in the North of Poland with developed national and international networks allowing its members to systematically increasing and exploiting human, technological and financial potential.5

Process of developing the Regional Cluster Programme

The starting point of the programme was the 2005 Regional Development Strategy of the Pomorskie Voivodeship, which pointed out to the need of creating favourable environment and conditions for establishing clusters.

It is also important to mention the European Social Fund project 'Stimulating the economy innovativeness of the Pomorskie Voivodeship through the support to clusters'. This project was undertaken by a leading research organisation specialised in the field of clusters and cluster policies, namely the Gdansk Institute for Market Research during the 2005-2008 period. In the past, the institute had already been involved in similar assignments. For instance, it elaborated the concept of cluster policy at the national level commissioned by the Ministry of Economy back in 2004. Prior to the adoption of the 2009-2015 Cluster Programme, the public consultation as well as ex-ante evaluation was carried out.

The most important lessons to be drawn from the case of the Pomorskie Voivodeship is that developing programmes such as the Cluster Programme is a long-term process, it involves a lot of efforts and many stakeholders. In order to succeed, establishing priorities is not enough. They key to success is to systematically monitor regional trends, in order not to loose sight of new emerging opportunities.

3 http://www.pomorski-klaster-ict.pl

4 http://www.madeinpomorskie.pl/article/38421_Laury_dla_Pomorskiego_Klastra_ICT.htm

5 http://gkb.idhost.pl/

Case 4: Nordic – Baltic Mobility Programme for Business and Industry

Nordic–Baltic Mobility Programme for Business and Industry is a Grant Programme developed in a cross–border co-operation. Programme is operational from the beginning of 2009 and is planned to be operational for the period 2009 – 2013. The Nordic–Baltic Mobility Programme for Business and Industry is part of a longer Nordic-Baltic co-operation that was initiated in 1991 and has developed into a political co-operation in areas of joint priorities. The programme aims to strengthen business co-operation, entrepreneurship, and regional cluster co-operation between the Nordic and Baltic (Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden) countries.

The Nordic–Baltic Mobility Programme for Business and Industry provides financial support to different stakeholders in the fields of business and industry to carry out study visits, internships, on-the-job training or network and cluster facilitating activities in Baltic or Nordic countries. The aim of these activities is to strengthen cooperation within the priority areas of the programme. The priority areas for 2011 are:

- Green Growth
- Health and welfare innovation
- Entrepreneurship and young entrepreneurs
- Business incubator network
- Promoting cluster cooperation aimed at global markets, especially in creative, innovative and knowledge-based industries
- Initiatives to identify and remove barriers to trade and mobility within the Nordic-Baltic region.

To receive the grant, participation of minimum three countries is required. One of these countries has to be Nordic and one Baltic country. The programme covers 70 % of travel, accommodation and co-operation costs. Calls for applications are organized annually.

The programme is administered by the Nordic Council of Ministers' Office in Latvia (the Management Body). Partners that designed the programme and are participants in the programme are the Nordic and Baltic (Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden) countries. The Nordic Council of Ministers (NCM) decides on the operation and funding for the programme. The annual budget of the programme is financed by the Nordic Council of Ministers and the governments of Estonia, Latvia and Lithuania. Co-funding from beneficiaries is required.

In 2009 and 2010 in total 101 projects were funded. Beneficiaries where businesses and organisations supporting the private sector. Several projects resulted in continuous cooperation between the involved parties, for example, Latvian Transport and Logistics cluster initiated FP7 project with the partners from the mobility programme project. Business incubators from Latvia and other BSR countries initiated the project IBI Net that is funded by BSR Programme 2007 – 2013.

SMEs and business support institutions around BSR are interested in cooperation and share many common topics to explore and learn from each other. Mechanisms to initiate and support the co-operation at initial phase are necessary and as several examples from the Nordic – Baltic Mobility Programme for Business and Industry show, the projects are further developed with the help of other support mechanisms or independently.

Case 5: Transnational Cluster Cooperation in the field of ICT in the BSR/ "Mobile Vikings"

Type of initiative: transnational cluster cooperation

Operational from – to: n.a.

The ICT sector in the Baltic Sea Region is highly developed with advanced technologies hosting many important ICT clusters. This is also the reason why this sector was selected as one of the pilot areas of the former Baltic Sea Region Innovation Network6. Participating cluster organisations in the ICT pilot were Øresund IT, HERMIA - Competence Cluster for Ubiquitous Computing, Mobile Heights, Latvian IT Cluster, ICT Pomerania from the countries Denmark, Sweden, Finland, Latvia and Poland. Themes of cooperation included topics such as ICT solutions for low-energy living, support to regional ICT companies at European trade fairs or women as leaders of ICT industry. The cooperation proved to be very successful and resulted in several joint research and innovation projects and multilateral and bilateral business alliances. The collaboration of ICT clusters continues under the new EU Strategy for the Baltic Sea Region, where one of the actions is to foster transnational ICT cooperation. Specifically in the framework of the project "Mobile Vikings" the objective is to develop new products and services in the field of telecommunication and mobile communication. An important feature of the ICT transnational cluster cooperation is its cross-sectoral nature and impact on other sectors.

Key modalities: The aim of "Mobile Vikings" is to excel in new methodologies and tools leveraging Baltic Sea Region's strengths in telecommunication/mobile applications and services. The key building block of the approach is to exploit the vast theoretical knowledge on open innovation and user and demand-driven innovation and put concrete new methods in practice as part of the innovation strategies of companies, academia and society.

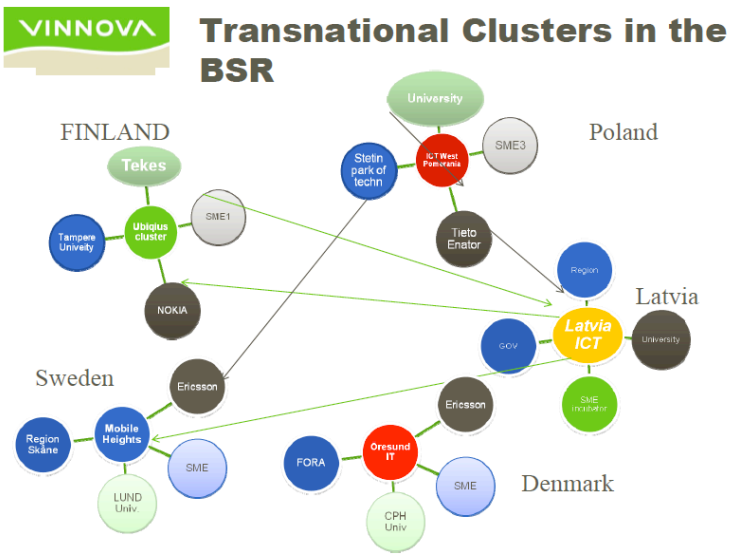
Partnership and governance: Mobile Vikings is a consortium of 5 partners from 5 countries. Mobile Heights is the coordinator. Partners are Latvian ICT Cluster, Øresund IT, HERMIA, Competence Cluster for Ubiquitous Computing and Visorial Information Technology. There are further 11 associated partners from Norway, Demark, Poland, Germany, Finland and Sweden.

Activities: The collaboration is focused on creating new products and services in new and growing companies piggy-backing on the international networks of global enterprises. It is about new user- and demand driven business and innovation models that have to be implemented to secure jobs and competitiveness. Thematic Area is Digital Business and services and ubiquitous solution. The activities include the development of test beds for new products and services in the telecommunications/mobile applications area. Secondly, it will investigate how open innovation methodologies can become part of cluster management. Third, the project will aim at creating a real and unified Baltic Sea market in the specific field.

Funding: BSR transnational programme: ERDF

[6] http://www.proinno-europe.eu/bsr-innonet/project-overview

Figure: ICT transnational cluster cooperation – map of some of the key partners



Case 6: Skåne Food Innovation Network (Skånes Livsmedelsakademi)

Type of initiative: Permanent organisation, describes itself as the hub of one of the most interesting food manufacturing clusters in Europe. Activities are business driven, and there are close ties with universities, secondary schools, and food industry's business development oranisations in the region. Involved in bilateral, cross-border activities. Member of Øresund Food, "your knowledge and innovation network within the food value-chain". Some BSR outreach, but mainly to Denmark, rest of supply chain seems to reside in Skåne.

Operational from: 1994

Context /short history: Formed on the initiative of industry, to deal with upcoming Swedish EU membership and increasing international competition. Grew quickly into a well working network, with large commitment from industry, research and society. Working widely to develop the Swedish Food Industry, through increased innovation rate and value added. Also tries to increase attractiveness among young, well educated people, to develop the sector. Seeks to disseminate knowledge about the modern Skåne food culture, and how it can contribute to health, well being and positive food experiences.

Key modalities: Partners are 40 larger companies and organisations. They are not limited to the region, but also larger companies with parts of their business in the region (There is, however, also Fundación Chile). Members are around 35 smaller enterprises from across the entire value/supply chain. There is a board with representatives from companies, research and society, to reflect the width and strengths of the Skåne food industry. Daily business is run by a Managing Director, and a team managing five different business areas.

Among activities we find education, dealing with public opinion issues, arrangement of seminars and theme days for both specialists and a broader audience. Several activities are performed in networks, where mainly partners are represented. The networks are: Foresight Network, Food Research Network, MD Network, Entrepreneur Council, R&D Network, Retail Network, HR Network, Advisory Board (young people), Supply Chain Network, and Politician Network.

Funding includes partner and member fees, but also grants from national funding agencies; where VINNOVA is the main contributor, through the VINNVÄXT programme, SEK 10 million a year for 10 years, starting 2003. All VINNVÄXT funding requires 50% regional funding, which means that the total funding is at least SEK 20 million during 10 years.

Main outcomes to date: Established cluster co-operation and knowledge transfer between industry, universities, organisations and public authorities to form the food trade and industry for the future. Smaller enterprises are supported in product development and outreach to the public. Organisation also support in public procurement as well as development of purchase, distribution and meals production. There is also a trainee programme.

Lessons for future BSR networks: Secure simultaneous involvement and commitment from industry, universities and organisations for business and/or user driven operations. Conduct openness and transparency. Knowledge should be made explicit and transferable in and between stabilised environments/organisations.

Case 7: Robotdalen

Type of initiative: Cluster project, enabling commercial success of new ideas and research within robotics and automation.

Operational from: 2003 (as a VINNVÄXT winner)

Context /short history: Robotdalen was set up as an initiative where the vision is to take the lead in research, development and manufacture of industrial, field and medical robotics. The key to its success has been an environment in which actors in the fields of advanced research, higher education and industry have collaborated, with encouragement of innovations and new enterprises. The cluster project has been successful in mobilising stakeholders from the entire region, including major companies such as ABB, Atlas Copco and Volvo. The first Swedish university course in robotics is located here.

Key modalities:Partnership and governance: Board is led by the county governor of Örebro county, and consists of one municipality mayor, together with directors from both companies, universities and public organisations. Management consists of a process leader with administration, county coordinators and five additional deputy process leaders, responsible for core areas (the main process leader is also responsible for one core area, which makes them six in total).

Activities are solely following from the fact that Robotdalen is a robotics initiative enabling commercial success of new ideas and research within robotics and automation, focusing mainly on solutions for the industry, heavy vehicles and health care sector. Within Field Robotics, support concerns research and development of different types of service robots, focusing on heavy autonomous vehicles. Industrial Robotics is mainly about solutions and support for increased competitiveness in SME:s. Technology for Independent Life is about enhancing quality of life for elderly, disabled and health care staff. Around 40 projects ongoing continually.

BSR co-operation: No BSR level synergies seem to have been integrated from an early stage in planning, nor is any such development apparent from the annual reports. Priorities in the international work is rather aimed at strategic recruitment, partnerships and networking in general and towards establishing new companies in the region.

Funded by VINNOVA, the European Regional Development Fund, the European Social Fund and a number of public institutions, universities and companies in Central Sweden. Funding from the European structural funds amount to 25% of the funding for some years, thus making it significant in leveraging the development of the project. The regional funders in Central Sweden are the county administrative boards and county councils in the counties of Södermanland, Västmanland and Örebro, regional federations in the counties of Södermanland and Örebro, the municipalities of Eskilstuna, Karlskoga, Laxå, Västerås and Örebro, Mälardalen University, Örebro University. Among the funders and collaborative partners from the industry are ABB, Atlas Copco, Volvo Construction Equipment, ESAB, Danaher Motion, Linde Material Handling and Stora Enso and a vast number of small and medium-sized enterprises in the region.

Main outcomes to date: Goal is 35 new companies and 35 new products within robotics and automation before 2013. So far 17 companies and 17 products have been achieved. There is strong political support by counties. Been particularly effective in strengthening awareness of Robotdalen in Sweden. Process management is highly capable and appreciated. Course in Master of Engineering has been established, and post-graduate school, Intelligent Systems for Robotics, Automation and Process Control, has been set up.

Lessons for other BSR: Matching of European and national agency funding with local funding seems to build in necessary local commitment and engagement, which serves to warrant that individual initiatives are well grounded in local reality. Economic development has a long term horizon. Any main or major funding body or core funding must therefore be long term and sustainable. In the case of Robotdalen, core funding is 10 years, unless periodical evaluations show major failure to develop according to plans.

Case 8: Uppsala Innovation Centre (UIC)

Type of initiative: Business incubator for growth companies in the Uppsala region.

Operational from: Company registered 1999.

Context/short history: UIC is a part of the Swedish national incubator program (IBIP) run by Innovationsbron, and participates also in the EU projects PRIM and IIM. UIC offers four different incubator programmes, with a sum of 65 participating companies; UIC Business Start (39 participants), UIC Business Lab (43), UIC Business Accelerator (22) and UIC Alumni (24).

Key modalities:

Partnership and governance: Company has four owners; ALMI Företagspartner, SLU Holding (at university of agriculture), STUNS (Foundation for co-operation between universities) and Uppsala university Development. The 24 partners are contributing with knowledge and competence through seminars, individual advice and contributions to the funding of UIC. They are a mix of privately and publically owned companies, national authorities and other organisations. The board of directors are from the same wide variety of organisations, and the managing director manages eight other people in the staff responsible for different aspects of the incubator programmes.

Activities supported: A business incubator, such as UIC supports start-up companies that want to develop new ideas to become strong growth companies. It provides management and financial assistance as well as access to commercial and technological networks.

BSR co-operation: The only visible connection outside the region seems to be some funding from the EU regional fund, through the Swedish Agency for Economic and Regional Growth, and a bilateral co-operation partnership in Shanghai, China.

Gross turnover 2009 was SEK 16,6 million. UIC's own regular business was funded completely by partners, where Innovationsbron has the largest part through the IBIP-programme.

Main outcomes to date: Around 140 companies have been part of the incubator programmes. A network of around 50, by the board of directors approved, business coaches is established. Investments in the incubator companies 2009 were SEK 141 million in venture capital and SEK 69 million in contributions and loans.

Lessons for other BSR: UIC itself points to a number of key success factors; 1) the range of programmes, 2) the business coach model, 3) UIC has no ownership in the incubator companies, 4) focus is on business development, not on letting out premises, 5) clear and reciprocal demands between UIC and companies, 6) continuous, monthly reports from business coaches, 7) the companies appreciate the efforts and are willing to pay for them, and 8) strong co-operation between actors in the innovation system.

Case Study 9 : BONUS for the Baltic Sea Science – Joint Baltic Sea Research and Development Programme

The Bonus project aims to achieve a common understanding of the Baltic sea ecosystem. It seeks for sustainable solutions for the Baltic sea region. Fundamentally, the programme brings together the research community of marine, maritime, economical and societal research to address the main societal challenges faced by the Baltic Sea System, and more particularly in the maritime eco-system. In the core of the grand challenges are, among others, adaptation to the climate change, achieving good environmental status of the Sea, sustainable and safe use of the goods and services, evaluation and development of relevant policies and collective governance of the human activities. Also, attention is given to maritime and coastal spatial planning in the Baltic Sea region based on the ecosystem approach and enhanced cross-sector and cross-border cooperation, as required by EU Integrated Maritime Policy.

In the light of the abovementioned common goal, Bonus particular objectives can be grouped in four manifolds:

- Enhanced understanding of the needs for research on the Baltic sea
- Improved co-operation among different stakeholders and efficiency of the research capacity in the BSR
- Generation and transfer of scientific knowledge to support European, national and regional coastal and marine environmental policies
- Broader involvement of scientific disciplines and the number of scientists in the Baltic Sea research system

Operational from: 2004 (BONUS ERA-NET)

Context/short history

At the beginning of the present decade, increasing debates around fishing rights and the pollution of coastlines by oil spills highlighted the need for a better international scientific collaboration to support decision-makers. In this context, in 2003, the European Commission was determined to support a new project to improve environmental and sustainable development of the Baltic Sea. This new project was called BONUS ERA-NET. The BONUS ERA-NET, which run between 2004-2008, was a joint project developed by 12 research funding and coordination agencies around the Baltic Sea Area to develop the foundations for the establishment of a Joint Baltic Sea Research Programme. A dedicated legal entity, Baltic Organisations Network for Funding Science EEIG, was equally established in 2007.

Following BONUS ERA-NET, in 2007 BONUS+ pilot followed to test the system of collaboration among the national funding institutions launching it first call for proposals.

The current BONUS programme 2010-2016, or the so-called BONUS-169 is, as a result, acting as continuation to the previous BONUS ERA-NET and BONUS+. The BONUS programme provides thus an umbrella under which all-previous phases, activities and achievements are captured. Between 2010 and 2011, the BONUS programme focuses on the strategic development and preparation for the subsequent implementation phase. The implementation phase, which will run between 2012-2016, seeks to prepare at least three joint calls for the promotion of a deeper integration of research policies, infrastructures, training programmes, exploitation and

dissemination of research products.

Funding

The Bonus project funded under the ERA-NET scheme as part of the FP6 2002-2006, was funded by the EU as well as all members and associated members of the EEIG. The EU contributions amounted to over €3 million. Its successor, Bonus+ and its call in 2007, funded a total of €22 million, two thirds coming from national funding agencies and one third funded by EU ERANET+.

During the actual phase of the project for the period 2010-2016, € 100 million have been foreseen, of which 50 million will come from EC funding and the remaining budget from national contributions.

Main outcomes to date and lessons for future BSR networks

The BONUS ERA-NET project helped bringing together the key research funding organisations from all the EU member states around the Baltic Sea. It was shaped as a consortium of 14 partners - eleven funding agencies, a research institute and two international organizations having regular workshops and meetings. At this first stage, the programme did not offer funding for networking of scientists or research projects. Instead, it made the national research funding organisations cooperate by building up a Joint Baltic Sea Research Programme to fund research.

The BONUS+ opened a new stage of cooperation through the call for proposals launched in 2007. The programme has funded a total of 16 projects involving over 100 research institutes and universities and has set out to test the mechanisms of collaboration among national funding institutions. In 2011, during their third and final project year, analysis of the obtained data and compilation of the research outputs are ongoing. The results of the projects are not yet available. This will be presented at the Baltic Sea Science Congress Joint research efforts for sustainable ecosystem management on 22-26 August 2011 in St. Petersburg.