

# Macro-Regional Development and the Health Economy:

Practical Experiences, Models and Concepts  
for Macro-regional Collaboration  
between Regions and Clusters

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## Executive Summary

### The growing importance of health economy

Health contributes to wealth and investments in health foster the long-term growth and sustainability of economies. A healthy population is necessary for economic productivity and prosperity, while economically vibrant communities with secure jobs foster improved health.

With more than six million employees, the health economy constitutes one of the most significant economic sectors in the EU. The health economy accounts for up to 15% of total employment, providing more jobs and generating more income than many “traditional” sectors.

The health economy offers a strategic opportunity to help build a knowledge-based sustainable economy able to meet some of the grand societal challenges of the regions and the regional networks.

### Baltic Sea Region: Growing market but disparities and lack of cohesion

Significant demographic shifts with ageing populations and the rise in chronic diseases and comorbidities is a major driver of the healthcare sector throughout the Baltic Sea Region (BSR). Within this territory, every segment within the health sector is currently expanding to meet demand.

However the region also shares with the rest of the EU challenges such as economic disparities and lack of cohesion between the (sub) regions.

Moreover, weak transnational and trans-sectoral coordination of the whole innovation chain is impeding the translation of innovative ideas from research to market readiness, obstructing development of innovative ideas by SMEs and slowing down diffusion and adoption of innovative products and services.

A fragmented system of research and innovation can be indicative of weak internal links and a low level of cooperation between actors.

### The role of macro-regional concepts

Macro-regional concepts and regional clustering can help:

- ➔ Promote the health economy
- ➔ Address grand societal needs and challenges with collaborative measures
- ➔ Reduce disparities between the levels of development between regions
- ➔ Mobilize growth potential to achieve economic, social and territorial cohesion
- ➔ Enhance investments in knowledge
- ➔ Increase networking and coordination between main stakeholders
- ➔ Improve framework conditions
- ➔ Reduce fragmentation
- ➔ Avoid unnecessary duplication
- ➔ Promote smart specialization
- ➔ Mobilize regional and national investments

On the last two issues: Collaboration at the macro-regional level is a lever to promote smart specialization in the regions and distribute best practices. Macro-regional strategies can be established based on the principles of smart specialization. In turn, these can shape national and/or regional policies. The process of smart specialization has been ongoing in ScanBalt BioRegion (Health economy in the Baltic Sea Region) since 2001.

Finally macro-regional collaboration has shown the capacity to mobilize regional and national investments which otherwise would not have been available for trans-national collaboration based on a common vision and strategy for the macro-region.

## Competition and consolidation

BSR collaboration seems to shift to being driven by market demand and not only public policy. This is very positive. Therefore the operative level of stakeholder collaborations should be given more attention and play a central role in EU Strategy for the Baltic Sea Region (EUSBSR).

A key issue in such collaboration is to avoid competition between the macro-region and (sub) regions – In practice; this is experienced as competition for memberships, participation, investments and attention.

EUSBSR leads to increased competition for limited available resources both regionally and nationally. Many new networks and collaborations are resulting from the strategy. This is very positive as it increases quality and can lead to enhanced mobilization of regional and national resources for trans-national collaboration.

That said, there is a point of saturation where it becomes increasingly difficult to maintain flagship initiatives sustainable. A solution may be to consolidate existing initiatives while maintaining an open door for new interesting ideas.

## The importance of knowing the (macro) region

Any macro-regional initiative requires knowledge also about the stakeholders. However, it is an immense task to obtain a full and complete overview due to the many sub-regions and because necessary information is not always available. And information quickly becomes outdated so it can only be a snapshot. Still a snapshot is crucial in order to develop models and strategies for collaboration and to identify and involve ambassadors for any macro-regional initiative.

## Hubs and satellites as a basic model for macro-regional collaboration

A macro-regional cluster collaboration should develop strategies for targeted networking within selected disciplines where strong regions (within the respective disciplines) can be regarded as “competence hubs” while other regions with a competence fit are “competence satellites”. It is worth noting that it is not only the metropolises that have scientific or industrial niches and so can be regarded as competence hubs. Remote predominantly rural regions, can also become a competence hub with their own niche.

Taken together, the clusters in ScanBalt BioRegion can match the global leading clusters in the US within selected disciplines. The local strength of one cluster can compensate for the comparative weakness of others giving opportunities for increased collaboration.

The various modes of the clusters mean they can be brought together in closer collaboration for mutual benefits as they may complement each other. Thus ScanBalt BioRegion is a string of clusters each with the potential to bring added value to the macro-regional value chain and potentially contributing to enlarging the overall societal benefits generated by the health and life sciences.

## Bridging academia and SME's is a top priority

An important priority is to strengthen the innovation development continuum between basic research, translational research and industry complemented by integrated intellectual property management leading to lasting collaborations that deliver product development and commercialization. A key issue is to connect IP competencies and enhance awareness of Intellectual Property Rights (IPR) and other IP-issues in order to increase the commercialization potential of academic research.

The availability of risk financing in the early SME development phases is a critical parameter. Only by mobilizing risk-taking investment sources can the (macro) regions effectively bridge academic research and growth of SMEs. For example, in 2009 ScanBalt highlighted the need for a cross-border financial support infrastructure for R & D. The first cross-border accelerator has since been established. It has so far worked with over 100 start-ups and spin-offs.

In the Danube area in particular the awareness among researchers about the importance, potential and tools and processes of technology transfer may still be in need of a significant lift.

### Shared tools and services between clusters

A model for shared tools and services between clusters can be delivered and marketed as a virtual portfolio with different modules depending on customer demand or based on priorities set by the macro-regional community.

The total portfolio will rely upon the regional competencies of the partner organizations and each module partnership including competence hubs and satellites. This constitutes a flexible model of organizing shared support and services. Business clubs, project incubation, match making, shared market places, marketing and visibility are examples of modules in shared service platform for clusters.

### Innovation ecosystem and organization

The BSR health economy needs to build on an Open Innovation Ecosystem if its potential is to be unleashed. The main objective is to support the creation of sustainable, cost-effective, citizen centric healthcare systems promoting new jobs and businesses.

The macro-regional organizational set-up should preferably be based on the idea of decentralization in order to mobilize regional resources and encourage the regions to take direct ownership. This is also a necessity due to the fact that likely only limited resources are available.

However, the organizational model should never be regarded as static and in BSR it may be time to consider mergers between various initiatives.

### Closer clinic-industry collaboration pivot

In order to further exploit the potential of the market and meet the societal challenges a process in 2014 was initiated aiming for the "Baltic Sea Region as one test site for development of health care products and services". If successful this offers huge benefit for:

- ➔ Patients as it improves the health care offered
- ➔ Regions as it means more efficient use of existing research and innovation infrastructure and economic development
- ➔ Rural areas as it promote technologies improving health care monitoring and delivery
- ➔ SMEs which faster and easier can bring their innovations to the market

One major gap specifically targeted is the lack of close clinic-company collaboration. SMEs often miss access to existing clinical infrastructure in other countries e.g. to validate diagnostic tools and processes. Additionally, clinicians are burdened by increasing clinical routines and thus rarely can commit to generating and then (more critically) following through the development of innovative ideas from "bench to bedside" or vice versa.

An intensified collaboration between clinicians across hospitals and countries can lead to improved clinical procedures through the exchange of best practice, influenced by different national,

organizational and regulatory conditions. Finally, successful innovation is driven by fast market access across countries facilitated by better collaboration between clinicians and companies, which is especially relevant for startups and SMEs in the BSR.

## The Danube Area: Need to focus on health and health economy

The societal challenges and barriers in the Danube Macro-Region are unlikely to be significantly different from those described for BSR. Though how they are experienced and shape policy priorities might differ.

Even so, health and health care apparently seem to suffer from a lack of attention among the more established economic and environmental priorities at the macro-regional level. In fact health and the health economy are not mentioned in any of the headlines of the EU Strategy for the Danube Area.

Looking at implementation of this Strategy, there are at least 100 organizations that are listed as involved in collaboration in the Danube Area, but none have an obvious focus on health and the health economy. So there is an urgent need to strengthen the focus on health and the health economy in the EU Strategy for the Danube Area to provide a top down push towards strengthened macro-regional collaboration.

## Innovation the common denominator

Innovation and uptake of new innovative products, services and systems cut across various recommendations for health and health care in the individual Danube countries and regions.

To make progress in the Danube Area there would be practical benefits from focus on establishing

one test and development site for health care products and services much in the same way as it is done for ScanBalt BioRegion.

There should also be a dynamic Secretariat covering the Danube Area with a remit to coordinate the planning of actions to improve complementary investment in regional health systems within the Danube Area by efficient use of Structural Funds in combination with H2020. This would be similar to the proposed by DanuBalt that also lists a number of proposals for concrete actions.

## A stakeholder snapshot is needed

Currently a comprehensive overview of the various competence hubs and satellites within health and life sciences in the Danube Area is not available. So, thus it is difficult to identify disciplines or areas where the Danube Area successfully may collaborate in order to create competitive macro-regional added value chains. However, the online survey conducted by DanuBalt highlighted relevant S3 priorities for regions in the Danube Area and this might provide a starting point for collaboration. Undertaking a subsequent snapshot of health economy drivers and stakeholders would be a next step.

## S3 smart specialization platform

Together, this evidence can inform setting-up a S3 smart specialization platform for the Danube Area. This will rely on a specific health/biomedical/life sciences topic being identified that makes a Platform reasonable and advantageous.

One or several round tables should assist to explore the real demand for closer collaboration and combine the policy push (visions) with the market demand.

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## Foreword

This publication presents models and concepts for collaboration between regions and clusters with a focus on health and the health economy. A key issue is how to ensure mutual benefits for both innovation leaders and modest innovators and between metropolitan and rural regions.

Another key issue is how to enhance national/regional public-private investments in the health economy while ensuring alignment with the priorities and opportunities available from various EU funds (like ESIF, Horizon2020) in order to make progress on the road towards smart specialization.

The (EU) concept of the macro-region is quite recent. In contrast, experience with clusters and cluster policies has built up over several decades. Although the assumption is that macro-regions and clusters complement rather than compete, their rationales differ widely. Despite this, the macro-region is actually a support tool for regional clusters and networks in order to fulfill regional ambitions and solve societal challenges.

This paper draws from experiences gained in ScanBalt BioRegion since 2001 and seeks to explore the value lessons learned for the Danube Area. Its intent is to inform a toolbox or process that can be applied in the Danube Area – or any other macro region for that matter. The bottom line is that it illustrates practical steps for the creation of a sector-specific macro-regional cluster based collaboration to enhance the health economy in the Danube Macro-Region.

Macro-regional collaboration is sensitive to external factors such as the political climate. Navigating this requires clear case to be argued with obvious benefits in order to successfully promote investments into trans-national initiatives. The drive should be demand-oriented, based on capacity to solve real societal challenges and be beneficial for the key stakeholders in order to succeed.

The hope is that this publication will assist in strengthening macro-regional collaboration within health and the health economy, strengthen the role of macro-regions in the EU and facilitate exploitation of opportunities between macro-regions.

May 2016

**Peter Frank**  
General Secretary  
ScanBalt® fmba

# 1. The role of macro-regions in health – the case of the Baltic Sea Region (BSR)

## 1.1 The BSR health care market and health economy<sup>1</sup>

In the Nordic countries (Sweden, Norway, Denmark and Finland), the transition to both a knowledge society and knowledge economy is particularly advanced and is essential for a dynamic health economy. Beyond this: Germany has consolidated its position as the leading state-of-the-art/high technology location in Europe and - in recent years - Estonia has been able to clearly sharpen its profile as an innovation-led country.

In contrast, Poland, Lithuania and Latvia are currently continuing to lag behind in the readjustment of their innovation systems. The proportion of staff working in R&D and national expenditure on R&D (and per capita R&D expenditure) are well below the EU average and in some cases, are even in decline. Therefore, BSR needs novel approaches in tackling this health innovation and research divide.

**Fig: BSR Knowledge Economy Indicators**

	Rate of employment in %			R&D staff (per 1,000 head of population)		State expenditure on R&D (share of GDP in %)		Per capita R&D expenditure	Patents per million head of population
	State-of-the-art/Hi-technology	Science-led services	Scientific/technical degree						
	2010	2010	2010	2001	2009	2000	2010	2010	2010
<b>EU 27</b>	5.6	38.5	27.5	6	7.3	1.61	1.49	490	109
<b>Denmark</b>	5.3	49.7	30.8	11.2	14.8	1.42	1.68	1302	242
<b>Germany</b>	9.9	40.0	26.5	7.8	9.4	1.76	1.94	853	266
<b>Estonia</b>	3.5	35.3	35.3	5.0	7.4	0.92	1.77	173	39
<b>Finland</b>	5.7	42.2	36.5	13.5	14.9	2.02	2.07	1303	218
<b>Latvia</b>	1.4	34.3	27.8	3.6	4.0	0.49	0.36	48	11
<b>Lithuania</b>	1.9	33.9	35.5	4.3	5.5	0.75	0.42	65	6
<b>Poland</b>	4.6	30.4	25.3	3.2	3.2	0.93	0.92	68	8
<b>Norway</b>	3.5	50.9	35.6	10.7	13.4	1.27	1.69	1099	84
<b>Sweden</b>	4.7	50.7	32.3	12.4	12.4	1.54	1.88	1270	307

Source: EUROSTAT 2012 – Calculations and design NORD/LB

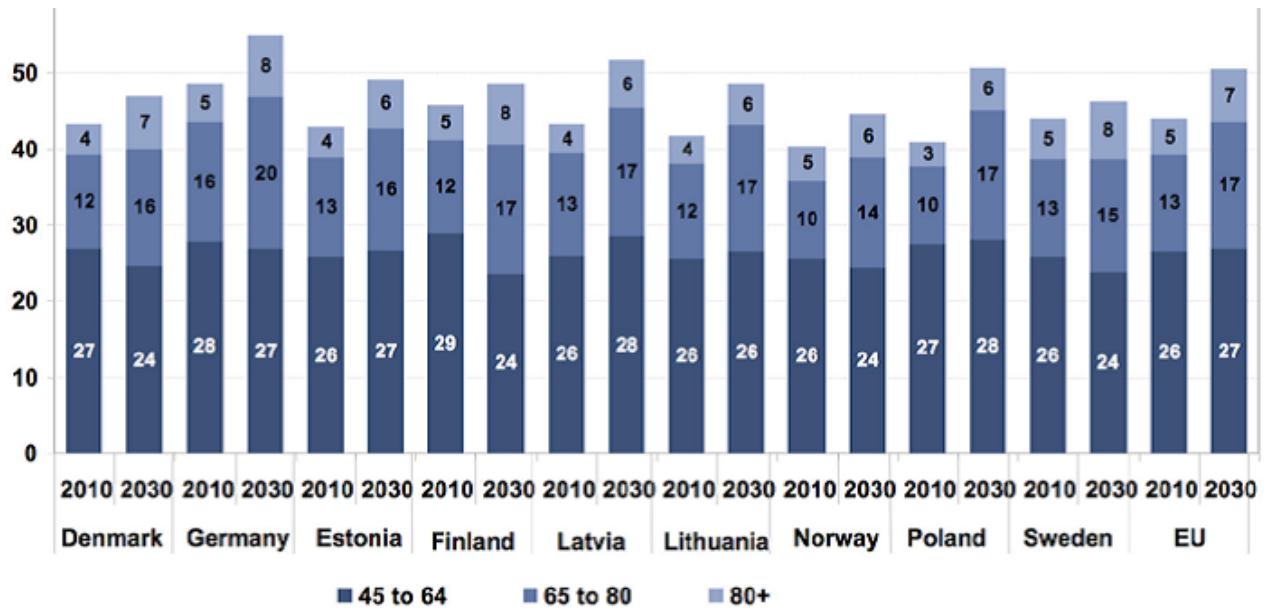
Significant demographic shifts with ageing populations and the rise in chronic diseases and comorbidities is a major driver of the healthcare sector throughout the Baltic Sea Region (BSR). Within this territory, every segment within the health sector is currently expanding to meet demand.

While the populations of the Nordic countries continue to increase, Germany, Poland and the Baltic States are confronted by declining populations. Overall, throughout the BSR, populations are becoming increasingly elderly. These shifts may of course be affected by current and future migration tendencies.

<sup>1</sup> Based on: The Health Economy in the Baltic Sea Region: Challenges and Opportunities, ScanBalt Nov 2013



**Fig: Proportion of age groups of total population in %**



Source: EUROSTAT – Calculations and design NORD/LB

Consequently the demand for medical supplies and services is growing at an above-average rate, especially in the areas of nursing, geriatric and psychosocial care, palliative medicine, preventative medicine, rehabilitation, sport, wellness, health and Ambient Assisted Living (AAL). In sum, BSR is a dynamic growth market for medical technology.

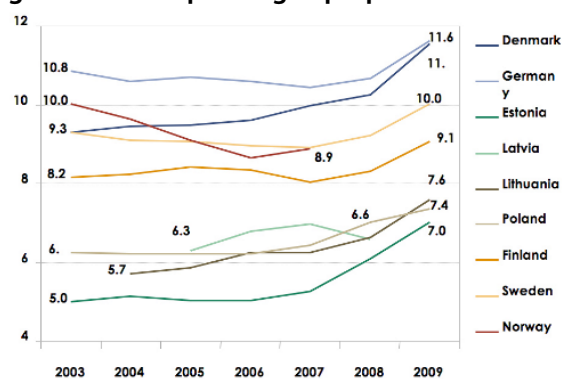
Poland and the Baltic States have a great need to catch up in the area of technical medical equipment (and the more stringent technical and hygiene standards of the EU). The demand for efficient and high-grade technical medical equipment (such as surgical installations, diagnostic apparatus, monitoring systems and tele-medicine) in the north and west parts of BSR are also on a continuous upward trend.

There are large-scale modernization and expansion plans in the pipeline in the hospital sector across the BSR. A decisive role is played by EU development funding in Poland and the Baltic States. Though concerns about whether political agendas are driving the wrong type of infrastructure investment - and associated service provision - to most effectively deal with the consequences of demographic trends in some Member States, will remain unanswered for some time. There are still differences across the BSR in terms of the frequency and quality of the available medical treatment and an increase in cross-border patient streams is anticipated. Thus specialization, cooperation and

common quality standards are needed throughout the region.

In the medium and long term the BSR is among the most dynamic healthcare markets in Europe. Healthcare spending in Poland and the Baltic States is growing at a disproportionately high rate and is approaching the average for Europe. For several years, the growth of employment in the health sector has been markedly more dynamic in the entire BSR than that of employment overall (except in Sweden).

**Fig: Health care spending as proportion of GDP in %**



Source: EUROSTAT – Calculations and design NORD/LB

In the context of the economic and financial crisis, the health sector has proved to be an important stabilizing factor for regional and national economic development. The demand for health sector employees is anticipated to continue growing significantly.

## 1.2 Fragmentation, unequal distributions and imbalances<sup>2</sup>

The BSR shares with the rest of the EU challenges such as economic disparities and lack of cohesion between the regions.

Strong geographic and social polarization is present in the Baltic States and in their healthcare provision in particular. Especially in peripheral rural areas, it is extremely difficult to ensure comprehensive high quality healthcare everywhere, and here, there is a need for new service design (based on patient-oriented regional service networks e.g. Kymenlaakso) and associated diffusion and adoption of new (and affordable) technologies.

In spite of the processes of catching up taking place in Poland and the Baltic states, there remains a great disparity between the various countries of BSR in terms of health status and life expectancy. In the eastern BSR, life expectancy and satisfaction with an individuals 'state of health' continue to be lower, with mortality above average.

**Fig: Mortality data for BSR and the EU: An example of disparities**

	Mortality in total (per 100,000 head of population), 2008	Mortality (per 1,000 head of population: 2008) resulting from				Suicides (cases per 100,000 head of population), 2008
		Heart attack (men/women)	Stroke (men/women)	Cancer (men/women)	Road accidents	
Denmark	683	98/52	59/47	246/182	5.8	10.6
Germany	582	117/62	42/36	206/133	5.4	9.4
Estonia	894	330/163	97/63	290/136	11.4	16.5
Finland	587	183/88	53/40	172/114	6.9	18.4
Latvia	1,007	397/184	174/123	295/135	15.9	20.9
Lithuania	1,034	449/240	140/110	290/142	16.8	30.7
Norway	549	99/46	45/37	196/137	6.0	10.2
Poland	819	147/69	91/64	284/152	14.6	13.9
Sweden	541	130/64	46/38	172/134	5.0	11.4
EU	696	171/89	82/64	236/136	9.7	12.8

Source: EUROSTAT 2012 – Calculations and design NORD/LB

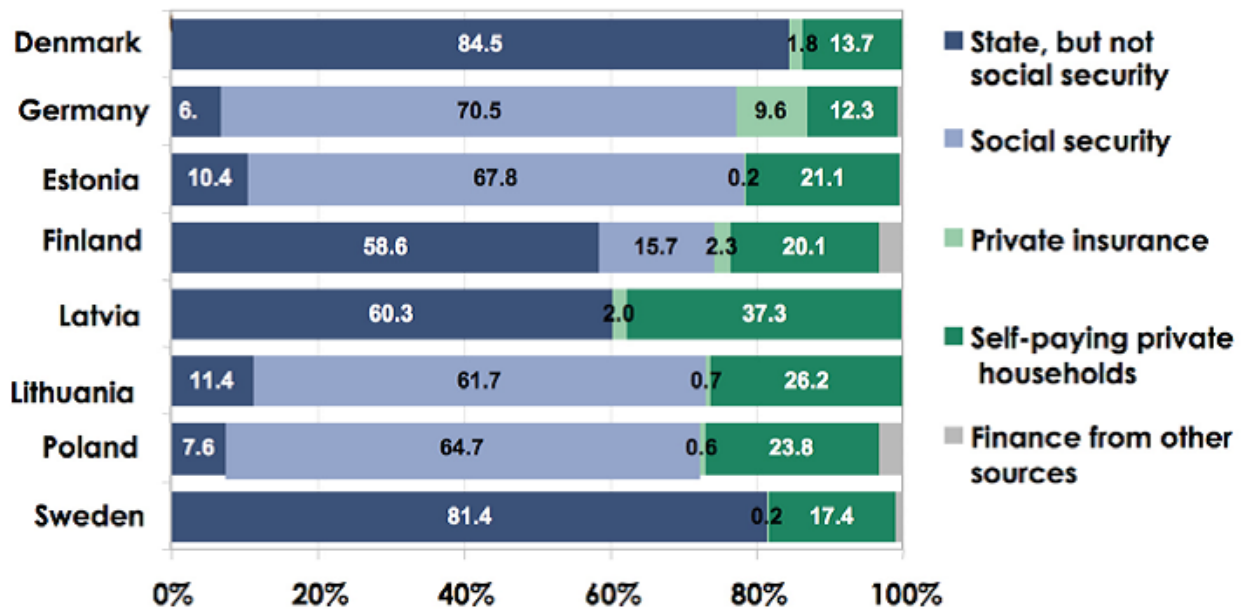
Tax-financed healthcare systems such as those of Northern Europe are faced with the challenge of remedying existing gaps in healthcare provision and resolving the issue of long waiting lists.

However, the discrepancies between the tax-financed healthcare systems of Northern Europe and Latvia and those financed by social security contributions in Germany, Poland and Estonia are gradually diminishing while combined/blended

finance is growing in importance. In the Baltic States and Poland, the sums payable by private households are relatively high (particularly in Latvia), and in many countries, private hospital and healthcare insurances are becoming increasingly important.

<sup>2</sup> Based on: The Health Economy in the Baltic Sea Region: Challenges and Opportunities, BSHR HealthPort Nov 2013

Fig: Proportion of healthcare expenditures in % (2009)



Source: EUROSTAT – Calculations and design NORD/LB

Healthcare in BSR continues to be organised very differently.

In Northern Europe, the Baltic States and Poland, healthcare centres and polyclinics offering outpatient treatment play an important part. State and communal facilities continue to dominate in-patient care in Northern Europe, while in Poland and the Baltic States, private insurances are becoming increasingly important in the hospital sector (in particular, where new hospital building and modernization are concerned). Meanwhile, the processes of privatization and concentration of services are clearly evident in Germany.

There are other major differences within BSR such as:

- How drugs are introduced and approved and the licensing of biotechnology research facilities.
- Innovative SMEs are unevenly distributed and are especially lacking in the Baltic coun-

tries and Poland, due to the shortage of financing willing to take risks, while the large industries, like pharmaceutical companies, are mostly located in the Nordic countries and North Germany.<sup>3</sup>

- Fragmentation also exists on the policy level since governmental and administrative responsibility for innovation in life science and health is widely distributed across (for example) ministries of health, education, economy and finance as well as agriculture, environment and/or regional development.

To address such challenges, much can be achieved by learning from good practice, e.g. the Kuratorium Gesundheitswirtschaft des Landes Mecklenburg-Vorpommern<sup>4</sup>, which has connected the various policy areas into one body leading to a very strong coordinated focus on the importance of health economy for regional development.

<sup>3</sup> ScanBalt Health Region (SBHR) Cross-Sectoral and Transnational Projects for Innovation in Health and in Life Sciences, Flagship Strategy, <http://scanbalt.org/projects/scanbalt+health+region/sbhr+project+strategy>

<sup>4</sup> <http://www.kuratorium-gesundheitswirtschaft-mv.de/>

### 1.3 Deficits of the innovation chains

Innovation in health care is essential to address the challenges of an ageing society, rising comorbidities, rising health care costs and a persistent and growing health divide between healthy and unhealthy citizens. However, in BSR weak trans-national and trans-sectoral coordination of the whole innovation chain is:

- Impeding generation of innovative ideas by research in the life sciences
- Obstructing development of innovative ideas by SMEs
- Slowing down transfer of innovative products and services

Also a fragmented system of research and innovation shows weak internal links and a low level of cooperation between actors<sup>5</sup>.

Critically, in seeking to be modern, responsible and sustainable health care systems<sup>6</sup>, health care providers should (i) be encouraged to become co-producers of health innovation through participation in regional and cross-border value chains and 'living labs' with industry and research facilities (ii) be open to new and affordable innovation products e.g. wearable items for the monitoring of chronic disease conditions in order to improve standards of self-care. The issue here is not the cost of new innovation products and the changes to service provision they enable. It is if their adoption reduces the demand for and the costs of acute and long-term services especially.

This is important because public expenditure on health care will jump from the present 8-12% of GDP to >14% in 2030 and continue to grow after that. But arguing that if nothing is done the pressure will be to better balance budgets, restrain excessive spending and meet the growing demands by the patients and employees<sup>7</sup>, is outdated. It has

been the established political and economic narrative shaping health care provision for the last 50 years. It is time for a paradigm shift driven by more dynamic health economics fully engaged with stakeholders and especially with end-users (patients, carers, clinicians and translational researchers).

This necessitates collaboration with industry (especially SMEs) and enhances focus on commercialization of innovative ideas from "bench to bedside" and vice versa. But this is not easy. There are significant cultural differences between the public and the private sectors. Also, public procurement procedures makes it hard for SMEs with new and perhaps more effective and affordable innovation products to enter foreign markets. Fundamentally, there is lack of efficient support structures for companies involved in health care innovation, though good examples can be found e.g. Ideklinikken in Ålborg, Denmark.

So bringing innovative solutions to hospitals is difficult and encompasses many obstacles before reaching the patient. For example nine pre-conditions were identified in ScanBalt BioRegion<sup>8</sup>:

- attract funding in the form of business angels, venture capital or investment firms
- evaluate the feasibility of the idea
- find clinical partners and communicating customer benefits
- go through quality assurance and clinical trials
- find strong management and attracting competent people
- have regional triple helix clusters and networks
- be informed about procurement rules and processes
- stay competitive in the procurement process
- have opportunities for additional training within these fields.

<sup>5</sup> ScanBalt Position Paper: EU Framework Programme 8 and the Role of Macro-Regions

<sup>6</sup> EU Council (2011) *Towards modern, responsive and sustainable health systems*, EU Council Conclusions (6 June)

<sup>7</sup> HealthCare Innovations: The best practice for HealthCare organisations to manage innovations

<sup>8</sup> Major challenges for SME-s to be commercially successful, Grete Kuura and Boo Edgar, Innovation and Entrepreneurship Institute of medicine, Sahlgrenska Academy University of Gothenburg, BSHR HealthPort 2011

At the systemic level health care is complex and models of care are changing. Health care is split into sectors which function separately: health care providers, enterprises, and research institutions, regulatory and financing institutions.

Support for innovation to develop new products and services thus has to be addressed in a holistic

***Unmet health needs and user-driven innovation are key success factors...***

way and focus on value creation and societal usefulness is essential for the long-term stability of health care systems. Unmet health needs and user-driven innovation are success factors for a new thriving innovation system.

As models of care evolve there is a need to bridge existing cross-sectoral gaps by involving key regional actors in the value chain of health care innovations<sup>9</sup>. The main objective is to support the creation of sustainable, cost-effective, citizen centric healthcare systems promoting new jobs and businesses.

A key element is to strengthen trans-national and cross-sectoral approaches for launching projects and initiatives aimed at removing disparities, gaps and barriers and fostering cooperation for innovation within the health economy in order to overcome the major societal challenges and bring innovative products to the market.

A BSR innovation ecosystem provides a promising model implementing innovation support activities in a macro-regional context with a complex network of entities and relationships. Such an ecosystem in ideal form ensures that individuals are given optimal conditions to apply their skills and

competencies while contributing to the interconnectedness and interdependency of all stakeholders<sup>10</sup>.

## 1.4 Confronting societal challenges with macro-regional concepts

The grand societal challenges are not restricted to single regions or single sectors and disciplines but are highly complex and closely interconnected.

For example, facing regional differences in health, life time expectancy and healthy ageing also means facing: the challenges of a healthy environment including development and implementation of non-fossil sources of energy and the existence of non-polluted marine and river waters and; the availability of healthy nutrition and sustainable agricultural production.

Therefore it makes sense that macro-regional concept building takes place across and within a range of sectors and that a macro-regional strategy aims to facilitate cross-sectoral collaboration and coordination for mutual benefit.

The European Union Strategy for the Baltic Sea Region (EUSBSR<sup>11</sup>) is the first (EU) macro-regional strategy in Europe. It aims at reinforcing cooperation in order to face several challenges by working together as well as promoting a more balanced development in the area. The Strategy also contributes to major EU policies and reinforces the integration within the area.

The Strategy was approved by the European Council in 2009. The Strategy aims at bringing together initiatives in different sectors (growth, sustainable development etc.) as well as promoting cooperation between stakeholders in BSR.

<sup>9</sup> Driving cross-sectoral innovation in health and life sciences - An Innovation Agenda for the Baltic Sea Region Health Economy; BSHR HealthPort, Oct 2013

<sup>10</sup> Blank, W., Frank, P., & Karopka, T. (2013). Health and Life Sciences as Drivers for Regional Development and Prosperity in the Baltic Sea Region. *Journal of East-West Business*, 19(1-2), 122–137

<sup>11</sup> <http://www.balticsea-region-strategy.eu/>

**Fig: Logo of the EUSBSR**

The Strategy promotes flagship initiatives, which have a macro-regional impact and start from joint initiatives involving partnership from different countries. ScanBalt BioRegion is such a flagship encompassing innovation in healthcare.

In practice macro-regional concepts and regional clustering promoting health economy may be applied to<sup>12</sup>:

- ➔ Promote the health economy
- ➔ Address grand societal needs and challenges with specific measures
- ➔ Reduce disparities between the levels of development between regions
- ➔ Mobilize growth potential to achieve economic, social and territorial cohesion
- ➔ Enhance investments in knowledge
- ➔ Improve framework conditions
- ➔ Reduce fragmentation
- ➔ Avoid unnecessary duplication

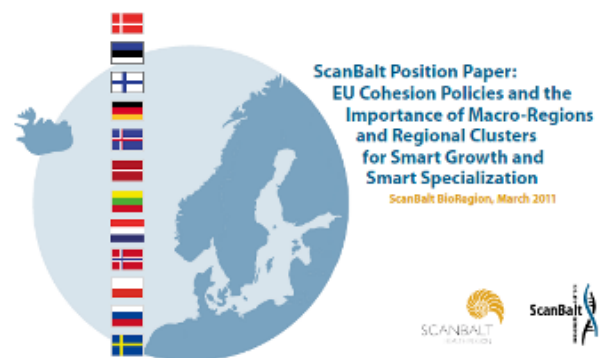
ScanBalt constantly seeks to promote macro-regional concepts in health economy for example by preparing position papers, the participation in various consultations and by dialogue with relevant decision and opinion makers.

### 1.5 Smart specialization, funding, regional/national investments

Smart specialization should prioritize domains, areas and economic activities where regions or countries have a competitive advantage or have the potential to generate knowledge-driven-

growth and to bring about the economic transformation needed to tackle the major and most urgent challenges for the society and the natural and built environment<sup>13</sup>.

To have a smart specialization strategy means to make choices for investment. Therefore obviously smart specialization and coordination between funding are closely related to each other.

**Fig: ScanBalt Position Paper, ScanBalt BioRegion, March 2011**

Collaboration at the macro-regional level can assist in promoting smart specialization in the regions and distribute good practices. It may also take an active role by building macro-regional strategies based on the principles of smart specialization, which can both shape and be aligned with national or regional policies.

A macro-regional strategy can only have credibility if it builds on input from regional stakeholders. This means, it is not a top down approach but rather a process of consensus setting between the regions identifying top priorities and appointing leaders and ambassadors of the various concrete initiatives who have the capacity to drive them forward.

This process has been ongoing in ScanBalt BioRegion since 2001 and essentially follows the 6 steps of smart specialization<sup>14</sup>. Those steps were only described in the EU S3 platform much later;

<sup>12</sup> ScanBalt Position Paper: EU Cohesion Policies and the Importance of Macro-Regions and Regional Clusters for Smart Growth and Smart Specialization, ScanBalt BioRegion, March 2011

<sup>13</sup> <http://s3platform.jrc.ec.europa.eu/ris3faq#1>

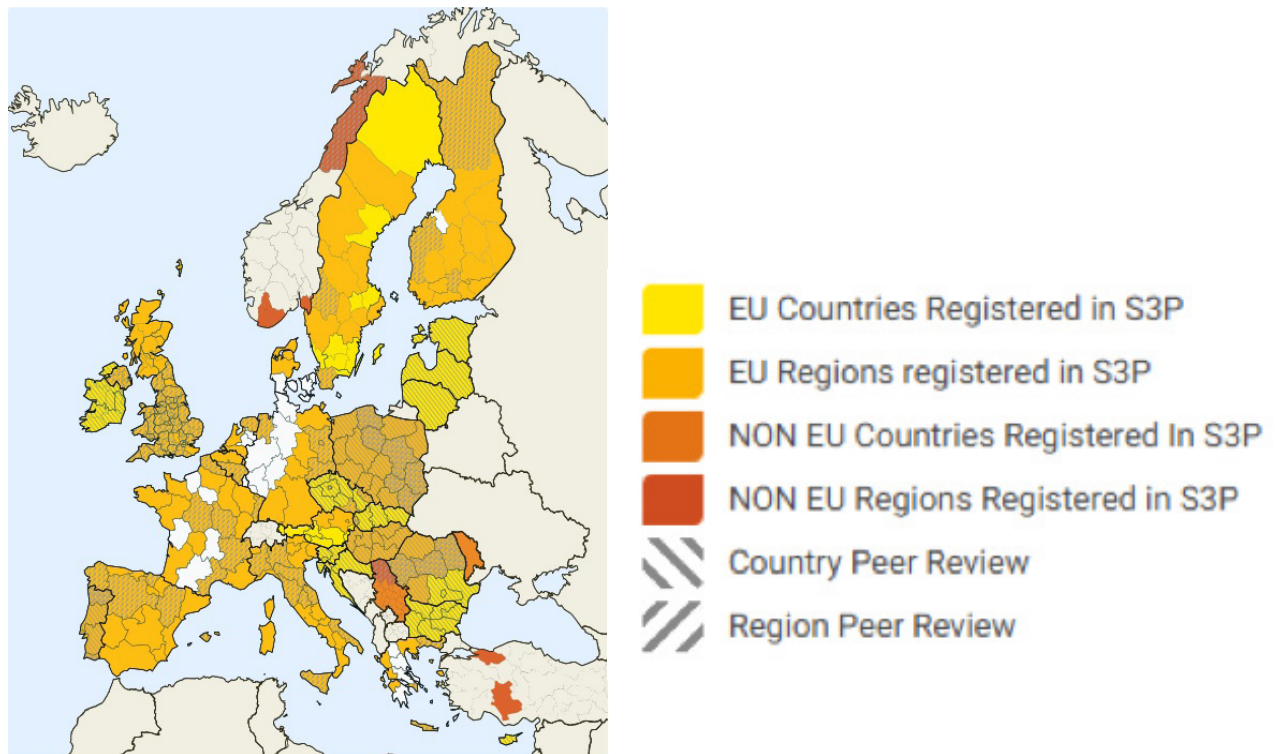
<sup>14</sup> <http://s3platform.jrc.ec.europa.eu/s3pguide>

therefore the term was not applied by ScanBalt BioRegion before 2014. However, the contents are essentially the same:

- (1) Analyzing the innovation potential
- (2) Setting out the (RIS3) process and governance

- (3) Developing a shared vision
- (4) Identifying the priorities
- (5) Defining an action plan with a coherent policy mix
- (6) Monitoring and evaluating

**Fig: Participating regions and countries in EUS3 platform**



Source: <http://s3platform.jrc.ec.europa.eu/>

For the ScanBalt BioRegion, going through these steps required external co-funding from: Structural Funds, FP 6, FP7, Horizon 2020 and the Nordic Council in addition to national and regional public-private investment.

Member fees from public and private entities and networks finance the basic operations required to run the processes in a continuous manner.

DanuBalt in 2015 described how structural funds (ESIF) and smart specialization (RIS3) connect<sup>15</sup>.

First, RIS3 is an ex ante conditionality for the European Regional Development Fund investments in research and innovation to ensure that the ERDF funds: (1) fit into the overall research and innovation policy (as outlined in the Innovation Union's flagship "Features of well performing national and regional research and innovation systems"); (2) complement the existing national or regional funding and governance and legal measures that form part of their policy mix and (3) support effective and efficient measures that provide incentives to private R&I investments.

<sup>15</sup> [http://www.danubalt.eu/files/graphics/Illustrations/Briefing%20about%20ESIF%20and%20RIS3\\_v3.pdf](http://www.danubalt.eu/files/graphics/Illustrations/Briefing%20about%20ESIF%20and%20RIS3_v3.pdf)

Second, in principle, the use of funds from an Operational Programme for Technical Assistance (OPTA) under the current Structural Funds for RIS3 development activities is possible, but needs to be checked in each individual case against the text of the OP and the availability of budget

However a macro-region has the potential to guide more comprehensive alignment between Structural Funds and EU policies. In particular macro-regional collaboration can mobilize regional and national investments which other wise would not have been available for trans-national collaboration following a common vision and strategy for the macro-region.

In ScanBalt BioRegion this is most clearly seen in the role of regional liaison offices which invest into trans-national collaboration within topics of their particular interest and where they have a specific competence but still referring to the overall strategy for ScanBalt BioRegion.

## 1.6 Involvement of stakeholders into macro-regional development

For ScanBalt BioRegion with its key focus on health and health care the ambitions of the regions and the regional networks constitute the basis of the organization.

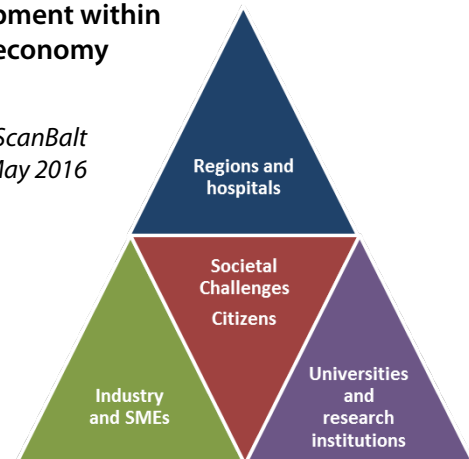
The vision is that ScanBalt will be the main platform for promoting innovation, competence development and efficient sharing of existing resources and infrastructures in Health and Life Science in the BSR<sup>16</sup>.

This clearly indicates that companies, universities and university hospitals play a pivotal role together with the patients and the citizens at large.

Both at the strategic and tactical level it is important to recognize that the stakeholders in macro-regional development have different interests and thus can be expected to be involved in different ways and to differing degrees.

**Fig: Key stakeholders in macro-regional development within health economy**

Source: ScanBalt  
May 2016



The regions and/or their networks and clusters can play a very active role in the agenda setting, strategy development and strategy implementation since macro-regional concepts within health are a tool to assist solving the regions societal challenges.

The regions are often the owners of the health care providers or buy the health care services externally. So, they will thus play a direct role by entering into concrete trans-national projects in order to e.g. promote better service, reduce costs and enhance shared use of infra structures.

Large companies deliver therapeutic and innovative solutions and may benefit strategically from e.g. an increased focus on the health economy around the BSR, the focus on promoting BSR as one test and development site, better access to registries and efforts to keep clinical trials within the BSR maybe accessed via a one-stop-shop portal.

Additionally, they may benefit from enhanced mobility of the workforce, access to pools of skilled workers and efforts to attract and retain talents. It should be noted though that the regions are fierce competitors for talents and that a macro-regional concept should not engage in activities leading to brain drain from individual countries or regions - only in mutual beneficial activities.

<sup>16</sup> ScanBalt BioRegion: Solving Societal Challenges on Top of Europe, ScanBalt Strategy 2015-2018



However, large companies have various channels available. They can use their own resources and are often key drivers behind the regional clusters. Therefore they may be positive but otherwise leave it to the regional clusters to be active participants unless there are specific projects and activities that meet their interest.

SMEs play a key role for innovation in the macro-region and as providers of innovative products, solutions and services. They often lack and/or can't afford international network, market access, visibility and competencies and thus may benefit from services offered by a macro-regional concept complementing the regional clusters or networks.

However, SMEs cannot be expected to be active in the discussions and processes happening daily in a macro-region. This will not be in their concern unless they are a direct service provider to the macro-regional set-up or some of its activities. Instead they may appear in specific projects financed e.g. via vouchers or sub-contracts or as participants in match making events, innovation competitions, business plan preparations etc.

Universities are very valuable assisting setting the goals and priorities of a macro-region, delivering analysis and developing solutions to meet specific challenges. However, their natural priority is not regional economic development but delivery of competencies (people), knowledge (research) and collaboration with the best on a global scale.

Thus they tend to prioritize their participation to be at the concrete project level unless they have specific priorities to promote at the macro-regional level such as attraction of students or enhanced participation at conferences, events etc.

It is noteworthy that some universities appear to refuse participation in projects financed by Interreg Baltic Sea Region. Their reasoning is that they face excessive bureaucracy compared with the average project budget size and co-funding rate. The same holds true for companies and it may be a problem to promote innovation and competitiveness if two of the 3 pillars in triple helix cluster collaboration find it difficult to participate. This is

a specific obstacle for the programme, to be discussed elsewhere.

Since the macro-region is a tool to assist the regions with their ambitions and meeting societal challenges, it makes sense to establish that participants in the regional clusters and networks are per definition also participants in the macro-region. This shows that they should only pay a fee or deliver an in kind service to their regional organization but can benefit from all services offered by the macro-region. In fact, a key issue for stakeholder involvement is to avoid unnecessary competition between macro-region and regions – In practice competition for memberships, participation and attention.

***...a key issue in stakeholder involvement is to avoid competition between macro-region and regions – In practice competition for memberships, participation and attention.***

One consequence of this thinking is that the macro-region has a natural limit on its budget. This forces it to innovate and to use new thinking in order to utilize the scarce resources in the best possible manner while ensuring a high impact. Organizational innovation is thus a demand in order to achieve the ambitions with the available resources.

## 1.7 EUSBSR from a practical point of view

As previously mentioned, EUSBSR was approved in June 2009 as the first multi-sectoral EU macro-regional strategy. EUSBSR is a very useful umbrella and point of reference for the sectoral strategies developed by ScanBalt since 2001.

In practice EUSBSR is an additional communication channel promoting better mutual coordination between the policy levels and the operative stakeholder levels. The EUSBSR has helped attract significant attention towards macro-regional collaboration among regional decision and opinion makers though it still appears that in some regions

BSR collaboration is not a high priority. To some degree this is understandable since the competition for scarce resources is tough and the mantra so far has been “no new money”. In addition EUS-BSR was born in the middle of a financial crisis, which did not make it easier to decide whether to invest into BSR collaboration.

However, it is noteworthy that BSR collaboration increasingly seems to shift from being policy driven to being driven by market demand, which is very positive<sup>17</sup>. This shows that stakeholder level operative collaborations should be given more attention and play a central role in EUSBSR.

The rationale behind EUSBSR fit perfectly with the rationale of ScanBalt BioRegion: the two are complementary. ScanBalt thus strongly supports the continued development and implementation of EUSBSR.

Likewise ScanBalt strongly supports the wider implementation of EU macro-regional strategies, not only for BSR but also throughout Europe as an effective tool for enhanced coordination and implementation of trans-national and cross-sectorial efforts in order to reach regional, national and EU objectives.

Health and the health economy are still not as prominent in EUSBSR as ScanBalt could wish for. However, a major step forward was recently made at the 24th Baltic Sea Parliamentary Conference (BSPC), August 2015 in Rostock.

The conference resolution<sup>18</sup> gave strong support to ScanBalt and the ScanBalt strategy 2015 – 2018, the EUSBSR flagship Health Region and the proposed health economy initiatives. The conference for example called for joint initiatives against multi-resistant bacteria, which is a ScanBalt priority<sup>19</sup>.

### Picture: 24th Baltic Sea Parliamentary Conference 2015 in Rostock



Picture: Jens Büttner

Dialogue before this conference - between the Baltic Sea Parliamentary Conference, the Lithuanian EU Commissioner for Health and Food Safety Vytenis Andriukaitis, The Northern Dimension Partnership in Public Health and Social Well-being and ScanBalt - helped strengthen the focus on Health and the Health economy<sup>20</sup>.

As EUSBSR helps enhance coordination between related areas and disciplines this may lead to new opportunities. A concrete example is that the Northern Dimension of Public Health and Social Well Being and ScanBalt are now intensely interacting and collaborating, which is mainly a result of the EUSBSR.

Another example is a new (2016) RIS3 initiative with focus on eHealth, which could promote BSR as an innovation hub for health- and welfare services for people with chronic diseases. Here EUS-BSR has been a lever to bring various flagships and stakeholders together, such as Region Skåne, BSR Stars, ScanBalt, EU S3 Platform, Vinnova and the Polish Ministry of Science and Education.

Of course there are also issues connected with EUSBSR that give reason for concern.

<sup>17</sup> One of the conclusions in the discussions at the 17th Baltic Development Forum Summit, Copenhagen, 23rd November 2015

<sup>18</sup> <http://www.bspc.net/file/show/824>

<sup>19</sup> <http://scanbalt.org/files/graphics/Illustrations/24.%20BSPC%20Resolution%20Final.pdf>

<sup>20</sup> Baltic Sea Parliamentary Conference 2015: Important to focus on Health and Health Economy, ScanBalt News, February 2015

EUSBSR is generating strongly increased competition for the limited available resources both regionally and nationally. Many new networks and collaborations appear as a result of the strategy, often ordered into flagships and sub-projects. This is in itself very positive if it leads to enhanced mobilization of regional and national resources for trans-national collaboration.

The increased competitive pressure on ScanBalt BioRegion has enhanced the demand for more direct and visible added value for the members. This

***The increased competitive pressure on ScanBalt BioRegion enhanced the demand for more direct and visible added value for the members. This is actually beneficial...***

is beneficial as it ensures that ScanBalt BioRegion continues to develop and adapt to changing situations.

As a result and since 2009, ScanBalt BioRegion has increased its focus and enhanced specialization. This is most clearly seen in the new strategy 2015 – 2018 “Solving Societal Challenges on Top of Europe”. Here innovation in health care systems and the participation of regional authorities and their clusters and networks has been emphasized and key topic is the “Baltic Sea Region as One Test and Development Site for Health Care Products and Services”.

But there is of course a point of saturation where it becomes increasingly difficult to maintain the flagships sustainable at least if the intentions are they should be more than just platforms or umbrellas for delivering project proposal mainly to the Interreg Baltic Sea Region.

It therefore may be time to discuss how existing initiatives can be consolidated e.g. via mergers while still maintaining an open door for new interesting ideas.

## 2. Existing models and concepts for ScanBalt BioRegion

### 2.1 The importance of knowing the region – Competence hubs and satellites

Any macro-regional initiative requires knowledge about the stakeholders.

It is often an immense task to obtain a full and complete overview due to the many sub-regions and information is not always available at the regional level. And even if one should manage the information will quickly be outdated so it is only a snapshot.

Still a snapshot is crucial in order to develop models and strategies for collaboration and to identify

and involve ambassadors for the initiative. The process itself of preparing a snapshot assists to identify stakeholders who may carry the initiative forward both at the operational level and at the policy level.

The importance of a snapshot was clearly demonstrated with the FP6 project ScanBalt CompetenceRegion<sup>21</sup> (SCR). The board of ScanBalt decided in 2004 that high priority should be given to enhance the transparency and visibility in ScanBalt BioRegion which resulted in SCR coordinated by BioCon Valley in Mecklenburg-Vorpommern.

<sup>21</sup> [ftp://ftp.cordis.europa.eu/pub/food/docs/scanbalt\\_competenceregion\\_inco\\_biotech.pdf](ftp://ftp.cordis.europa.eu/pub/food/docs/scanbalt_competenceregion_inco_biotech.pdf)

It was the objective of SCR to provide an extensive and structured mapping of ScanBalt BioRegion with respect to stakeholders, competencies, framework conditions and other relevant factors on a globally comparable basis.

In particular SCR sought to spot globally competitive core competencies and capabilities.

### About ScanBalt CompetenceRegion (FP6)

- Identifying, mapping and assessing the resources and competencies of the region within health and life sciences, as well as increasing mutual awareness and visibility among the key actors
- Developing a future-oriented strategy to ensure maximum exploitation of competencies and resources
- Developing a model case for joint regional strategies and ways to strengthen the competitiveness of ScanBalt BioRegion.

The project was coordinated by BioCon Valley and had 10 BSR partners

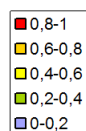
<http://www.scanbalt.org/projects/finalised+projects/competence+region+fp6>

The knowledge gathered in SCR led to a basic model for ScanBalt BioRegion based on competence hubs and competence satellites giving a role for both metropolises and remote regions. The point is that not only the metropolises have scientific or industrial niches where they can be competence hubs, these can be identified as well in the remote regions. So a remote region may very well be a competence hub within its niche.

It was concluded that a macro-regional cluster collaboration should not have as an aim to remove competition between clusters or equalize them according to any standards which is a fundamen-

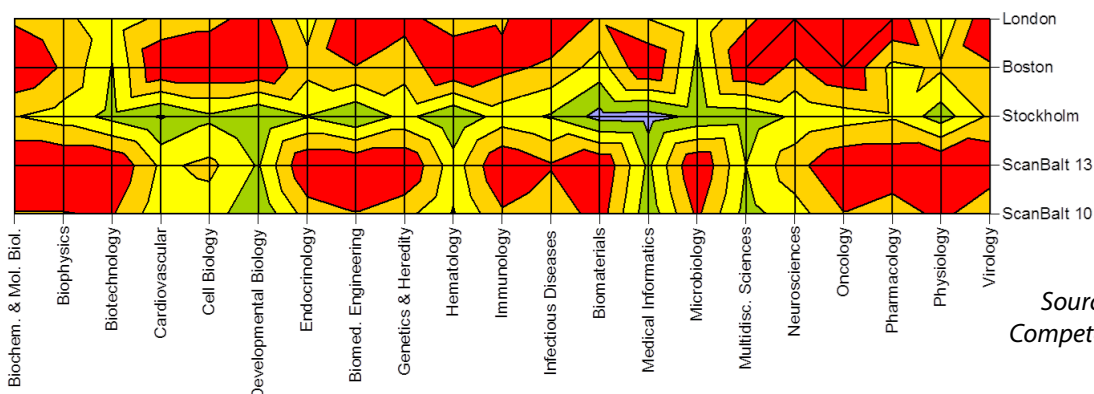
tal for ScanBalt BioRegion to this day. The clusters can learn from each other, but each cluster represents very specific regional competencies and objectives and should be developed according to specific regional needs, demands and resources.

The focus of a macro-regional cluster collaboration would then be to develop strategies for targeted networking within selected disciplines where strong regions (within the respective disciplines) can be regarded as “competence hubs” while other regions with a competence fit are regarded as “competence satellites”.



**Fig: An example of a competence map prepared in SCR.**

Red corresponds to the highest competence level, blue the lowest. Red spots shows where ScanBalt BioRegion may be competitive with London and Boston. It also as an example shows that Stockholm alone is not competitive with either. This would hold true for most capital BSR cities within the selected disciplines.



Source: ScanBalt  
CompetenceRegion  
2006

The efforts of knowing the region have been continued since nearly all projects include elements of doing snapshots. Projects like Boosting Baltic FP6 (FP6, 2004 – 2006), Boost Biosystems FP 6 (FP6, 2006 – 2008), Trays Prime (FP6, 2007 – 2008), Bridge-BSR (FP 7, 2007 – 2009), BSHR HealthPort (BSR programme, 2010 – 2014) all contributed to increase the knowledge about ScanBalt BioRegion.

A benefit of ScanBalt is its function as a center of knowledge for all the information gathered. The knowledge would probably be more difficult to keep available for interested parties and activities without a certain level of macro-regional organization. Of course knowledge can be stored in the cloud available for all – But the experience build up in the persons who constitute the network is another matter.

## 2.2 ScanBalt BioRegion as a string of clusters

As mentioned one conclusion in SCR was that cluster based innovation may take place in metropolitan as well as in remote and lower populated regions given the right conditions and the right focus.

SCR identified<sup>22</sup> 3 basic types of clusters namely (1) scientific fountains; (2) co-location clusters with both science and industry present and (3) mode 3 clusters which are triple helix clusters with close

interactions between science, industry and authorities.

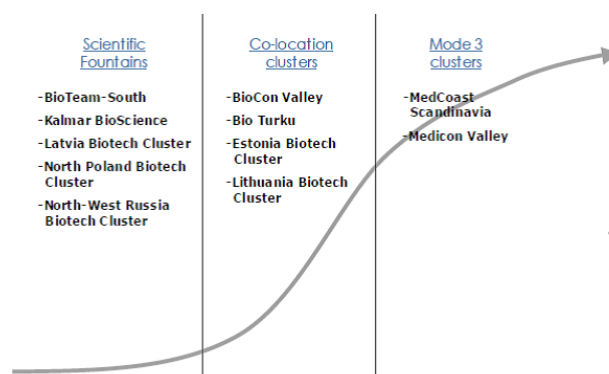
There are several ways of characterizing clusters but these definitions served well for the intentions of SCR.

It is important to notice that the definitions should not be seen as a kind of given development path for a cluster (from mode 1 to 3). It may very well make regional sense to stay first of all as a scientific fountain or in any other of the 2 modes. This is entirely depending on the regional needs and demands.

Taken together the clusters in ScanBalt BioRegion are able to match the global front running clusters in the US within selected disciplines and the local strength of one cluster can match the comparative weakness of others opening a window of opportunity for increased collaboration.

The various modes of the clusters made it reasonable to believe that clusters could be brought together in closer collaboration for mutual benefits as they may complement each other.

Indeed SCR concluded that ScanBalt BioRegion can be seen as a string of clusters each with the potential to bring added value to the macro-regional value chain and potentially contributing to enlarge the overall societal benefits from health and life sciences.



**Fig: Basic cluster types identified in SCR.**

The figure also illustrates how volatile the landscape of clusters are as several of the clusters mentioned have been re-organized, ceased to exist or have been replaced by other clusters organizations or networks.

Source: ScanBalt CompetenceRegion 2006

<sup>22</sup> ScanBalt: A string of competence clusters in life science and biotechnology (2006): <http://www.scanbalt.org/files/graphics/ScanBalt/news/ScanBalt%20Competence%20Region%20-%20A%20string%20of%20clusters.pdf>

## 2.3 Connecting Competencies and creating critical mass

Another priority agreed upon by the board of ScanBalt in 2004 was to identify and connect human spearhead resources in ScanBalt BioRegion within research and education, promote mobility and shared curricula and strengthen links to industry.<sup>23</sup> In 2005 an Interreg IIIB co-funded project ScanBalt Campus (SBC) coordinated by Gothenburg University took up this challenge.

SBC was established as a catalyst and umbrella for creating active transnational triple helix Knowledge Networks in ScanBalt BioRegion within research and education. Eight multi-partner SBC Knowledge Networks were established with concrete research and education ongoing in collaboration with industry involving approximately 50 SME's in various projects.

The networks intended to increase transnational cooperation, coordination and mobility among universities, companies and hospitals within ScanBalt BioRegion in a bottom-up manner.

SBC aimed to develop the Knowledge Networks as a tool to bridge academic research and industry and integrate intellectual property management in each network in order to enhance commercialization. The basic principles of the Knowledge Networks are still applied today in ScanBalt.

A very positive outcome of SBC was that some of the initiated Knowledge Network went on to more lasting collaborations with industry aiming for products development and commercialization e.g. within lignin-based products.

It was also assumed that the universities participating in ScanBalt Campus would appreciate a long term sustainable neutral platform for collaboration but this appeared not to be the case.

The mantra from the universities was that they prefer to collaborate with the best in a global perspective and thus were not particularly interested

in a regional dimension as BSR. One may argue that there is no contradiction and that it is not a choice between the two options, they rather complement each other.

Also it may appear a bit optimistic since very few BSR universities have global top rankings and are therefore not necessarily the first choice for collaboration among the top ranked institutions.

Anyway, it became evident that while universities may be seen as important solution and knowledge providers to specific problems they could not in general be expected to be key drivers for macro-regional collaboration.

There do though exist more permanent BSR-oriented university collaborations like The Baltic Sea Region University Network (BSRUN) which covers the eastern part of BSR. Another is The Baltic University Programme (BUP) which includes institutions from the entire BSR but does not have a focus on health and health care.

A promising new mainly university collaboration Sustainable Development Solutions Network Northern Europe (SDSN NE) is led by GMV, Gothenburg University and Chalmers and is strongly supported by ScanBalt.

SDSN was established in 2012, under the auspices of UN Secretary-General Ban Ki-moon. It is a global multistakeholder network that aims to identify and share the best pathways to sustainable development and mobilize academia, civil society, the private sector and financing institutions to find and disseminate innovative and applicable solutions at local, national, and global scales. SDSN NE (<http://www.unsdsn-ne.org/>) is a regional SDSN network for Northern Europe and part of the global SDSN.

Health and health care are in focus in some of the Sustainable Development Goals (SDG) of SDSN NE not least within the SDG "Good health and Well-being".

<sup>23</sup> ScanBalt BioRegion: Creating Global Competitiveness and Regional Cohesion, Peter Frank, Life Science Clusters, Summer 2007, p. 22 – 24.

**Fig: Sustainable Development Goals (SDG) of SDSN as of Feb 2016.**



Source <http://www.unsdn-ne.org/>

The SDSN NE pools knowledge, experience and capacities of the regions' academic, business and civil society actors and strives to promote the national and regional sustainable development of Northern Europe, as well as the region's efforts for sustainable development worldwide.

SDSN NE successfully held its kick-off 25 February 2016 with the participation of the Swedish prime Minister.

## 2.4 Mapping and building up Intellectual Property Competencies

The third initial priority agreed upon by the board of ScanBalt in 2004 was to connect IP competencies in ScanBalt BioRegion and enhance the awareness of Intellectual Property Rights (IPR) and other IP-issues in order to increase the commercialization of academic research.

This led to the establishment of the ScanBalt Intellectual Property Knowledge Network (ScanBalt IPKN) co-funded by EU FP6<sup>24</sup> and coordinated by Chalmers University of Technology.

The objective of ScanBalt IPKN was to facilitate regional cooperation and coordination of research

and education in the field of intellectual property (IP) management in order to boost supply and demand as well as accessibility of IP knowledge throughout the ScanBalt BioRegion.

The ScanBalt IPKN acted both to strengthen regional IP expertise in bioscience, IPR construction, IP management, and its implications on bioscience research and development - and broaden general IP awareness and competencies in how to use IP to create value in the innovation process - from idea creation and protection to commercialization and business development.

An extended mapping of supply and demand of biotech IP management strategies in ScanBalt BioRegion was conducted in order to establish a platform that allowed the ScanBalt IPKN to reach out to its target group.

## 2.5 The first ScanBalt BioRegion Innovation Model

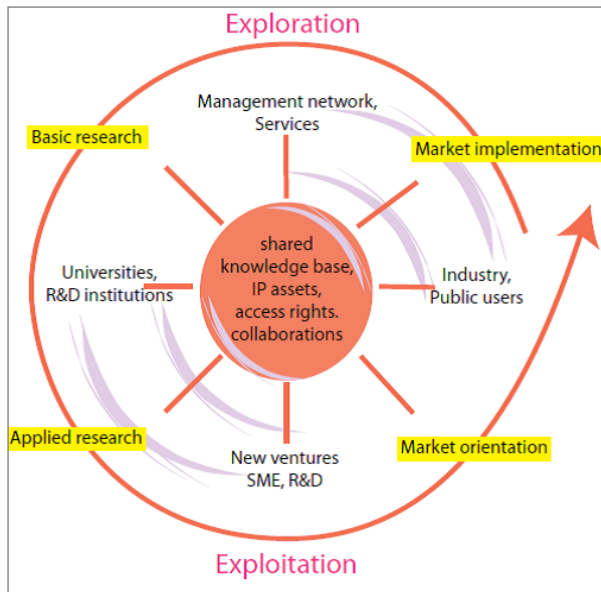
Taking into account the findings and results in (1) ScanBalt CompetenceRegion; (2) ScanBalt Campus and (3) ScanBalt IPKN, a ScanBalt Innovation Task Force (SB ITF) during 2006 and early 2007 developed an innovation model for ScanBalt BioRegion.

<sup>24</sup> [http://cordis.europa.eu/project/rcn/74058\\_en.html](http://cordis.europa.eu/project/rcn/74058_en.html)

<sup>25</sup> Based on ScanBalt BioRegion: Creating Global Competitiveness and Regional Cohesion, Peter Frank, Life Science Clusters, Summer 2007, p. 22 – 24.

The model constitutes a strategic approach for bridging academic research and industries in the ScanBalt BioRegion building on transnational initiatives. The efforts should strengthen the macro-regional value chain and promote cohesion between the regions.

**Fig: Innovation model for ScanBalt BioRegion (2007).**



Source: ScanBalt Innovation Task Force 2007

The ScanBalt BioRegion Innovation Model sees technology transfer between academia and Industry as the main target for its efforts. This should build on enhanced trans-national bridges between public research and Industry in order to create new ventures and strengthen competitiveness of the existing ones, in a circular movement between basic research, applied research and market orientation.

IP assets are here to be understood in a broad sense as human resources, intellectual property rights and networks.

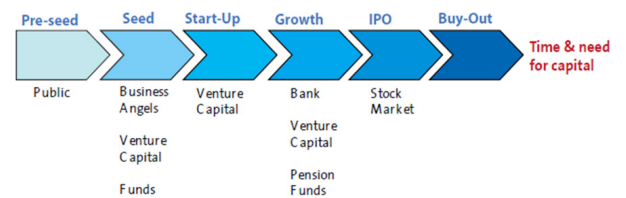
The model is based on open innovation approaches to R & D, combining in-house expertise with external resources and aiming to maximize economic value from their intellectual property.

## 2.6 Lack of finance for bridging research and SMEs

In addition the SB ITF in 2006 identified the availability of risk financing in the early SME development phases as a critical parameter for a successful development of research based companies in ScanBalt BioRegion.

A lack of risk-aware financing and consequent access to capital dramatically lowers the potential number of spin-outs from Universities and research institutions that are fit to pass the initial phase, where they are financed by public pre-seed financing.

**Fig: Financing model, SB ITF 2006**



Source: ScanBalt Innovation Task Force 2006

This is due to the fact that the private investors in life sciences and biotech have moved increasingly closer to the market creating a gap in the public pre-seed financing area. Therefore the seed phase seen in the figure has been increasingly depleted for financial resources.

This is a challenging barrier and bottleneck for the successful development of research based SMEs. Consequently the SB ITF found it a necessity to set an agenda in ScanBalt BioRegion which effectively would mobilize regional and national private and public financial resources in order to overcome the financing barriers for SME research-based development.

Only by mobilizing risk-taking investment sources can ScanBalt BioRegion - or other regions for that matter - effectively bridge academic research and growth of SMEs.

There is a clear line from these discussions (plus the discussions in Bridge-BSR, see the following) and to Accelerace Life, a cross-border accelerator



covering seven different BSR markets. It is the only cross-border Health Tech Accelerator in Europe and has worked with over 100 start-ups and spin-offs.

In fact several members of ScanBalt are involved in Accelerace Life, and then Chairman of SB ITF – who is today (2016) Chairman of ScanBalt - Jaanus Pikani, was involved in the discussions leading to its establishment.

## 2.7 ScanBalt Modular Shared Business Support and Service (SMS-BSS)

The conclusions by SB ITF and the discussions at the board of ScanBalt led to the establishment of the EU FP 7 co-financed project Bridge-BSR (2008 – 2010) coordinated by ScanBalt.

Bridge-BSR saw cluster development as an integrated tool to increase impact of policies and enhance public-private collaboration. However to do so it was necessary to bridge the broad gap in cross-border efforts to support SME based innovation beyond the interests from the single regions.

Therefore Bridge-BSR aimed to (1) develop tools to overcome the gap within life sciences/biotechnology in ScanBalt BioRegion; (2) identify regional bottlenecks in ScanBalt BioRegion for bringing the benefits of academic research to SME's; (3) develop a regional innovation agenda; (4) promote mentoring; (5) promote use of best practises and benchmarks plus (6) initiate pilot activities.

Three pilot activities focussed on (1) Model development for trans-regional integration of IP-management; (2) A BSR life Science investment structure; (3) Shared SME support service.

An innovation agenda<sup>26</sup> "Smart Growth – Bridging Academia and SMEs in the Baltic Sea Region" was prepared which proposed to establish a ScanBalt Modular Shared Business Support and Service (SMS-BSS).

The SMS-BSS should be delivered and marketed as a virtual portfolio with different modules to be initiated depending on customer demand or based on priorities set by the ScanBalt BioRegion community. The total portfolio would rely upon the regional competencies of the SMS-BSS partner organisations and each module partnership should include competence hubs and satellites.

SMS-BSS constitutes a flexible model of organizing shared support and services which can be extended according to needs, competencies and priorities and quickly be adapted to a rapidly changing market. SMS-BSS is today a basic fundamental of the ScanBalt organisation.

An overview of the envisioned initial basic support and service portfolio is depicted in the table below and can be differentiated into building blocks where each block may contain several modules, each module with its own partnership construction (see table next page).

Blocks and modules may be set-up so they actively interact with each other in order to enhance effectiveness and improve sharing of limited resources, so SMS-BSS should be regarded as a non-rigid and open model.

The innovation agenda prepared in Bridge-BSR had as a priority to establish an effective BSR financial cross-border support infrastructure for research, development, innovation and education preferably in collaboration with private funds and investors.

ScanBalt operates on several levels to promote the issue of financing as follow-up. In EUSBSR financing became a separate flagship within Priority Area Innovation which so far has led to enhanced collaboration between Nordic public funds to promote BSR innovation oriented projects.

Investors, members of ScanBalt and ScanBalt itself has – as mentioned - been involved in setting up a seed facility project to validate a new acceleration and acceleration financing model for BSR.

<sup>26</sup> Smart Growth – Bridging Academia and SMEs in the Baltic Sea Region (Aug 2009)

The facility Accelerace Life works to validate and implement their acceleration platform and aims to prepare the first fully sustainable international accelerator<sup>27</sup>. Bridge-BSR successfully integrated an

Innovation Agenda into the EU Baltic Sea Region strategy resulting in the flagship project ScanBalt Health Region.

**Table: Building blocks of SMS-BSS and examples of their actual implementation**

Type of service or support	Activity	Examples of activities
<i>Information &amp; marketing</i>	Basic information and marketing by regional cluster and networking organisations. Gives access to information services in ScanBalt BioRegion	<a href="http://www.scanbalt.org">www.scanbalt.org</a> ; ScanBalt Business Club, ScanBalt News, ScanBalt EU Digests, presentations and exhibitions
<i>Networking &amp; partnering</i>	Comprises network management and organisation of contacts and meetings between SMEs and actors from i.e. universities, research institutions, service providers	Regular regional round tables, partnering events, network guides as support, collaboration with Enterprise Europe, support to regional conferences with global potential, ScanBalt Sharing Market Place <a href="http://www.floow2.com/scanbalt.html">http://www.floow2.com/scanbalt.html</a>
<i>Project incubation and management</i>	Development and implementation of joint cross-border projects between public-private partners like SME-Academia	2 annual project accelerator days, quarterly project discussion at the board, idea scouting, partner search, application support, project management. Close collaboration with the Steinbeis Foundation.
<i>Consultancy and coaching</i>	Consulting & coaching activities delivered by the partner organisations	Professional business development support in combination with manuals and guidelines e.g. preparation of business plans for SMEs. Integrated into several EU projects. ScanBalt as one-stop-entry.
<i>Financing</i>	The module covers all questions of financing support delivered with external partners and may be connected with access to financing infrastructure.	SME matchmaking with investors, development of financing networks, Accelerace Life <a href="http://www.acceleracelife.com">www.acceleracelife.com</a>

<sup>27</sup> <http://www.acceleracelife.com/news/baltic-regional-team-looks-for-financial-motivation/>

## 2.8 ScanBalt Business Club – Example of an SMS-BSS Module

The ScanBalt Business Club ([www.scanbaltbusiness.com](http://www.scanbaltbusiness.com)) was established to promote awareness, visibility and match making for companies and organisations located in the Baltic Sea Region. Various platforms and tools support ScanBalt Business Club including ScanBalt News (nearly 20.000 subscribers), [www.scanbalt.org](http://www.scanbalt.org) and the ScanBalt BioRegion network.

The EU supported the development of ScanBalt Business Club with a technical assistance grant for the flagship Health Region. ScanBalt Business Club is a free service for the companies and operated by ScanBalt. Some of the offers to the companies are:

- ➔ Product and company news brought in ScanBalt News (nearly 20.000 subscribers) and on [www.scanbalt.org](http://www.scanbalt.org)
- ➔ Company portraits brought in ScanBalt News and on [www.scanbalt.org](http://www.scanbalt.org)
- ➔ CEO interviews and industry opinions brought in ScanBalt News and on [www.scanbalt.org](http://www.scanbalt.org)
- ➔ Company portraits distributed in the ScanBalt BioRegion Network
- ➔ Invitations to participate in events at discounted rates
- ➔ Invitations to present at ScanBalt press study tours
- ➔ Invitations to participate in EU projects via business plan preparations, vouchers etc.

ScanBalt Business Club has shown to be a popular service for the clusters and their SME members and can be operated at fairly low costs since it is mainly composed of existing tools in addition to the specific ScanBalt Business Club web.

Efforts are ongoing to add further services to the Business Club.

## Fig: ScanBalt Business Club – A popular service for SMEs



Source: [www.scanbaltbusiness.com](http://www.scanbaltbusiness.com)

## 2.9 Project Incubation and management – Example of an SMS-BSS Module

Project incubation and management has been a fundamental of ScanBalt BioRegion since the very beginning. It is organised into a set of processes running continuously as a service for the clusters and their members.

Project incubation and management is an example of a module which is based on external assistance and involvement, currently it e.g. involves the German Steinbeis network as a provider. This is a necessity as an organization with a very lean secretariat as ScanBalt and based on decentralization will not have the required competencies in-house.

Essentially the process is composed of the following activities:

- ➔ Funding information digest forwarded each quartile to the members in order to promote new project ideas
- ➔ The Chairmanship and Secretariat on a regular basis assisted by Steinbeis screen project ideas received from the members for validity and relevance

- Screened project ideas are being presented by the proposers and discussed at the board of ScanBalt
- Two annual project accelerator days bring project ideas together for discussion
- Specific sessions at the annual ScanBalt Forum focus on development of project ideas
- Project preparation can be undertaken by the members (e.g. DanuBalt), by ScanBalt (e.g. Bridge-BSR) or by ScanBalt sub-contracted to Steinbeis (e.g. BSHR-HealthPort) depending on the type of project
- ScanBalt often acts as partners for dissemination and with specific networking tasks in various projects (e.g. Boost Baltic FP6/Boost Biosystems/Baltic Fracture Competence Center)
- ScanBalt acts as coordinator in projects of specific strategic interests (e.g. Bridge-BSR/BSHR HealthPort)
- The ScanBalt strategy sets the frame for the involvement of ScanBalt

### Return of investment 15:1

The return of investments for the members of ScanBalt is beyond 15:1, meaning for each Euro they invest in terms of member fees they can expect to have more than 15 Euro back in project funding, though ROI is unequally distributed among the members as it depends on their active involvement. In total more than 18 million EUR has been attracted to cross-border project activities.

The overall result is enhanced coordination between EU research programs, ESIF, regional and national public-private investments since it is based on dialogue and discussion in the entire macro-region and between regional and national public-private stakeholders.

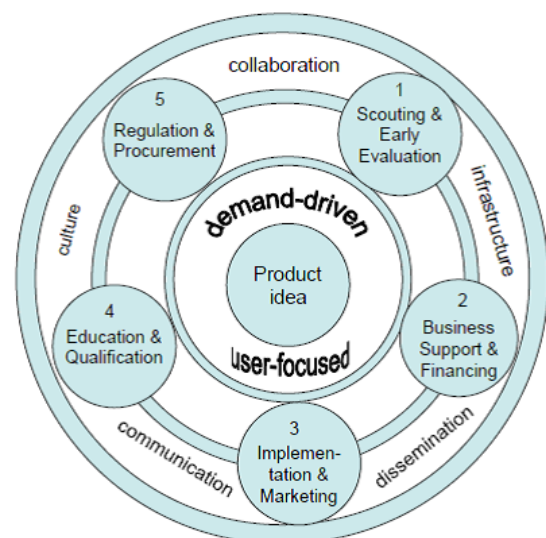
## 2.10 Towards a macro-regional innovation eco-system in health

In 2014 was published the innovation agenda "Driving cross-sectoral innovation in health and life sciences – An Innovation Agenda for the Baltic Sea Region Health Economy"<sup>28</sup>. The innovation agenda was a result of the project BSHR HealthPort coordinated by ScanBalt and co-financed by the Baltic Sea Region Programme 2007 – 2013.

The BSR innovation ecosystem provides a model implementing innovation support activities in a macro-regional context with a complex network of entities and relationships. Such an ecosystem in ideal form ensures that individuals are given optimal conditions to apply their skills and competencies while contributing to the interconnectedness and interdependency of all stakeholders.

The Innovation Agenda for BSR health economy promotes an Open Innovation Ecosystem and defines actions towards their practical implementation. The main objective is to support the creation of sustainable, cost-effective, citizen centric healthcare systems promoting new jobs and businesses.

**Fig: Open Innovation Ecosystem for Health as proposed in "Driving cross-sectoral innovation in health and life sciences – An Open Innovation Ecosystem for BSR Health Economy"**



Source: *Driving cross-sectoral innovation in health and life sciences - An Innovation Agenda for the Baltic Sea Region Health Economy, BSHR-HealthPort, 2013*

<sup>28</sup> <http://scanbalt.org/files/graphics/Illustrations/HealthPort%20Innovation%20Agenda.pdf>

The innovation agenda contained both policy recommendations and operative recommendations for implementation which ScanBalt, the members and other stakeholders should act on. These again were divided into:

- Scouting & Early Evaluation
- Business Support & Financing
- Implementation & Marketing
- Education & Qualification
- Regulation & Procurement

The innovation agenda is reflected into the ScanBalt strategy 2015 – 2018 “Solving Societal Challenges on Top of Europe” approved May 2015. Not least the focus on the Baltic Sea Region as one test and development site for health care products and services.

## 2.11 BSR as one test site for development of health care products and services

In order to better exploit the potential of the BSR health care market and meet the societal challenges a process in 2014 was initiated aiming for the “Baltic Sea Region as one test site for development of health care products and services”.

If successful this is a huge benefit for SMEs which faster and easier can bring their innovations to the market and it improves the health care offered to patients. For the regions it means more efficient use of existing research and innovation infrastructure and economic development.

The process consists in mutually coordinated sub-topics being targets for coordinated investments between Horizon 2020, structural funds, regional and national public-private financing. The sub-topics are identified via the continuously ongoing discussions among the members of ScanBalt, in the ScanBalt network at large and in dialogue with regional, national and supranational decision and opinion makers.

Project accelerator workshops and events support the discussions.

One major gap specifically targeted is the lack of close clinic-company collaboration. SMEs often miss access to existing clinical infrastructure in other countries to e.g. validate diagnostic tools and processes. Additionally, clinicians are burdened by increasing hospital routines and thus hardly get involved in the innovation processes.

An intensified collaboration between clinicians across hospitals and countries benefits the innovation of clinical procedures through the exchange of best practice, influenced by different national, organizational and regulatory conditions.

Finally, successful innovation is driven by fast market access across countries which can be facilitated by collaboration between clinicians and companies, which is especially relevant for start-ups and SMEs in the BSR.

These were some of the reasoning’s for the project BSHR HealthPort (Baltic Sea Region Programme) which addressed the insufficient commercial exploitation of ideas proposed by health care researchers and practitioners and the barriers for innovative SMEs to the health care market.

A new project Baltic Fracture Competence Center (Interreg Baltic Sea Region) focus on the collaboration between clinical fracture registries and enhancing clinic-company interaction.

Research and innovation (R&I) within fracture management is facing various challenges in understanding clinical needs and effectiveness, reducing costs of innovation and time to market.

Clinicians and companies often lack insight into the total costs of care, the effectiveness of treatment and the causes of adverse health outcome in hospitals. To overcome these challenges, clinical fracture registries can provide evidence in the clinical “real world” and reveal needs and potentials for innovation.

Further, clinicians and hospitals are important actors in the innovation process helping to identify needs and to ensure user-oriented products. Around 50% of new products are initiated by clinicians. Accordingly, companies in the BSR need

direct access to hospitals and clinicians for collaboration within needs assessment, preclinical research, product development, clinical trials, postmarket follow up studies or health technology assessment.

Baltic Fracture Competence Center was initiated April 2016.

## 2.12 An overview: The development of ScanBalt BioRegion and the organisational set-up

There is a clear line in the development of ScanBalt BioRegion.

First the basic tools and structures of ScanBalt BioRegion (supported by Nordic Innovation Center) were established.

Hereafter followed the collection and structuring of the necessary knowledge about the region and its competencies (supported by EU FP 6) and various specific topics were dealt with.

The insight gained served to propose basic decentralized mutual benefit models for collaboration and macro-regional added value chains (supported by EU FP 7 and Interreg IIIB).

The establishment of regional triple helix clusters was promoted where lacking and BSR promoted as a globally competitive health and bio economy under the brand name ScanBalt BioRegion.

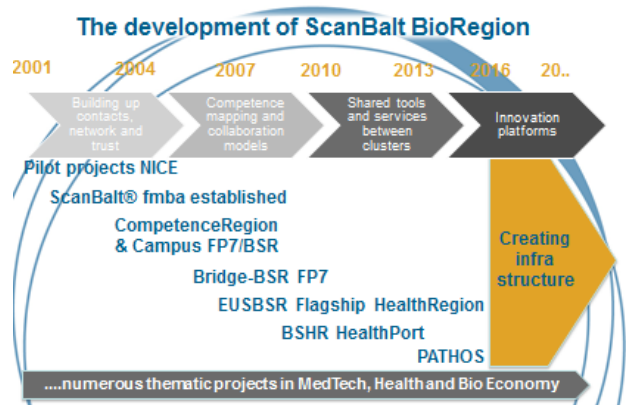
An important moment arose when the EU Baltic Sea Region strategy was established and ScanBalt Health Region became a flagship within priority (policy) area innovation (PA Innovation).

In later years the work has concentrated on promoting SME based innovation, clinic-company collaboration and on developing various shared tools for the clusters and their members.

The organizational set-up of ScanBalt is based on the idea of decentralization in order to mobilize regional resources and encourage the regions to

take direct ownership to ScanBalt. This is also a necessity due to the fact that only limited resources are available for running the association on a daily basis.

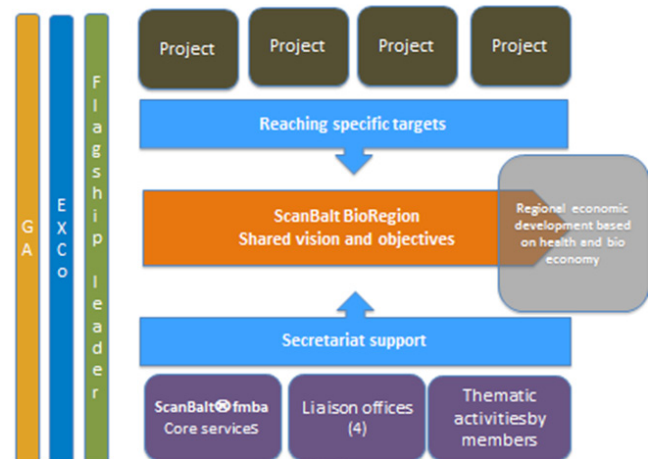
**Fig: The development of ScanBalt BioRegion**



Source: ScanBalt

A main task is to ensure that a multitude of various project based activities play together towards a common goal while still benefitting the individual stakeholders.

**Fig: Organizational set-up of ScanBalt® fmba**



Source: ScanBalt

The organizational model should never be regarded as static. It all the time has to adopt according to changing demands and conditions.

### 3. The Danube Area – How to benefit from existing experience

#### 3.1 Common societal challenges and barriers

It is true for the Danube Area (as it is for the entire EU) that health contributes to wealth and investments in health foster long term growth and sustainability of economies. Likewise for the Danube Area a healthy population is necessary for the economic productivity and prosperity, and wealth on the other hand supports better health.

The societal challenges and barriers for the Danube Area within health and health economy are likely to be comparable to those described for BSR.

Common challenges concerning health care systems as identified in the World Health Report 2013 are valid in the Danube Area, too. Concerning research in Health, the report calls for:

- ➔ Increased international and national investment and support in research aimed specifically at improving coverage of health services within and between countries.
- ➔ Closer collaboration between researchers and policymakers, i.e. research needs to be taken outside the academic institutions and into public health programmes that are close to the supply of and demand for health services.
- ➔ Countries to build research capacity by developing a local workforce of well-trained, motivated researchers.
- ➔ Every country to have comprehensive codes of good research practice in place.
- ➔ Global and national research networks to coordinate research efforts by fostering collaboration and information exchange.<sup>29</sup>

Based on the 2015 OECD report Health at a Glance<sup>30</sup>, it is worth mentioning that there are common health problems in the Danube Area, such as short life expectancy in some of the countries, especially the ones that joined in the EU after 2000; and the gender gap in life expectancy (i.e. women may expect to live longer than men), see figure below.

The expenditure per capita on health also varies considerably according to the OECD report Health at a Glance, 2015. The rankings are here Austria (8), Czech Republic (27), Germany (6), Hungary (29), Slovakia (28) and Slovenia (23).

The Danube Area on the macro-level may thus benefit from a stronger focus on health economy as it have challenges, disparities and imbalances comparable to BSR (and the EU as such).

However, health and health care need focus and priority setting at the macro-regional level as shall be demonstrated in the following.

**Fig: Life Expectancy (LE) in some of the Danube area countries and mortality from cardiovascular diseases. Countries are listed in alphabetical order. The number in the cell indicates the position of each country among all countries for which data is available.**

	LE at Birth - Women	LE at Birth - Men	Mortality, cardiovascular diseases
<b>Austria</b>	<b>13</b>	<b>18</b>	<b>26</b>
<b>Czech Republic</b>	<b>28</b>	<b>28</b>	<b>31</b>
<b>Germany</b>	<b>19</b>	<b>18</b>	<b>25</b>
<b>Hungary</b>	<b>33</b>	<b>33</b>	<b>33</b>
<b>Slovakia</b>	<b>31</b>	<b>31</b>	<b>34</b>
<b>Slovenia</b>	<b>17</b>	<b>25</b>	<b>28</b>

Source: OECD report Health at a Glance, 2015

<sup>29</sup> [http://www.who.int/whr/2013/main\\_messages/en/](http://www.who.int/whr/2013/main_messages/en/)

<sup>30</sup> Health at a Glance, 2015, OECD

### 3.2 The EU Strategy for the Danube Area: Need for focus on health

The EU Strategy<sup>31</sup> for the Danube Region addresses a wide range of issues; these are divided among 4 pillars and 11 priority areas.

However it is noteworthy that Health and Health Economy are not mentioned in any of the headlines for the strategy, see figure below.

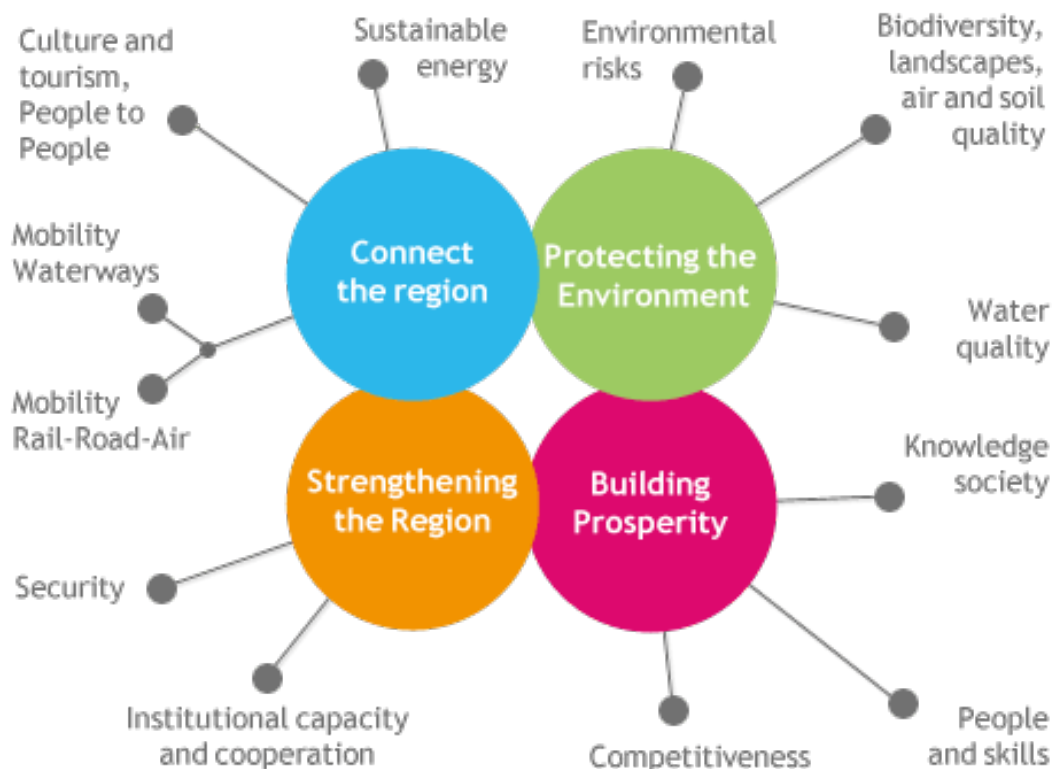
Issues of health appear connected first of all with environmental issues like pollution of air and water. Of course water and air quality are important for the health of the populations but the lack of direct focus on health raise barriers for combined and coordinated efforts at the macro-regional level towards societal challenges like aging and rising costs of the health care systems.

As a consequence there are at least 100 organizations which are listed to be involved in collaboration in the Danube Area but not even one has focus on health and health economy.

In fact DanuBalt appears to be the first project aiming for bridging gaps and divides in health innovation and research in the Danube area and proposing coordinated macro-regional efforts.

To conclude: There is an urgent need to strengthen focus on health and health economy in the EU Strategy for the Danube Area which would provide a top down push towards strengthened macro-regional collaboration.

**Fig: EU Strategy for the Danube Area**



Source: <http://www.danube-region.eu/>

<sup>31</sup> <http://www.danube-region.eu/>

<sup>32</sup> <http://www.danube-region.eu/2014-03-21-07-28-38/who-is-who>



### 3.3 Country specific recommendations in Health

Though the EU Strategy for the Danube Region is nearly devoid of any mentioning of health and health care some indications of needed actions may be found in the Policy Guide for the European Structural and Investment Funds 2014 – 2020<sup>33</sup>.

Here are given a number of country specific recommendations for health which may be inspirational when outlining a macro-regional strategy for health in the Danube area, see overview below:

**Fig: Country specific recommendations in health concerning (some) countries in the Danube Area.**

**Bulgaria** Ensure effective access to healthcare and improve the pricing of healthcare services by linking hospitals' financing to outcomes and developing out-patient care.

**Czech Republic** Take measures to significantly improve cost-effectiveness of healthcare expenditure, in particular for hospital care.

**Germany** Pursue a growth-friendly fiscal policy through additional efforts to enhance the cost-effectiveness of public spending on healthcare.

**Romania** Pursue health sector reforms to increase its efficiency, quality and accessibility, in particular for disadvantaged people and remote and isolated communities. Reduce the excessive use of hospital care including by strengthening outpatient care.

**Slovakia** Increase the cost-effectiveness of the health-care sector.

*Source: Policy Guide for the European Structural and Investment Funds 2014 – 2020*

In some of the Operational Programmes for the Implementation of the EU Cohesion Policy in the period 2014 – 2020 there are also efforts concerning health and health economy, here are just a few examples.

In Hungary the Human resources Development Programme expects to have 300,000 participants in health promotion and disease prevention programmes, and advanced health infrastructure will be developed with a capacity of 4000 persons.

In Romania the Regional Operational programme 2014-2020 (axis 8 – Development of Health and social infrastructure) is expected to lead to 500,000 people benefitting from better community and primary health care services in less developed regions while decreasing avoidable emergency admissions in hospitals.

In Slovenia 19.000 people from vulnerable target groups are expected to be participating in preventive programmes.

In the Czech Republic the importance of science, research and innovation for the Czech Republic's competitiveness has grown enormously<sup>34</sup>.

A healthy population is a priority for the Czech Republic with focus on the origin and development of diseases, new diagnostic and therapeutic methods, epidemiology and prevention of the most serious diseases<sup>35</sup>.

One may get the impression that it can be a challenge to find common denominators for macro-regional collaborative efforts however it can be argued that innovation and uptake of new innovative products, services and systems are cutting across the issues mentioned above.

This would fit perfectly well with efforts to promote the Danube macro-region as one test and development site for health care products and services much in the same way as it is done in the strategy for ScanBalt BioRegion 2015 – 2018.

So there are parallels between the Danube and the Baltic Sea Region, which may be exploited in future efforts for mutual benefits and for mutual learning between the two macro-regions.

<sup>33</sup> Investments in Health: Policy Guide for the European Structural and Investment Funds (ESIF) 2014 -2020, March 2014, European Commission.

<sup>34</sup> Science is not an expence but an investment, [http://www.vyzkum.cz/storage/leaflet\\_hp\\_eng\\_web.pdf](http://www.vyzkum.cz/storage/leaflet_hp_eng_web.pdf)

<sup>35</sup> National priorities of oriented research, experimental development and innovations, July 2012

### 3.4 Roadmap for the DanuBalt partner countries in relation to the health sector

The DanuBalt project based on interviews, analysis, discussions and literature review in 2016 proposed an overarching aim for a strategy for health in the Danube Area<sup>36</sup>.

*“The aim is to offer remedies/actions improving the investment in Danube regional health systems by efficient use of Structural Funds in combination with H2020”*

This aim is in line with the EU Strategy for the Danube Region which seeks to create synergies and coordination between existing policies and initiatives taking place across the region within e.g. research, innovation, education and the business environment.

The specific objectives would be:

- ➔ to support the creation of sustainable, cost-effective, citizen centric healthcare systems promoting new jobs and businesses;
- ➔ to support the access of innovative services and product into the health care system;
- ➔ to foster cooperation and exchange of knowledge between SMEs, academia and public authorities in the Health area;
- ➔ to better identify what and how underused research infrastructure can be better used by local and cross-border value chains before investing in new infrastructure;
- ➔ to ensure support for overcoming barriers to market penetration;
- ➔ to enhance regional cooperation and avoid overlaps of policy efforts and mainly financial resources;
- ➔ to upgrade regional innovation systems throughout the Danube Region, to reinforce the capacity of research infrastructure and link better existing health foundations/bodies in order to improve innovation conditions in Danube Region.

The DanuBalt project then proposed prioritized remedial actions at the regional and EU level for the Danube Area divided into four Focus Areas being (1) Redefining parameters for Health Care; (2) Innovative Public Procurement; (3) Technology Transfer and (4) Scaling Up Markets:

**Fig: Remedial actions at the regional level, Danube Area:**

Remedial action / Action lines	Time Frame (Months)
<b>Redefining parameters for Health Care</b>	
Establishment of Board of Trustees for Health Economy	36
Cross-Sectoral and Transnational Projects for Innovation in Health Economy	36
<b>Innovative public procurement</b>	
Increase the cooperation of healthcare representatives with health service providers (mainly industrial partners)	36
Improve the access of innovative services and products within the health care systems	36
<b>Technology transfer</b>	
Bridging Gap between Academia and SMEs	24
Establish a platform supporting the offer and request as well as identification of suitable partners for cooperation	36
<b>Scaling up markets</b>	
eLearning platform development	36

It appears obvious - when seeing the many proposed actions whether at the regional or EU level combined with the country specific ESIF recommendations, the multitude of stakeholders that would be involved and the experiences learned from ScanBalt BioRegion - that it should be beneficial for the Danube area to:

<sup>36</sup> Roadmap for the Danubalt regions in relation to the health sector, DanuBalt, February 2016.

- (1) enhance and strengthen health as a prioritized policy area in the EU strategy for the Danube area to promote coordination and synergies
- (2) increase the level of coordination and coordinated investments within health in the Danube area by improved governance
- (3) apply practical experiences, models and concepts for macro-regional collaboration from ScanBalt BioRegion adapted to regional needs, demands and opportunities in the Danube area.

One question is though if it is really well known who are the key stakeholders that could make it happen?

### 3.5 The strength of Danube health and life science/business – Need for a snapshot

The Danube area does of course have several centers which are strong within health and life sciences.

Most notable, the Life Science Cluster Vienna counts more than 588 companies of which 378 are biotech/pharma and medtech companies that produce and/or develop products and processes in these fields. These enterprises employ more than 21.000 people and generated more than 9 billion euros in sales in 2012<sup>37</sup>.

Another example is Hungary which has several accredited clusters in the area of Health:

- ➔ Albert Szent-Györgyi Life Sciences Cluster
- ➔ Hungarian Association of Medical Manufacturers and Service Providers
- ➔ Pharmapolis Innovative Pharmaceutical Cluster
- ➔ Thermal – Health Industrial Cluster

The RDI systems in the Danube area are under strong development in several countries, for ex-

ample Hungary, which intends to lift the national R & D intensity targets<sup>38</sup>. In general the Danube area is going through a fast development within health and health care.

It is reasonable to assume that some of the key conclusions in the market analysis<sup>39</sup> performed on the BSR will hold true also for the Danube Area creating a market drive for changes, for example:

- ➔ a great need to catch up in the area of technical medical equipment (and the more stringent technical and hygiene standards of the EU)
- ➔ strong demand for efficient and high-grade technical medical equipment (such as surgical installations, diagnostic apparatus, monitoring systems and tele-medicine) is on a continuous upward trend
- ➔ several large-scale modernization and expansion plans in the pipeline in the hospital sector across the entire region
- ➔ restructuring of healthcare provision
- ➔ prevailing economic, social and geographic conditions

However, currently a comprehensive overview over the various competence hubs and satellites within health and life sciences in the Danube Area is not available.

Thus it is difficult to identify disciplines or areas where the Danube region successfully may collaborate in order to create competitive macro-regional added value chains based on competence hubs and satellites or any other chosen collaborative model.

Therefore a top priority should be to create a snapshot of the Danube area much as it was done with ScanBalt CompetenceRegion for BSR. This could go hand in hand with a number of pilots within selected areas where it is most likely that macro-regional added value chains can be created based on the existing knowledge in order to gather and build up region specific experiences and knowledge.

<sup>37</sup> <https://www.wien.gv.at/english/research/lifescience.html#a>

<sup>38</sup> [http://ec.europa.eu/euraxess/pdf/research\\_policies/country\\_files/Hungary\\_Country\\_Profile\\_RR2014\\_FINAL.pdf](http://ec.europa.eu/euraxess/pdf/research_policies/country_files/Hungary_Country_Profile_RR2014_FINAL.pdf)

<sup>39</sup> The Health Economy in the Baltic Sea Region: Challenges and Opportunities (2013) <http://scanbalt.org/files/graphics/Illustrations/BSR%20Health%20Economy.pdf>

**Fig: The Danube Macro-region – Where are the regional competence hubs and satellites in health and health economy?**



Source: <http://www.danube-region.eu/>

### 3.6 The Danube Area, Smart Specialization (S3) and health

The JRC Annual Event Oct 2015 in Ulm took stock of the continuing scientific support activities for the Danube region and the JRC expertise that supports the European Commission priorities and promoting smart specialization in the Danube region.

In general the support tools for S3 macro-regional collaboration are:

- Eye@RIS3 tool for finding & matchmaking regions with related R&I priorities
- Inter-regional trade and competition tool
- Regional benchmarking tool – searches for structurally similar regions
- Analysis, Policy Briefs, Working Papers
- Trans-national learning, Peer Review & thematic workshops
- Support to the macroregional strategies
- S3 Website & Newsletters

The main argumentation for collaboration under the smart specialization framework is mentioned to be<sup>40</sup>:

Globalized networks and economy call for regional innovation policy that (1) goes beyond regional/national borders; (2) takes into account the degree to which actors in a region are able to connect to and benefit from global innovation networks and value chains.

Success factors are (1) critical mass – collaboration can help in joining forces and sharing resources; (2) similar or complementary specializations – combining similar or complementary competences and finding peculiar role in global value chains; (3) knowledge cumulating – mutual learning tools help aggregate knowledge and make it available to open communities.

<sup>40</sup> John Bensted-Smith, JRC, IPTS – Ulm, 27 October 2015: Priorities of Research and Innovation in the Danube macro-region, [https://ec.europa.eu/jrc/sites/default/files/20151027-28-danube-ulm-bensted-smith\\_en.pdf](https://ec.europa.eu/jrc/sites/default/files/20151027-28-danube-ulm-bensted-smith_en.pdf)

It is worth to notice that Health and Well-being at the conference in Ulm, Oct 2015, was reported to be the 3<sup>rd</sup> highest prioritized R & I priority in the Danube Region:

**Fig: The most common R & I priorities in the Danube region and health economy?**



**The most common R&I priorities in the Danube region**

Priority group	No. of priorities	No. of countries/ regions introduced the priority
• Sustainable Innovations	28	15
• Advanced Materials & Manufacturing	19	13
• Health & Wellbeing	14	14
• ICT	13	11
• Energy	12	10
• Agriculture & Food	8	7
• Transport & Mobility	8	7
• Creative Industries & Tourism	7	7



12

*Source: John Bensted-Smith, JRC, IPTS – Ulm, 27 October 2015: Priorities of Research and Innovation in the Danube macro-region*

This indeed supports the claim that health should have a much more prominent role in the EU macro-regional strategy for the Danube region.

It could thus be considered to establish a S3 smart specialization platform for the Danube region within health if a specific topic can be identified which makes it reasonable and advantageous.

### 3.7 Stakeholders to promote the Danube Area as a health region

As an important step towards promoting health economy in the Danube area it may be an advantage to organize one or several round tables which can explore the real demand for closer collaboration.

Round tables could be an important tool for combining the policy push or visions with a market oriented approach whether we speak about a market for products, services or knowledge. Such an approach builds on the same process methodology which triggered the development of ScanBalt BioRegion.

Participants would be decision and opinion makers from regional authorities, industry, SMEs, research institutions and hospitals and one concrete outcome is the planning and execution of one or several projects activities on the road towards a Danube Health Region.

Such a round table could take place during an annual meeting for stakeholders of the EU Danube macro-regional strategy and be part of the official programme. However also large health and health care oriented conferences and events in the region may serve as a platform and have the advantage that several of the relevant stakeholders would already be present.

The main outcome would be the identification of key personalities who have an interest and the organizational capacity to carry the initiative forward.