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Methodology for Transnational Smart Specialisation Strategy

Abbreviated Version

GO SMART
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Project Partners

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Statement of originality

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Contents

This document is an abbreviated version of the upcoming publication "Methodology for Transnational Smart Specialisation Strategy – Policy Paper" (final version planned for distribution in March 2019). Its purpose is to provide a general overview of the proposed methodology in a relatively short and simple form.

The methodology for Transnational Smart Specialisation Strategy (Trans-S3) was developed and applied by the 'Strengthening smart specialisation by fostering transnational cooperation (GoSmart BSR)' project[1] under the European Union Interreg Baltic Sea Region Programme 2014-2020. The main reason for elaboration of the Trans-S3 came from understanding among the 'GoSmart BSR' project partners that the ultimate goal of smart specialisation strategies is for regions to become globally competitive. From a region's perspective, becoming globally competitive can only mean one thing – achieving a strong position in global value networks. In this sense, smart specialisation cannot be achieved without engaging in international competition and cooperation (internationalisation). The Trans-S3 methodology allows transitioning from the concept of a competitive region to the concept of a competitive group of regions.

Smart specialisation strategies (S3) are considered a new and promising policy tool for building more knowledge-based and more competitive economies. The essence of S3 is the concentration of public resources in knowledge investments on selected activities to strengthen or develop comparative advantage with three important dimensions:[2]

- Scientific, technological and economic specialisation;
- Policy intelligence for identifying domains of present or future advantage;
- Governance approach with the key role of regions, private stakeholders and entrepreneurs.

In the European Union, S3s have a strong regional focus as they are closely linked to and integrated into regional development (cohesion) policy with the aim of making innovation a priority for all regions, improving the innovation processes, focusing investments and creating synergies between European policies and funding, complementing national and regional schemes and private investments. Currently, most EU regions have smart specialisation strategies in place. The regional and national Research and Innovation Strategies for Smart Specialisation (RIS3, S3) are integrated, place-based economic transformation documents which:[3]

- Focus on policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development;
- Build on each country/region's strengths and potentials for excellence;
- Support technological and practice-based innovation, and stimulate private sector investment;
- Get various stakeholders fully involved and encourage innovation and experimentation;
- Are evidence-based and include monitoring and evaluation systems.

While the benefits of RIS3/S3 have not yet been extensively researched, there are some initial indications that elaborating and implementing these strategies can benefit regional (and national) economic structures by more business and research community interactions, increased investments, attracting talent to innovation centres, and more intensive collaboration among small and medium-sized enterprises (SMEs), leading to stronger economic performance.

[1] https://gosmartbsr.eu/
[2] European Commission (2009). Knowledge for Growth, http://ec.europa.eu/invest-in-research/pdf/download_en/selected_papers_en.pdf
[3] European Commission (2014). National/regional innovation strategies for smart specialisation (RIS). https://ec.europa.eu/regional_policy/sources/docgener/informat/2014/smart_specialisation_en.pdf

The elaboration of the Trans-S3 for multiple regions was one of the main elements supporting the GoSmart BSR project idea, that is "strengthening smart specialisation by fostering transnational cooperation". The GoSmart BSR project addresses low capacity for innovation in less developed Baltic Sea regions by, among others: mutual learning, translating S3s into practical SMEs joint actions, and employing best practices from more developed regions. The project is fully integrated within the 3S concept and aims to foster effective cooperation in transnational approach between industry, research and development (R&D) sector, and public authorities. Although created within the GoSmart BRS project context, **the proposed Trans-S3 methodology can be widely used in any situation when multiple regions attempt to intensify their collaboration based on the smart specialisation concept.**

The key element of Trans-S3 is to identify (which in practical terms means to select) the common smart specialisation priority areas and their underlying knowledge and economic domains for groups of regions rather than for a single region. The Trans-S3 methodology aims to provide a 'recipe' on how to elaborate and manage transnational smart specialisations. Under the 'standard' application of S3 methodology, which is usually applied to a region (less frequently a country), a set of six steps has been developed and used across the European Union (and beyond): [4]

1. Analysis of the regional context and potential for innovation;

2. Set-up of a sound and inclusive governance structure (participation);

3. Production of a shared vision about the future of the region;

4. Selection of a limited number of priorities/ domains for regional development;

5. Establishment of coherent policy mixes;

6.Integration of monitoring and evaluation mechanisms.

While considering all these elements, an adaptation was made and as a result the Trans-S3 methodology was developed by the GoSmart project partners. The Trans-S3 methodology is composed of two main components:

A. 'Specific component – Trans-S3 identification' – This stand for all steps, or as they were called within the GoSmart BRS project, sequences, which lead to the selection of smart priorities and domains at the transnational level. The specific component covers the following sequences: 1/Search for common sets (defining initial priorities), 2/review and profiling of target regions (verifying priorities), 3/Markets and technology trends review (refining priorities), 4/Internationalisation potential assessment (assessing priorities), 5/Stakeholders consultations and entrepreneurial discovery (finalising priorities).

B. 'General component – Trans-S3 management' – This stand for the elements which need to accompany the identification of smart specialisation priority areas and are described towards the end of the outline. At the same time, it is necessary to stress that the Trans-S3 management component is the one which governs all steps and sequences, and regulates the whole strategy. The general component covers the following elements: 1/ Governance, 2/Shared vision, 3/Action plan, 4/Monitoring and evaluation.

The outcome, which is the final Trans-S3, is developed on the basis of these two interrelated components and supported by a strategic level analysis. The Trans-S3 forward-oriented parts (objectives, measures, etc.) reflect what had been learned in the Trans-S3 elaboration process, including answers to the 'what should be done' question, reached through wide consultations and joint discovery. In the case of the Trans-S3 for the GoSmart BSR partner regions, it has to be made clear that the forward-oriented part of the strategy is rather narrow as it had been largely predefined by partners before engaging in the project and focused on international joint smart strategies at the micro level, i.e. led by groups of SMEs. Of course, other Trans-S3s can take the form

[4] European Commission: Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3) , 2012, http://ec.europa.eu/regional_policy/sources/docgener/presenta/smart_specialisation/smart_ris3_2012.pdf (retrieved 1.02.2018)

of fully-fledged strategies, depending on the particular objectives and agreements made among the participating regions.

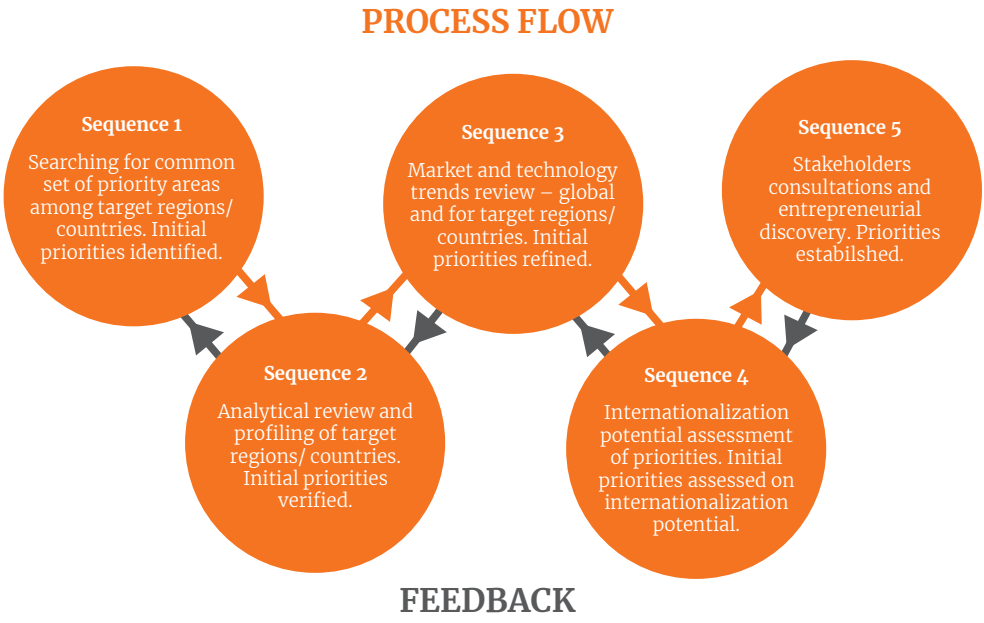
A. Specific component

The Trans-S3 identification process is described below in an easy 5-sequence logic with each part representing different analytical and consultative set of methods and their expected outcomes.

The sequences 1-5 are directly applicable in a situation when each of the target territories possesses its own S3 (regional, national, or both). In this case, finding common smart specialisation areas and their underlying knowledge and economic domains, simply described, becomes an exercise of selecting common sets and refining this selection through appropriate further analyses with participation of the various stakeholders.

Following the proposed sequences 1-5 leads to establishing the Trans-S3 priorities and specific domains in a coherent, logical, and integrative manner, which reflects the main underlying concepts of the smart specialisation strategies (see figure below). It is important to note that the whole process is to a high degree iterative (verifications and validations are carried out throughout all the sequences), highly participatory, and allowing extensive feedback loops.

Figure 1: Specific component – Trans-S3 identification



Source: Own elaboration.

Sequence 1: Searching for common set

Assuming the existence of formally adopted S3s for the concerned territories (at different regional and/or national levels), the first analytical task is to compare the sets of the national-level (high level) smart specialisation priority areas and to identify the common ones. By analysing the national-level S3s, it is relatively simple to list all smart specialisation priority areas for the concerned countries (and indirectly regions, as long as there is no significant conflict between the national and regional levels). Immediately, it becomes apparent that there are priority areas which are common for the majority of countries and these should be considered the initial common smart specialisation priority areas among target regions/countries. The cut-off point between the common and the uncommon priority areas has to be decided by experts. A simple majority-minority rule can be applied. Of course, the more regions/countries share the given priority areas, the stronger the argument to consider them to be the common ones. As a result of the above analysis and combination of selection methods, the initial Trans-S3 (common smart specialisation priority areas and their underlying common knowledge domains, sectors/sub-sectors, technologies and themes) are defined. The result of this sequence is the initial identification and the dual definition of Trans-S3, both in terms of general smart priority areas and their underlying and more specific domains.

Sequence 2: Analytical review

There is a need of a supplementary analytical review and profiling of the target territories. The main reasons for doing so are the following:

- Resetting the reference points for priority areas and domains from the ones applied in the elaboration of the individual national and/or regional S3s.
- Cross-checking that the identified common smart specialisation priority areas (and their underlying domains) are statistically important currently, i.e. at the time when the Trans-S3 is being elaborated.
- Brining in updated hard evidence into the process as some (if not most) smart specialisation strategies have some degree of normative policy-making and/or even 'wishful thinking'.

Perhaps the first reason is the most critical one. If the existing regional S3 was defined on the basis of reference territory, now the perspective changes quite dramatically. To illustrate, the basic statistical tool used for the S3 elaboration is the Location Quotient[5] (LQ) which at the regional level compares the concentration of a sector, industry in question in the region to that of the country (or a larger region containing the analysed one). At the national level, the LQ compares the concentration of a sector in question in the given country to a greater territory (a group of countries, such as for example the European Union or the Baltic Sea Region). Conducting statistical analysis when elaborating the Trans-S3 is also warranted by the fact that usually the situation is such that the existing individual S3s were conceived and adopted some years ago. While these strategies might be still generally valid, not all of them have been regularly reviewed and updated while the economic realities, challenges and technologies change. Also, new priorities and domains should be considered, to the extent the statistical data supports their relevance and importance. Through the analytical review and profiling of the target territories, the initially identified Trans-S3 can be verified, that is some smart specialisation priority areas and their underlying domains can be added or eliminated, based on convincing statistics.

[5] The Location Quotient (LQ) is a way of quantifying how concentrated or dominant a particular industry, cluster, occupation, or demographic group is in a given territory (e.g. the region) as compared to a greater reference territory (e.g. the country). The LQ can reveal what makes a particular region specialized or unique in comparison to the greater reference territory.

Sequence 3: Market and technology trends review

Sequence 3 is somewhat similar to the previous one but now other aspects heavily influencing the Trans-S3 are studied. While static and past data are the subject of analysis under the sequence 2, this sequence is more outward- and future-oriented. Relevant markets and technological trends affecting the target territories are analysed, based on statistical data, industry and technology forecasts, qualitative analysis, or foresight studies. The market, industry and technology trends should be collected and analysed by researching generally available publications such as sector and technology journals or publications made available by recognized institutions.

Arguments for and against the initially identified Trans-S3 (the general priority areas and the specific domains) should be weighted and judgment should be applied to decide how the market and technology trends influence and moderate them. Again, some Trans-S3 smart specialisation priority areas and their underlying domains can be added or eliminated, based on convincing arguments. This sequence provides yet another important verification of the initial Trans-S3 and refines it.

Sequence 4: Internationalization potential

Since the transregional/transnational aspects are at the core of the Trans-S3 concept, it is highly relevant to assess the potential of the previously initially identified, verified, and refined smart priorities and domains (in sequences 1-3). Here the pragmatic and application aspects of the Trans-S3 are in the focus. While the initial and somehow already validated smart priorities and domains are seemingly ready, not all of them are prone to be the subject of transregional/transnational cooperation activities. This will depend on a number of factors, just to mention a few: attractiveness of market niches served/to be served, proximity of the involved territories in terms of technological advancement, existence of clear comparative advantages, regulations such as the ease of establishing joint operations, outsourcing, direct investments; even cultural linkages and differences among the involved territories might have significant impact. Different methods of such assessment can be used, quantitative, qualitative, and consultative. The Trans-S3 domains which receive high (sufficiently high) results/ranking should be considered further as appropriate for the final content of the Trans-S3.

Sequence 5: Stakeholders consultations

The outputs of all the previous sequences (1-4) constitute the input to the final sequence in the elaboration of the Trans-S3. This phase is concerned with wide stakeholders' involvement, broad consultations and running what is called the Entrepreneurial Development Process (EDP) which:

- Encourages and ensures an inclusive and interactive bottom-up involvement of participants representing all quadruple-helix environments (policy, business, academia, non-governmental sector) through which the proposed smart domains can be assessed and new potential ones identified, mostly based on market and/or technological opportunities identified in the process.
- Provides a vehicle for integrating entrepreneurial knowledge from many environments and institutions by making connections and partnerships more frequent and stronger.

Many tools can be used for the EDP such as communication platforms, including transregional/transnational ones, information provision on emerging market and technological opportunities, building networks and associations, clustering, technology extension information and services, online consultations, workshops. The important issue is to make sure that participation is encouraged as much as non-conventional ideas. The sequence of broad consultations with an integrated EDP is the final one before arriving at the Trans-S3 specialisations.

As proposed earlier, the Trans-S3 is defined in terms of smart specialisation priority areas and specific domains. At this point the Trans-S3 can be considered established.

One additional note needs to be made. While stakeholder consultations and entrepreneurial discovery are stressed in this last sequence, they should be present in all phases and elements of Trans-S3 elaboration and management. Any type of decision and discussion should include the key stakeholders and allow all to make contributions. Some non-standard observations can be very useful to the overall understanding of the situation and building consensus, especially in an international setting.

B. General component

The Trans-S3 management (general) component, differentiated but intrinsically linked to the specific component, allows the identification of smart priorities to be carried out in a purposeful, agreed, and rational manner and the Trans-S3, once adopted to be effectively implemented. As the elements comprising this management component are fairly 'generic' and applicable regardless of the geographic context, they do not differ much between a typical regional (or national) S3 and a Trans-S3. In this sense, the standard S3 methodology can be used without much modification.

To avoid confusion about the applicable and recommended methods related to the Trans-S3 general component, which are in essence directly derived from the standard S3 methods[6], the latter ones are only summarised below.

Element 1: Governance

Governance is broadly all about ensuring transparency, participation and ownership. In the context of Trans-S3 this means developing and applying effective mechanisms to:

- Bring different stakeholder groups, optimally representing the quadrupole helix (business, research, public authority and non-governmental spheres);
- Work together towards Trans-S3 and then jointly implement the strategy across different geographical, economic, political and cultural realities.

This second governance aspect of Trans-S3 is more challenging as differences across countries (regions in different countries) in respect of strategic planning and coordination are sometimes very substantial and can become an important obstacle. For example, business representation and political influence is quite different in countries with obligatory and non-obligatory business associations. Public authorities in different national and sub-national contexts hold different degree of effective power, also in relation to innovation policy. These and other realities of different countries and regions, make the governance aspects of Trans-S3 difficult and requiring high sensitivity, diplomacy and consensual efforts. In a broader sense, Trans-S3 has to consider multiple and highly differentiated interest groups, markets, and societies. Not surprisingly, several governance bodies should be established and working in a coordinated manner for Trans-S3. Typically, a steering group, expert groups and working groups of different scope, tasks, and composition, need to be activated and supported.

Element 2: Shared vision

In the context of Trans-S3, a common vision about the future of the region cannot be formulated in a simple manner for the basic reason that this strategy applies to many regions (geographically disconnected, economically, politically and culturally different). More coordination and communication efforts are required to bring participants to a consensual vision in a transregional/transnational setting. Analytical work, conducted within the specific component of Trans-S elaboration, especially by: regional profiling (sequence 2), markets and technology trends review (sequence 3), wide consul-

[6] European Commission: Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3) , 2012, http://ec.europa.eu/regional_policy/sources/docgener/presenta/smart_specialisation/smart_ris3_2012.pdf (retrieved 1.02.2018)

tations and joint discovery (sequence 5), contributes to developing a common understanding of the current situation and the future scenarios shared by the involved regions. In reaction to these scenarios, broad challenges and opportunities, a common vision addressing the Trans-S3 agenda, can be reached and promoted. In the context of Trans-S3, two-prone communication seems to be equally important – among the involved regions while building consensus as well as toward external partners and wide stakeholder groups to promote the idea of joint international strategy formulation and implementation. This is justified by a higher level of disconnectedness among regions from different countries as compared to one or a few regions from a single country.

Element 3: Action plan

For Trans-S3, it is extremely challenging to create a complete coherent policy mix, single instruments, joint budgets, etc., for the basic reason of differentiation of applicable political and policy realities among the target regions, mentioned before. Still, it is necessary and possible to work out and agree at least a simple roadmap and/or an action plan containing what will be done by the partner regions to accomplish the agreed Trans-S3 objectives. Typically, the Trans-S3 action plans will focus on what can be done jointly and/or separately by the involved regions but with the same underlying logic and expected effects in relation to the applied policy instruments and support systems. For example, it can be expected that regions developing a joint transnational smart specialisation strategy will agree to:

- Modify their underlying regional S3s to accommodate more intensive cross-regional collaboration in research and development;
- Build or develop joint or mirror support systems for certain aspects of their research and development and innovation spheres;
- Jointly promote common solutions and make aware of concerns other regions and decision-makers at national and higher levels, e.g. the leaders of the EU.

Relatively simple road maps and action plans under Trans-S3 can be effective, even though full integration of policy instruments and funding is normally impossible. It is sufficient that the partners gear their instruments and budgets towards the same strategic goals and then coordinate and monitor Trans-S3 implementation. Joint pilot projects on the basis of Trans-S3 can be especially interesting as they open more policy and funding options to reach the agreed transregional/transnational objectives. Lessons from such joint projects can be reintegrated into the further cycles of Trans-S3 and mainstreamed in many ways.

Element 4: Monitoring and evaluation

Monitoring and evaluation (M&E) are an indispensable sub-system of any strategy. The same applies to Trans-S3, despite the challenge to build joint ownership and hold partners responsible. For the M&E system of Trans-S3 to be effective, it needs to be defined in measurable terms throughout the strategic levels (general objectives, specific objectives, result and output indicators, etc.). Performance of Trans-S3 as well as changes of the strategic context among the partner regions and in the external environments, e.g. global societal challenges, markets dynamics and new technology trends, need to be captured by M&E, allowing Trans-S3 updates and adaptations which, despite changing conditions, are able to secure the ultimate objectives. In most cases, the M&E elements of Trans-S3 will be expressed within the strategy itself and reflected in the associated action plan (element no. 3 described above). A peer review system can be a useful element of monitoring and evaluation of Trans-S3, also acting as a motivation factor among the collaborating regions.

The Trans-S3 methodology application is shortly presented below on the basis of work carried out by the GoSmart BSR project in 2018. These experiences refer to the seven target regions which joined forces to form the GoSmart BSR partnership (country, NUTS2/ NUTS3 name and abbreviation):

- Denmark – Region Syddanmark (NUTS2 - DK03)
- Estonia - South Estonia (NUTS3 - EE008)
- Finland - Kymenlaakso (NUTS3 - FI1C4)
- Germany - Hamburg (NUTS 2 - DE600)
- Latvia - Vidzeme (NUTS3- LV008)
- Lithuania - Lithuania (NUTS2 - LT01)
- Poland - Podlaskie (NUTS2 - PL34).

It is worth noting that these regions are very diverse in terms of their size (area, population), spatial and functional characteristics (metropolitan, capital city, rural, mixed), and statistical category (NUTS1, NUTS2, NUTS3). Furthermore, they are different in terms of regional development level and innovativeness, indicated by, among others, different levels of their EU 2020 regional indexes and R&D expenditures as a share of Gross Domestic Product (GDP). This variation of regional characteristics presented some challenges, especially in terms of statistical data collection and analyses. In some cases, especially for the category of small regions (NUTS3), analytical work was carried out on the basis of information available for their relevant larger units (NUTS2).

A. Specific component – Trans-3 identification

Sequence 1: Searching for common set

The GoSmart BSR project partners carried out this sequence in February - March 2018 by initially looking at the national level S3 priority areas of the seven countries involved in the project on the basis of general level information published by the European Commission[7]. This resulted in identifying the strong 'candidates' for Trans-S3 priority areas which were included in the list and the weak 'candidates' which were, at least for the time being, excluded. Strong candidates for Trans-S3 priority areas were:

1. Human health & social work activities (all countries) – 7;
2. Key Enabling Technologies (all countries except Denmark) – 6;
3. Manufacturing & industry (all countries except Lithuania) – 6;
4. Information & communication technologies (ICT) (all countries except Denmark and Lithuania) – 5;
5. Sustainable innovation (four countries: Denmark, Finland, Germany, Poland) – 4.

Furthermore, all relevant S3 documents (adopted strategies) were studied both at the regional and national level (NUTS1, NUTS2, NUTS3, as applicable), to identify both the priority areas and specific domains common to the majority of the target regions. Following this analysis, an initial list of Trans-S3 priorities and domains was composed. The following domains were initially excluded from the list as not belonging to common priority areas although found among target regions:

- Agriculture;
- Construction industry and products, including smart and energy-efficient construction;
- Innovative transport and logistics, including secure, smart transport and logistics systems;
- Health tourism and SPA services, recreation and sustainable tourism;
- Culture and creative industries, experience-baes industries, smart creative technologies.

[7] European Commission: http://ec.europa.eu/regional_policy/en/information/publications?title=&languageCode=en&themeId=41&tObjectiveId=1&typeId=20&countryId=0&periodId=3&fundId=0&policyId=14&search=1

These analytical steps were followed by consultations (March – May 2018) in the target regions which led to the proposals to also include in the Trans-S3 list the following priority areas and domains:

- Construction industry and products, including smart and energy efficient construction, as a sector that could bring valuable cooperation possibilities for several regions (e.g. Kouvola/Kymenlaakso, Estonia and Lithuania).
- Innovative transport and logistics, including secure, smart transport and logistics systems as almost all regions have transport and logistic as a key domain. Especially the catch-up regions are those regions that are not well connected to the European single market and should regard the connectivity as a strategic asset.
- Cultural and creative industries, experience-based industries, smart creative technologies as the enterprises of the cultural and creative industries are seen as cross-sectional enterprises with innovative character.

Ultimately, it was decided by the partner regions to consider these additional priority areas and domains under the further sequences of the Trans-S3 identification.

Sequence 2: Analytical review

The GoSmart BSR project partners assessed the target regions (and countries) in terms of their innovation positions and concentration of employment across economic activities. The current regional innovation performance was analysed as well as statistical descriptive analyses applied to the different economic activities logically associated with the smart specialisation priorities and domains. Based on the criteria of structural similarity of sectors/sub-sectors among the regions (rule #1) and of at least half of the concerned regions/countries sharing a common priority area (rule #2), the following results were obtained:

i. Regional employment specialisation in human health & social work activities:

- none

ii. Regional employment specialisation in key enabling technologies:

- none

iii. Regional employment specialisation in manufacturing & industry:

- food related activities (production, service, wholesale) in all regions
- wood related activities in five of seven regions
- transport and logistic activities in all regions (excl. if rule #2 is applied)
- agriculture related activities in all regions (excl. if rule #2 is applied)
- construction activities in all regions (excl. if rule #2 is applied)

iv. Regional employment specialisation in ICT

- ICT/digitalization related activities in all regions

v. Sustainable innovation

- bio-economics and renewable energy activities in five of seven regions.

Through the analytical review, the results showed that the initial smart specialisation priority areas cannot all be verified by the data. This was due to political reasons or statistical restrictions. The setting of priority areas could have been motivated politically or strategically where the conditions for specialisation were not given in that region. The statistics restricted to the economic activity categories (NACE) could possibly not cover and show the domains of the priority areas formulated in the smart specialisation strategies. Seven partner regions from Syddanmark (DK03), Hamburg (DE60), Estonia (EE00), Latvia (LV00), Lithuania (LT00), Podlaskie (PL34), and Etelä-Suomi (FI1C) shared their regional specialisation and common priority areas mainly in the area of manufacturing and industry, and here in the agricultural/food and wood related activities such as in construction and transport activities. Further regional specialisations were seen in ICT and sustainable innovation activities. For both priority areas the most struc-

tural business similarities can be assumed. It was also noted that smart specialisation is not about to be specialized in a certain sector, e.g. NACE construction activities, but to specialize in a co-invention aspect of this sector, e.g. augmented reality for NACE construction activities. Consequently, further analyses, including market and technology trends were considered necessary.

Sequence 3: Market and technology trends review

The GoSmart BSR project partners assessed the market and technology trends using available publications to identify the major challenges and global trends, supplemented by own analysis of the relevant areas of economic activities (NACE) matching these global developments. Nominal values and dynamics of the employment location quotient were considered. The tasks were carried out in April-June 2018. A general analysis was performed of the regional development in market and technology trends and its link to the smart specialisation strategies of the partner regions. The review could not claim completeness due to the complexity and variety of trends as well as the uncertainty of future developments. The main results of this combination of trends could be positively found for the following smart specialisation priority areas:

i. Regional employment specialisation in manufacturing & industry:

- food related activities (production, service, wholesale) in all regions
- wood related activities in five of seven regions
- transport and logistic activities in all regions
- agriculture related activities in all regions
- construction activities in all regions

ii. Regional employment specialisation in ICT

- ICT/digitalization related activities in all regions

iii. Sustainable innovation

- bio-economics and renewable energy activities in five of seven regions.

It was noticeable that the economic activities "Information and communication", "M71 Architectural and engineering activities; technical testing and analysis", and "M72 Scientific research and development" did not present high LQ in the regions, but their overall annual growth rates are tremendously high with the exception of Etelä-Suomi. This is one of the economic activities where the transnational aspect could be realized in a cross-sectional approach. To sum up for the market and technology trends, a common interest and specialisation could be found in the foresighted domains: biotechnology, health and nutrition; information and communication technology / digital transformation; mobility, nanotechnology and circular economy. The domains of photonics, security, and production appeared not to be qualified for a regional smart specialisation, although specialized enterprises and 'hidden champions' may be identified in the regions by the stakeholders. Some of the economic activities of the domains of services, and energy showed high growth rates giving rise to the recommendation to question if these might be future smart specialisation priority areas.

The analysis revealed that a wide range of sectors affected by market and technology trends were also sectors that play a major role in the partner regions / countries of Syddanmark (DK03), Hamburg (DE60), Estonia (EE00), Latvia (LV00), Lithuania (LT00), Podlaskie (PL34), and Etelä-Suomi (FI1C). Moreover, it was noticeable that some sectors (such as J – ICT, Q – Human Health or M72 – R&D on biotechnology) were not only shared by numerous partner regions / countries but are also affected strongly by the identified market and technology trends. It was concluded that those sectors identified as being strongly affected by market and technology trends, supplemented by high location quotients in the partner regions / countries reflect a strong basis of sustainable

specialisation for the future. Another indicator of significance was the trend of the NACE activities, pointing towards a positive development in the past years. The combination of high LQ, positive economic activity trend and the specific sector being reflected in the market and technology trends indicated a significant relevance for the partner regions / countries and their future economic performance.

Sequence 4: Internationalization potential

The GoSmart BSR project partners assessed internationalisation potential of the pre-selected Trans-S3 priorities and domains on the basis of a survey carried out among the target regions' representatives of the project implementing partners and regional/national external experts, considering the main forms of internationalisation in May-July 2018. The level of analysis was each specific knowledge domain, sector/ sub-sector, technology and theme. While the survey tool had its limitations, it provided a good overview of which smart domains are and can be developed in the interregional/international dimension. The following main spheres and forms of internationalisation were considered:

A. Export - exports and cooperation in distribution/marketing;

B. Sourcing – sourcing, imports and participation in international supply networks, also outsourcing;

C. Models - subsidiaries, franchising, licensing abroad, foreign direct investments (FDIs), other forms of business model expansion;

D. Clustering – participation in complex international sectoral networks/clusters focused on group strategies and activities related to all forms of internationalization;

E. Innovation - internationalizing innovation by collaboration in R&D&I with foreign partners, selling/acquiring intellectual property abroad, sending/hiring R&D staff from abroad.

In the result, all concerned Trans-S3 domains were assessed, some eliminated from the set while the following considered to have the strongest potential for internationalisation among the target regions:

- Innovative technologies, processes, and products of agro/food- and forestry/wood industry, including healthy, safe and functional food and beverages;
- Information and communications technology infrastructure, cloud computing solutions and services, information interoperability, ICT in industry and services, science and development, software development and programming;
- Digitalisation: cyber-security and gamification, digital applications;
- Innovative transport and logistics, including secure, smart transport and logistics systems, including last-mile logistic, material handling engineering, etc.

Sequence 5: Stakeholders consultations

The GoSmart BRS project partners considered this phase of Trans-S3 identification critically important for the whole process as advanced proposals could be widely consulted and joint discoveries made agreeing on what was appropriate and important for the target regions in terms of 'smart internationalisation'. The consultations took form of consultative workshops, one-to-one meetings and surveys in August – December 2018, using presentations, interactive discussion panels, interviews and short questionnaires, to discuss the Trans-S3 domains thus far defined in the earlier sequences (1-4), to receive feedback and engage the defined stakeholders, representing the regional/national actors, in entrepreneurial discovery. This way, inclusive and interactive bottom-up involvement of participants representing all quadruple-helix environments was encouraged and ensured, through which the proposed smart domains could be assessed and new potential ones identified, mostly based on market and/or technological opportunities identified in the process. Also, is this format, the entrepreneurial knowledge and insights from many environments and institutions were shared and connections and partner-

ships made stronger. In practical terms, the process was organised as a series of:

- Workshops or conferences in each target region/country with the following sessions: an innovation policy discussion table "What is there for the regional/national innovation actors in the Transnational Smart Specialisation Strategy?"; a consultative session with innovation actors, specifically business organizations, business support organizations, relevant clusters "What are the potentials within the Transnational Smart Specialisation Strategy for the regional/national business internationalization and innovation?"; focus group discussions with leading businesses "What particular business innovation projects can be the subject of internationalization (joint specialisation strategy)?"
- Combined with these workshops (or in parallel), a short questionnaire among the leading businesses was conducted, covering the following questions/issues: associating business with the proposed Trans-S3 domains, indicating the type of internationalization option which is considered most interesting to the business, indicating the spheres where international joint innovation is seen as potentially most interesting to the business (main value creation components).
- Collecting feedback from the GoSmart BSR project Associated Organisations (policy-setting institutions) through face to face sessions, covering the following topics: the assessment of fit between the national/regional S3 and the Trans-S3 under GoSmart BSR project; possibilities of integrating internationalization and international innovation projects under the existing support instruments for innovation.

The consultations results were considered before final decisions on the Trans-S3 priorities and domains were taken.

B. General component – Trans-S3 management

The general component receives less attention in this Trans-S3 methodology as it is essentially reflective of the corresponding standard S3 steps[8] (set-up of a sound and inclusive governance structure, production of a shared vision about the future, establishment of coherent policy mixes, integration of monitoring and evaluation mechanisms).

As pertains to the question 'how did we do it', a short clarification is required. The Trans-S3 for the partner regions of the GoSmart BSR project, was developed under project-specific conditions and thus most of the general component elements were foreseen, consulted and planned by the partners prior to engaging in the identification of Trans-S3 priorities and domains. In other words, the relations and responsibilities of the partners were established a priori. The fact that this component description is less developed in this publication does not mean that these general management tasks of Trans-S3 are in any way of lesser importance than the process of identification of common thematic priorities and domains. Under the GoSmart BSR project, the former ones were to a large extent predefined in the project planning phase and thus requiring less effort while implementing the project.

1. Governance

Under the GoSmart BSR project, the governance system for Trans-S3 was developed as a part of the overall project governance system, in accordance with the Interreg BSR programme regulations, and based on the following principles:

- Clear structure of responsibilities and strong coordination at different management levels (steering, work packages, groups of activities, individual activities);
- Consensus building in general and specifically in relation to issues arising unexpectedly;
- Intensive communication among the partners both at the strategic and operational levels.

In large partnerships, such as in the case of the GoSmart BSR project – seven regions and eight partner institutions, it is neces-

[8] European Commission: Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3) , 2012, http://ec.europa.eu/regional_policy/sources/docgener/presenta/smart_specialisation/smart_ris3_2012.pdf (retrieved 1.02.2018)

sary to work out effective and integrative governance mechanisms which allow delivering of agreed outputs within the critical dimensions of content (substance), time, budget, and quality. The establishment of such mechanisms will take much effort and dedication by the partners, and will undergo a learning process. Sufficient resources were made available for the governance system to function: partnership coordinator(s), regular meetings in person or using modern communication technologies, management structures such as: the steering committee, working groups, task groups, etc.

2. Shared vision

The GoSmart BSR project was constructed based on a shared initial understanding that internationalisation of innovation activities in enterprises, especially SMEs, is one of the critical areas and in fact critical success factors of regional specialisations. This conviction was further confirmed by research carried out in the initial project phase (literature review, consultations and joint learning by project partners) which showed that regions, by designing and implementing S3s, need to become globally competitive in the sense of forming and belonging to global value chains (networks).

The vision of the GoSmart BSR project was expressed in the action design by the following statement agreed among the partners:

> **Effective cooperation in transnational approach between industry, R&D sector, NGOs and authorities, with the main expected results of:**
>
> - Functioning and sustainable Transnational Innovation Brokerage System, and
> - SMEs Joint Smart Strategies implemented across partner regions.

It is clear that this vision is a rather narrow and specific expression of a potential smart strategy end-result, thus also serving as an 'objectives statement'.

As already mentioned, the Trans-S3 of GoSmart BSR project was bound by the project scope and focus, and consequently, the Trans-S3 was largely predetermined. Dedicated efforts were made towards the identification and agreement of the Trans-S3 priorities and domains (specific component described earlier) while other strategy components were shaped before entering into the project implementation.

It is worth noting that the GoSmart BSR Trans-S3 was not intended to substitute or overlap with the existing regional (and national) level S3s of the involved regions but rather to complement them and create a synergetic, transregional scope in which some of the key challenges of making regions more innovative and competitive, would be addressed more effectively. These key challenges were identified in relation to the need to turn enterprises, especially SMEs, into actual innovation leaders and to help them internationalise and innovate in an international coopetition format.

3. Action plan

The GoSmart BSR project worked out a preliminary action plan related to Trans-S3 by broadly predefining in the project design phase what needs to be done to internationalize innovation activities of regional enterprises, especially SMEs. This initial plan contained the following main activities (work packages):

- Project management and administration;
- Identification of specialisations, sectors, and supply chains with high transnational potentials & Developing transnational smart specialisations (Trans-S3);
- Developing Transnational Innovation Brokerage System (TIBS);
- Developing Joint Transnational Smart Strategies (JTSS) for innovation and internationalization & Testing TIBS services;
- Advancing Joint Transnational Smart Strategies for innovation and internationalization & Making TIBS services sustainable;
- Dissemination and proliferation of results & Building ground for expanding TIBS.

These main activities were translated into specific plans for groups of and for individual activities with detailed responsibilities among partners, timeframes, resources and budgets, and planned outputs and results. Again, the action plan was preconceived before the GoSmart BSR project was put into action and thus this particular Trans-S3 had been largely predetermined before its thematic domains were identified.

4. Monitoring and evaluation

The GoSmart BSR partners developed a project-based monitoring plan which contained all control elements of any effective project M&E (content descriptions, timing, budget, outcomes, reporting points, etc.).

The project output indicators (effectively Trans-S3 outputs) under the M&E plan were the following:

- Number of local/regional public authorities/institutions involved - 7 BSR regions involved in the project (8 partners). Of the 8 partners, 2 are considered local/regional public authorities/institutions.
- Number of enterprises receiving non-financial support - 50 selected SMEs (their groups working towards own Joint Transnational Smart Strategies) will be pre-treated by: Value chain analysis, including innovation potentials, Innovation assessment, Possible innovation driven internationalization models which can substantially add value to companies, Calculator of financial benefits of innovation driven internationalization, Elaboration of potential JTSS partner profiles. After that SMEs are matched with innovation partners (other enterprises, R&D houses, etc.) and eventually receive support (as groups) in choosing innovation driven internationalization model, planning their Joint Transnational Smart Strategies and implementation of these strategies.
- Number of enterprises cooperating with research institutions - It is estimated that about 50% of the SMEs treated will develop direct cooperation with research institutions, so 25 SMEs in the project lifetime, to implement their groups Joint Transnational Smart Strategies.
- Amount of private investments matching public support in innovation or R&D projects
- SMEs benefiting from the project will be required to cover their own costs related to travels to meetings with (potential) partners, catering and premises costs of workshops/meetings/seminars in transnational groups, thus contributing to the costs of this innovation project. Amounts are estimated at 1,000-3,000 euros, thus averaging at 2,000 euros per SMEs, estimated total – 100,000 euros. SMEs will fully finance or co-finance their innovation projects.

1. Final Trans-S3 priorities and domains

Reaching agreement on the final Trans-S3 priorities and domains was a complex process, involving multiple analyses and intensive consultations among partners and other stakeholders as described earlier under the specific component of this methodology. The final list of the Trans-S3 priorities and domains for the GoSmart BSR project is presented on the next page.

Table 1: Final Trans-S3 – common smart specialisation priority areas and their underlying common knowledge domains, sectors/sub-sectors, technologies and themes

Highlighted domains are considered the CORE of the Trans-S3 of GoSmart BSR regions.

No.	Common smart specialisation priority areas	Explanations/ definitions	Specific knowledge domains, sectors/sub-sectors, technologies and themes[9]	Internationalization potential
1	**Human health and nutrition**	▪ Human health activities ▪ Nutrition	Health, health-related services, rehabilitation, life sciences and welfare technology, nutrition	Medium
			Innovative medicine, medical technology, biotechnology, biomedicine, new treatments and medical devices, digital applications in health and well-being, advanced diagnostics, genetic engineering and research	Medium
2	**Key Enabling Technologies**	▪ Nanotechnology ▪ Micro-/nano-electronics ▪ Photonics ▪ Advanced materials ▪ Industrial biotechnology ▪ Advanced manufacturing technologies	Bio-economics	Medium
3	**Manufacturing & industry**	▪ Food and beverages ▪ Textiles, wearing apparel, leather, etc. ▪ Wood and cork, straw, plaining products, furniture ▪ Paper, paper products ▪ Printing and recorded media ▪ Chemicals, chemical and petroleum products, rubber, plastic, other non-metallic mineral products ▪ Pharmaceutical products, preparations ▪ Metals, metal products, machinery and equipment ▪ Computer, electronic and optical products ▪ Electrical equipment ▪ Motor vehicles, trailers, transport equipment	Agro-business and related sectors	Medium
			Innovative technologies, processes, and products of agro/food- and forestry/wood industry, including healthy, safe and functional food and beverages	High
			Biotechnological processes and products of specialized chemistry and environmental engineering	Medium

[9] Based on national and regional S3s as applicable.

No.	Common smart specialisation priority areas	Explanations/ definitions	Specific knowledge domains, sectors/sub-sectors, technologies and themes	Internationalization potential
4	**ICT**	All technical means used to handle information and aid communication; both computer and network hardware, as well as software	Information and communications technology infrastructure, cloud computing solutions and services, information interoperability, ICT in industry and services, science and development, software development and programming	High
			Digitalisation: cyber-security and gamification, digital applications	High
			Development of ICT education and e-skills, internet access, modern and efficient public administration, development of e-services and digital content	Medium
5	**Sustainable innovation**	Climate action, environment resource efficiency and raw materials, eco-innovations	Sustainable, effective, low-emissions energy generation, storage, transmission, distribution and use, energy efficient solution development, renewable, clean energy, smart systems for energy diagnostics, monitoring, metering, etc.	Medium
			Minimalization of waste generation, including non-processable waste and use of waste (recycling and other methods) for materials and energy, effective waste treatment, storage and disposal	Medium
			Ecologically and economically sustainable mobility and transport, resource-effective and low-carbon circular economy	Medium
6	**Construction**	Construction industry	Construction industry and products, including smart and energy efficient construction	Medium
7	**Transportation and storage**	Transport, logistics, storage	Innovative transport and logistics, including secure, smart transport and logistics systems, including last-mile logistic, material handling engineering, etc.	High

Source: Own elaboration.

2. SWOT

The Strengths, Weaknesses, Opportunities and Threats analysis was elaborated on the basis of pre-project research and during implementation, more specifically when developing and applying applying the Trans-S3 methodology.

Table 2: Trans-S3 GoSmart BSR SWOT

Concentration of economic activities	
Strengths - High level of concentration of some sectors/sub-sectors at least of sub-groups of target regions indicates strong competitive positions in the EU context (e.g. manufacturing and industry, agricultural/food and wood related activities, construction, transport); - Further regional specialisations in ICT and sustainable innovation; - Some structural business similarities can be detected.	Weaknesses - Heterogeneity of economic profiles and many specialisations among target regions - Different levels of development of regional business in terms of: productivity, exports intensity and directions, FDIs intensity, comparative advantages, competitive models (e.g. cost vs. quality driven); - In some cases, concentration is not associated with intensive collaboration, clusters are not fully developed.
Opportunities - Increasing productive capacities by transnational cooperation/ coopetition in concentrated sectors; - Joint exploitation of new markets on the basis of shared costs of innovation.	Threats -Increasing competitive pressures from large global players from less regulated environments (China, etc.).
Innovation levels and relations to mega trends	
Strengths - Some regions as innovation leaders; - Selected specialisations broadly consistent with markets and technology global trends.	Weaknesses - Some regions as modest/weak innovators; - Some regions weak on basic economic infrastructure (transport networks, etc.).
Opportunities - Development on the basis of combing innovation breakthroughs by leading firms and research institutions and co-innovation activities by others.	Threats - Limited numbers of innovation partners, especially in the less developed regions.
Internationalisation potentials	
Strengths - High internationalisation levels and potentials in core specialisations (specialisations considered internationally competitive: agro/food, ICT, transport/logistics).	Weaknesses - Basic forms of internationalisation dominating (export/ import, sourcing); - SMEs facing many barriers to internationalisation.
Opportunities -Growing global demand for specialised production of selected domains.	Threats - Increase in international trade protectionism by some governments curtailing market opportunities, e.g. USA

Innovation levels and relations to mega trends	
Strengths - Existing and supportive innovation policy – regional and national smart specialisations in all regions.	**Weaknesses** - Little coordination of innovation policy instruments among target regions; - Insufficient support to internationalisation, international research and innovation under national and regional programmes (some focused on intraregional/national beneficiaries).
Opportunities - Learning and improvements of smart specialisation policy mixes, exploration of new instruments; - Development of transnational support systems such as the European Enterprise Network (EEN), introduction of new systems and services, e.g. proposed TIBS; - Activating SMEs internationalisation by relatively simple incentives (introduction to new markets, meeting new partners, etc.); - Opportunity to complement existing instruments by transnational systems.	**Threats** - Major financial crisis impacting development spending by enterprises, especially SMEs; - Rigidity of some innovation support instruments and high administrative burdens.
Joint transnational innovation projects by SMEs	
Strengths - Existing successes and good practices among some SMEs in target regions of joint research and innovation activities.	**Weaknesses** - Multiple barriers to internationalisation and innovation by SMEs: financial, administrative, skills and competences, etc.
Opportunities - Reduction of key barriers by establishment of comprehensive support system for SMEs internationalisation and international innovation (the proposed TIBS); - Dissemination of information on successful pilots under TIBS for multiplication and expansion effect; - Integration of such services under existing business support networks, e.g. EEN.	**Threats** - Failures of pilot projects affecting overall interest and enthusiasm; - Lack of funding for additional support to SMEs in the long-run.

Source: Own elaboration.

3. Action plan

The summary action plan underlying the Trans-S3 for GoSmart regions is presented below, providing key information on main activities planned and results expected after the Trans-S3 priorities and domains had been identified. Responsibilities of the partners and timing are omitted from the presentation as they pertain to the project partners and project-specific time-frames only and do not need to be published here, however, in any action plan, such information should be contained.

Table 3: Trans-S3 GoSmart BSR Action Plan (excerpt; partners' responsibilities and deadlines omitted)

Activity	Sub-activities	Outputs
1. Management	Content management Financial management (and procurement) Coordination Communication and visibility.	Effectively managed Trans-S3 action plan
2. Developing Transnational Innovation Brokerage System (TIBS)	Design of TIBS methods and tools, including 'calculator of benefits'	TIBS methods and tools
	Staffing and skills development for TIBS	TIBS staffed and skilled
	Working out TIBS structures and coordination mechanisms	TIBS concept: - Applicable methodology and tools, developed on the basis of extensive market mechanisms and market actors' behaviours - Competent staff equipped with skills commensurate with the job demands and undergoing capacity building plans - Institutional support and network coordination mechanisms in place.
	Making target groups aware of TIBS value proposition and preparations for first delivery cycle	Information on TIBS proposition disseminated
3. Developing Joint Transnational Smart Strategies (JTSS) for innovation and internationalization & Testing TIBS services	Recruitment, selection and intake of first groups of SMEs and their innovation partners for joint smart strategies	Data base of potential beneficiaries/SMEs and relations for TIBS
	Assistance to groups of SMEs in their work towards Joint Transnational Smart Strategies step 1 - pre-treatment	1st pilot TIBS services step 1: pre-treatment
	Assistance to groups of SMEs in their work towards Joint Transnational Smart Strategies step 2 - matching partners	1st pilot of TIBS services step 2: partners matched
	Assistance to groups of SMEs in their work towards Joint Transnational Smart Strategies step 3 – defining and supporting innovation and internationalization business model	1st pilot TIBS services step 3: innovation driven internationalization business models
	Assessment and learning from assistance provided under 1st Pilot Cycle, adjustments to TIBS	Assessment of 1st pilot cycle of TIBS services

Activity	Sub-activities	Outputs
3. Developing Joint Transnational Smart Strategies (JTSS) for innovation and internationalization & Testing TIBS services	Delivery of assistance under 2nd Pilot Cycle (repetition of steps 1-3 of TIBS services delivery)	Transnational groups of SMEs with progressed practical Smart Strategies
	Assessment and learning from assistance provided under 2nd Pilot Cycle, final adjustments to TIBS	Assessment of 2nd pilot cycle of TIBS
4. Advancing Joint Transnational Smart Strategies for innovation and internationalization & Making TIBS services sustainable	Advancing Joint Transnational Smart Strategies for innovation and internationalization & Making TIBS services sustainable	All SMEs Smart Specialisations under implementation, resources for continuation of JTSS identified TIBS service packs ready
	Conducting TIBS continuation feasibility study	Feasibility study for TIBS continuation
	Negotiations on TIBS sustainable future	Agreements on TIBS future
	Initiation of implementation of TIBS sustainability plan	TIBS sustainability plan under implementation
5. Dissemination and proliferation of results & Building ground for expanding TIBS.	Online presence and information engagement of target groups; Publications production; Advertisements	Online and other communications
	Organization of international conference on Trans-S3	International conference on Trans-S3
	Organization of international conference on TIBS	International conference on TIBS
	Organization of project closing conferences in all target regions	Closing conferences in all target regions

Source: Own elaboration.

4. Monitoring and evaluation

The monitoring and evaluation system for the GoSmart BSR project applies to the Trans-S3 described in this publication. Some details were already provided in the previous chapter.

The M&E system will be further elaborated at the final stages of the project within the Transnational Innovation Brokerage System sustainability plan as TIBS is effectively the key policy instrument under the Trans-S3 for the GoSmart BSR regions.

The presented Trans-S3 methodology was developed to apply the smart specialisation concept and to document how transnational smart specialisations can be established in a multi-region, multi-country setting. The goal of Trans-S3 priorities and domains identification for multiple regions was to see how the S3 methods can be adapted and tailored to promote innovation-intensive internationalisation of SMEs. So far, smart specialisations of transnational character have been sporadic and developed on the basis of less structured approaches considering mainly shared (global) challenges and only general characteristics of the territories involved.

It is hoped that the presented Trans-S3 methodology will be useful to key S3 players, especially policy decision-makers and support organisations, serving as a usable policy product (policy paper). It can be utilized at the supra-national, the national and regional levels to enrich, adjust and reshape approaches to innovation promotion.

This short version of the policy paper contains and shortly explains the steps and tools which can be successfully applied in devising Trans-S3s for any group of regions and as such it will be the subject of dissemination among other BSR regions, and in the European Union, primarily via online portals and communication channels related to S3 and internationalization of enterprises, to make policy recommendations accompanying the Trans-S3 methodology widely available.

Conclusions and lessons learned

Based on the experiences from the elaboration of Trans-S3 for the GoSmart regions (Denmark –Syddanmark, Estonia - South Estonia, Finland – Kymenlaakso, Germany – Hamburg, Latvia – Vidzeme, Lithuania – Lithuania, Poland – Podlaskie), the following general conclusions were drawn:

- The standard S3 methodology is applicable and adaptable to any geographical setting, including the transnational level, provided that the key elements are maintained while adaptations are made;
- Working out a Trans-S3 brings a number of challenges which are mostly related to the fact that heterogenous regions enter the scene with much differentiated socio-economic realities, unique governance systems and structures, etc.;
- Trans-S3 should not substitute the basic level of smart strategies which is the region but rather inform, complement, and improve the overall innovation framework conditions;
- Embedding Trans-S3 into the regional (national) governance systems is rather difficult given their heterogeneity, however there are ways to integrate Trans-S3 perspectives and solutions to regional (national) policy mixes, for example by giving more attention and greater support to internationalisation of innovation activities;
- Transparent and participatory governance systems work well in the Trans-S3 context.

Policy recommendations

The development of Trans-S3 methodology and its application by the GoSmart BSR partners was an interesting policy exercise which will eventually translate into an actual support mechanism (Transnational Innovation Brokerage System). From this perspective, some internationalisation and innovation policy recommendations are worth considering:

- At the EU level:

- Putting more emphasis on making regional (and national) S3s better focused on internationalisation and making R&D&I more open to internationalisation. It appears that some regional (and national) S3 are somewhat hermetic and concentrated on intraregional cooperation while the greatest benefits are locked in highly internationalised specialisations.
- Some territories of the EU covered by the transnational cooperation programmes could be suitable candidates for developing their own Trans-S3s and relevant innovation policy systems and instruments, complementing the existing regional and national ones. The following regions could be considered: North Sea, North West Europe, Northern Periphery and Arctic, Baltic Sea, Danube Area, Atlantic Area,

Alpine Space, Central Europe, Adriatic-Ionian, Balkan-Mediterranean, South West Europe, Mediterranean Area.[10]

■ Exchanging experiences, lessons learned on internationalisation-innovation policy instruments, mainstreaming the successful ones and promoting a general effort to making regions more open and more integrated into international (global) value networks.

- At the regional/ national level:

■ Regions, while building their competitiveness and innovativeness, should consider the limitations of taking only internal assets and taking formal administrative perspectives (as opposed to functional and market orientations). Many EU regions stand little chances of developing globally competitive economic systems (or domains) due to their sheer size vis-à-vis global demands. Seeking cross-regional cooperation and building value networks spanning several regions should be considered a recommended policy position.

■ Identifying other regions with similar interests and thematic strengths and supporting transregional (transnational) collaboration with them in internationalisation-innovation spheres by explicit adjustments of available innovation and smart specialisation related instruments and funding.

■ Further refocusing the internationalisation and innovation policies on the most critical and the most disadvantaged innovation actors which are the SMEs. They need to be considered the leading innovation agents and promoters as their links with markets are indisputable and today the key to success is to bring research, development and innovation to the markets and customers, i.e. create usable value and benefits.

[10] http://ec.europa.eu/regional_policy/en/policy/cooperation/european-territorial/trans-national/