CluStrat – Boosting Innovation through new Cluster Concepts in support of emerging Issues and cross-sectoral Themes

CLUSTRAT

Report on the regional potential of Bratislava and Trenčín regions

EMERGING INDUSTRIES

- Active Aging
- Sustainable Development / Green Economy
- Sustainable / Intelligent Mobility

CROSS-CUTTING ISSUES

- Internationalization
- Technology & Knowledge Transfer
- Gender in Innovation, including diversity aspects

Date:	*13 August 2013*
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This project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.

NÁRODNÁ AGENTÚRA PRE ROZVOJ MALÉHO A STREDNÉHO PODNIKANIA

CENTRAL EUROPE COOPERATING FOR SUCCESS.

EUROPEAN UNION EUROPEAN REGIONAL DEVELOPMENT FUND

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I. Introduction

National agency for Development of Small and Medium Enterprises (NADSME) represents 2 Slovak regions in the CluStrat project – Bratislava and Trenčín. Within the logic of the report, some basic data on the two regions will be given in the first step. In the second step, Emerging Industries and Cross-Cutting Issues relevant for each region will be addressed. The final part includes the ideas for the possible pilot projects.

Bratislava

Bratislava region (NUTS III) with the area of 2052,5 km^2 is the smallest of all Slovak regions (4,2% of the area of Slovakia). With 606 537 inhabitants and the highest GDP per capita, it is the most developed and, economically speaking, the strongest region in Slovakia. According to the Statistical Office of SR, the GDP of Bratislava region accounted for 27.8% of the overall GDP of Slovakia (2010). The economy of the Bratislava region, therefore, represents more than a quarter of the nation's GDP (ranked 1st) with strong tertiary -service- sector, followed by secondary and primary sector.

The most important industry sectors that create the biggest part of GDP in Bratislava region are: chemical industry (Slovnaft Bratislava, Istrochem Bratislava and Matadorfix), automotive industry (Volkswagen Bratislava, Delphi Automototive Bratislava, Johnson Controls International, Faurecia, Enco Bratislava), electro technical industry (PPA Controll a.s., ABB s.r.o.), engineering industry (MicroStep-HDO) and food production industry. However, despite its strong industry, according to Slovak Investment and Trade Development Agency (SARIO) report, Bratislava region is the first Slovak region where business and services take over the role of industrial production.

There are currently 4 industrial parks of national importance in the Bratislava region located in major cities. These provide more than 245 ha of area for entities in any stage of development. International companies that already operate in these industrial parks include firms from Germany (Hella, HTS, VW Ess, Schnellecke, HBPO, DHL, Gebruder Weiss), USA (Brightpoint, Whirlpool), Austria (Mobelix – XXX Lutz, GBM Europe) and others from Italy, Spain, Sweden and Czech Republic. Bratislava region currently doesn't have any clusters.

With 50% of all scientific research institutions in Slovakia and majority of Slovak Universities (11) concentrated on its territory, Bratislava has great potential for scientific research. According to Regional Innovation Strategy of Bratislava region for 2014 – 2020 ("RIS"), future development potential of Bratislava region is in the strategic areas of biomedicine, new materials and information and communications technology.

Bratislava region has the lowest rate of unemployment in Slovakia in the past years (5.8% on 31.12.2011) and the highest rate of average salary in Slovakia.

In 2011, number of full-time employees in research and development was 14 494 (47 892 - including other technical activities). Additionally, the total reported capital and current expenditures in R&D in Bratislava region were 242 739 021 EUR.

Trenčín

Trenčín region, with the area of 4,502 km², is the 6th largest region of Slovakia. Based on the latest available data (December, 2012), the population of the region reaches 594 328 inhabitants with an unemployment rate of 10.89%.

Due to its location, Trenčín region is a frequent intersection which helps the overall level of regional development. The region has a well developed system of road and rail transport – international railway linking Hungary/Austria – Bratislava – Trenčín – Kosice – Poland. Trenčín region is also connected to the rail network of Czech Republic through the Trenčín – Brno route. A major road corridor passes through the region, mostly highway/motorway between Bratislava and Trenčín. However, it does not have an international airport; and therefore, is dependent on airports of the neighboring regions.

Within the region, new progressive sectors are emerging and traditional industry sectors are developing. The most important industry sectors are: machinery (Sauer, PSL, GeWis, EMERSON), electro-technical (Askoll Slovakia, Delta Electronics), chemical and rubber (Continental Matador Rubber, SaarGummi Slovakia), food processing (Povazsky cukor, Nestle Slovensko), automotive (Leoni Autokabel Slowakia, Halla Climate Control Slovakia, YURA Corporation Slovakia) and textile industry (Makyta, Elterna). Other industries include construction of materials and construction of prefabricates, glass industry, and mining industry.

There are currently 10 industrial parks of national importance in major regional cities that provide more than 315 ha of area in which global companies already operate (Daejung Europe, AU Optronics, Delta Energy Systems, SEISA Europe, SUBTIL).

According to the Statistical Office of SR, the GDP of Trenčín region accounted for 9.8% of the overall GDP of Slovakia (2010). Based on this data, Trenčín region is the 3rd least contributing region in terms of GDP.

In 2011, the number of full-time employees in research and development was 1 037 (1 741 - including other technical activities). Additionally, the total reported capital and current expenditures in R&D in Trenčín region were 26 742 202 EUR.

Currently, Trenčín region does not have any form of clusters although there are initiatives for creating new traditional clusters in this region mainly in the fields of rubber and glass industry where the region has strong tradition.

II. Emerging Industries

In the two regions, all three Emerging industries (EIs) addressed by the project CluStrat (Active Ageing, Green Economy, Sustainable Economy) play different role in terms of importance and will be addressed respectively.

Sustainable Mobility

Among all the EIs in terms of potential the Sustainable Mobility (SM) could be the one in which both regions have the biggest potential for expansion. Based on the conducted desk research, in both regions the most important businesses (major employers, major exporters, major foreign investors…) and knowledge producers (universities and institutes) have their scope of activities related the most to this particular EI. As explained in the previous section, this is mainly due to the important role that the automotive industry plays in both Bratislava and Trenčín region. Bratislava region in particular does not only represent great potential for expansion of SM but also a target place for its establishment, with respect to often critical traffic situation of the capital city which collapses under daily migration of people travelling for work from neighboring cities. This causes logistic problems to inhabitants, imposes further burden on the environment and will probably become worse with the capital's expansion. The topic of SM is even more actual with respect to long lasting discussion on amelioration of public transport in the capital.

Good practice in the Sustainable Mobility – "VIBRATe"

Good practice in Bratislava region maybe spotted through the project VIBRATe. The project is focused on transnational development of new type of mobility (e-cars, e-mobility) between Bratislava and Vienna. This project offers an option for the future both in the field of sustainable mobility and the green economy as it focuses on production of vehicles with lower emissions of CO2.

Good practice in the Sustainable Mobility – "Volkswagen eco up!"

Another good practice crossing both the SM and GE is the production of new model of Volkswagen eco up!, launched by Bratislava based Volkswagen Slovakia in November 2012, running on compressed natural gas (CNG). Thanks to low consumption 2.9 kg of gas per hundred kilometers, corresponding to CO2 emissions of 79 g / km is eco up! one of the "cleanest" cars in the world. Eco up! has already won two prizes in the prestigious German competitions (VCD Auto-Umweltliste 2012/2013 a ACVmobil Umweltpreis 2012) for the most ecological car.

Green Economy

Steaming from the mapping of the potential conducted in WP4, it seems that 2nd EI important to both regions of Bratislava and Trenčín is the Green Economy ("GE"). Both public and private sector within the two regions seem to understand the importance of eco-friendly approach and potential that Green Economy brings and therefore the support in this field is growing constantly. In addition, GE is the sector in which most of the relevant regional stakeholders may see their realization regardless of their

scope of activities simply as a result of "green thinking attitude". As indicated in the good practices for the SM, the GE goes in most cases hand-to-hand with SM. A lot of attention in both regions is also dedicated to development of biomedicine, bioenergetics, biotechnology; new materials; energy storage solutions; decrease of the level of emissions; renewable energy and intelligent production systems. Both regions also recently see rise in the construction of green buildings and widespread use of energy spare systems.

Active ageing

With respect to big potential of Slovakia in the HLTT sector and a strong spa tradition of Slovakia (25 spas), Active Ageing ("AA") is the EI in which Slovakia generally has a strong potential. Out of the two regions, with well-known spas (3 spas out of which 2 are well-known internationally – Bojnice and Trenčianske Teplice) Trenčín region could see particularly potential in the areas of Age-friendly Environments and Integrated care. Keeping in mind abundance of tourist sites in Trenčín region, the region presents a good opportunity for establishment of tourism / spa cluster. Bratislava on the other hand, with institutions specialized in medical and pharmaceutical research, high tech industries and future focus on biomedicine, as recommended by the RIS, has potential in the other sphere of the AA industry – specialized medical senior health care.

Potential and gaps

The major gap common to every EI, as indicated by the interviewees, spotted in the RIS and often quoted during the regional policy dialogues ("RPD"), are unfavorable conditions and the lack of state support for innovations and R&D which are the motor to establishment and expansion of EIs. Interviews and RPDs revealed (and RIS confirms) that the major factors behind the situation are the lack of financial sources, high costs and insufficient state support (In 2012 only 0.82 % of Slovak GDP was spent on R&D). Among other factors figures also insufficient networking between research institutions and businesses – mostly low percentage of conducted applied research for the business purposes and insufficient protection of intellectual property rights. According to RIS, another gap common to all three EIs (but particularly relevant to SM) is that big foreign companies and concerns which are the most important regional economic players are often unwilling to realize/ transfer their R&D activities to Slovakia although some good practices maybe spotted (such as the quoted example of Volkswagen eco up!). 97% of SMEs in Bratislava region on the other hand, based on the research conducted by the authors of the RIS in 2011, do not develop new technologies or cooperate with research institutions at all and rather prefer to buy "finished and ready-to-use" solutions – which may be partly perceived as a direct consequence of unfavorable conditions for research listed above.

Potential for the development of EIs lays also in the fact that not only a number of firms are already active in some of the EIs but also a number of research institutions conduct specialized R&D, results of which could be further exploited by the businesses active in the EIs. Bratislava based Technological Institute of the Slovak Academy of Sciences cooperating with other knowledge institutions (National

Institute of rheumatologic diseases, Institute of Electrical Engineering SAS, Polymer Institute SAS, Institute of Inorganic Chemistry SAS) works on development of new, modern technologies which could be applicable in the field of Green Economy (*e.g. new materials, biodegradable polymer products*) Sustainable Mobility (*e.g. development sensor for gases security in cars*) and Active Ageing (*R&D in the area of rheumatology*). One of the best possibilities to link the results of the research to the business would be via clusters. Both regions in this respect expressed via their representatives on the last RPD held in Bratislava on 23 July 2013 their willingness to support establishment of new clusters, with Bratislava region having clusters defined in the RIS as one of the innovative tools for which some budget was already set up for 2014. In this respect, more information activities on the advantages of clustering and potential that the new, EU supported EIs offer would be desirable in order to attract interest and reveal the new opportunities to local business that could launch the bottom-up demand.

III. Cross-cutting Issues

In the second part of the report we will address the cross-cutting issues in the regions of Bratislava and Trenčín region.

Internationalization

Internationalization is one of the crucial cross-cutting issues for the Slovak economy as most of our GDP is based on export (according to data of the statistical office of SR export share on GDP was 89.7% in 2011). Bratislava region is particularly well situated for internationalization as it borders 3 countries and can profit from the relation with Vienna and Brno region. In line with the COSME and financial tools of EIF, RIS also includes support of internationalization into the most important activities that should support innovations in Bratislava region in the upcoming programming period. RIS further states that support of internationalization of firms is an important part of supporting services given the fact that Slovak market often doesn't reach the critical size for their start. Number of organizations (*e.g. BIC Bratislava, NADSME)* and programs are active in the field of internationalization and help both companies to expand their business over the border on regional and national level, and, attire foreign investors to Slovakia and its regions (*Slovak Investment and Trade Development Agency (SARIO))*. NADSME is a member of Enterprise European Network (EEN) – international network established in more than 50 countries which provides business opportunities, information and professional guidance to small and medium sized enterprises ("SMEs").

Knowledge & Technology Transfer

In the process of development of full potential of the EIs in regions, Knowledge & Technology Transfer ("KTT"), defined as "complex process of transferring the results of research and development activities in public institutions of scientific research into the economic and social practice in order to evaluate them commercially", is one of the most important cross-cutting issues. As mentioned in the first part of the report, most of the research institutions as well as institutions supporting the KTT (such as Slovak Academy of Sciences in Bratislava (SAS) with its own Technology Institute for transfer of technology; Slovak centre of scientific and technical information with its project NITT SK – National Infrastructure for Supporting Technology Transfer in Slovakia) are located in Bratislava. Given this concentration Bratislava has the full potential to become the innovative region of European importance as stated in the RIS. Enhanced support and widespread of KTT in both regions would be particularly desirable with respect to the mentioned low percentage of conducted applied research and rather low willingness, from the part of businesses, to cooperate with the research institutions on special required solutions. This is also the main objective of the Project NITT SK, which has 3 specific aims: establishment of the Technology and Transfer Center at SCSTI to create system support technology transfer at the national level; support to the scientific community in the process of technology transfer via utilization of the existing capacities and resources of the research and

development information and communication technology infrastructure; render the process of the transfer of scientific knowledge and technology into the economy and society more efficient through the popularization of science. Among the supporting services that NITT SK offers to public research institutions are identification of intellectual property ("IP") with commercial potential, advisory on decision on form and realization of the intellectual property rights protection, marketing of the protected IP, research of partners and drafting of the license agreements.

Gender in Innovation

With slight lagging behind the EU 27 average in the Gender Equality Index, gender equality remains an actual topic for Slovakia and its regions. The share of employed women in Slovak republic was 44.3% for 2011 with men having better access to employment and higher salaries (in average gross salary of women was lower of 24.2% in 2011). As far as the entrepreneurship is concerned, in 2011 only 9.6% of women declared entrepreneurship as their main employment (against 20.8% of men). As far as gender in innovation is concerned in both regions the number of men employed in the R&D outreached the number women – with almost 8 000 men and 6718 women employed in R&D in Bratislava region and almost 1000 men and 246 women employed in R&D in Trenčín region, for 31.12.2011. Other than unequal access to employment, one of the persisting issues confirmed by the qualitative mapping in WP4 remains the disadvantageous conditions for maternity leave and difficulties to find suitable job opportunities in the its later stage and after its end – which consequently supports negative demographic trend and ageing of the population. Number of project and public and private organizations based mainly in Bratislava are active in the field of gender equality. National project to support gender equality active in both regions is the leading infrastructure of gender equality politics aiming to support and monitor that equal opportunities for men and women are created and respected.

Good practice in the gender innovation – "Guardian Angels for Female Entrepreneurs"

Via project "Guardian Angels for Female Entrepreneurs" NADSME supported female entrepreneurship and directly reacted to the call of EC entitled "European Network of mentors for Women Entrepreneurs". The main objectives of the project were to further support female entrepreneurship in Slovakia, recognize and support the distinctive nature of female business start-ups ensure that newly established female entrepreneurs survive their first, very challenging years of business. Throughout its first year of existence the project has succeeded in reassembling 14 mentors and 33 mentees who met altogether 184 times and received very good acceptation and interest from the public with 50 press releases and 4 radio/TV spots. The project won the national round of the European Enterprise Promotion Awards 2013 in the field of Promoting entrepreneurial spirit and will be competing in EU round. The results should be announced in the autumn 2013.

Potential and gaps

All three cross-cutting issues play important role on the path of both regions towards their development and development of their potential with respect to the EIs. Internationalization is clearly the crucial economic driver for both regions. Support for knowledge and technology transfer is necessary to enhance the innovative potential

of businesses in both regions and thus their competitiveness. Major gap in this respect is the mentioned insufficiency of the applied research.

IV. Conclusions for pilot development

Based on the findings and conclusions of the 3rd Regional Policy Dialogue, the most suitable pilot project for the Bratislava and Trenčín region could be in our opinion a project focused on the transfer of best practices from the European regions with strong cluster tradition and already established successful clusters. The main objective of the project would be to show the SMEs from the two regions what are the main advantages of clustering – a tool in support of innovations that their regional authorities are willing to support – based on real, empirical examples. In accordance with the application form/ project logic, this is one of the main roles of NADSME in the project and its fulfillment appears as particularly important in the context of the two regions, which currently don't have any clusters at all.

The pilot project would thus include one main activity with two outputs – two conferences for the regional SMEs, one in Bratislava and the other in Trenčín region. In addition to CluStrat project partners from regions with successful cluster policy, representatives of regional authorities and experts (local or European) on European policy 2014 – 2020 would participate as speakers in order to inform regional SMEs on the main advantages of clustering and funding. Conferences would serve both as instructional and networking event that could bring to the common discussion possible future cluster partners – SMEs, universities and public authorities and SMEs and regional authorities.

As stated in the Regional Innovation Strategy of Bratislava region for 2014 – 2020, cluster development is one of the actions addressed and supported by numerous EU strategic documents and financial tools for 2014 – 2020, and it would thus be particularly useful to explain to the SMEs of Bratislava and Trenčín region what are the main advantages of clustering and inform them about the current and future possibilities of funding of the clusters' operation and screen the preliminary interest of SMEs in clustering (bottom-up approach).

Keeping in mind the current budget for NADSME for WP 6 and initial logic of the CluStrat project, under which NADSME should provide mainly assistance in implementing pilot actions and not to act as a lead partner, NADSME would possibly join the pilot action(s) of other partners that are focused on the key enabling technologies of the region – e.g. for Bratislava region possibly a project aimed on the Green Economy or Sustainable mobility and for Trenčín region a pilot action in the field of Active Ageing or Green Economy.