

## SMART SPECIALIZATION AS THE BASIS FOR SUSTAINABLE DEVELOPMENT

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### Abstract

European Union requires policy makers to consider how the different aspects of smart, sustainable and inclusive growth are interrelated. Integrated smart specialization strategies respond to complex development challenges by adapting the policy to the regional context. Smart specialization is a new innovation policy concept designed to promote the efficient and effective use of public investment in research. Its goal is to boost regional innovation in order to achieve economic growth and prosperity, sustainable development of regions, to allow regions to focus on their strengths. The goal of the research is to analyse possibilities of smart specialization and to propose suggestions for smart specialization areas in one of the Latvia's regions – Vidzeme Planning Region (VPR). The main tasks of the research are to analyze smart specialization resources of VPR and to evaluate region's competitive advantages; to propose smart specialization areas in VPR; to propose economic and innovation indicators, their measurement and monitoring at NUTS 3 level. To carry out tasks of the research quantitative and qualitative research methods were applied: document analysis, formation of focus group, questionnaire of experts, grouping of data and information, statistical data processing, calculation of average and relative values, graphical analysis, inductive and deductive methods of analysis. Because national-level priorities and areas of specialization are defined, it is necessary to define smart specialization trends at the regional level on the basis of resource analysis for smart specialization, covering such areas as business development, education and innovation. The strategy provides targeted focus of resources to research and innovation in specialization areas, where the region has a comparative advantage or the base for creation of such advantage. Based on the analysis of the existing situation in the region, the strategic goals for Vidzeme region smart specialization were proposed. Based on expert evaluation specific smart specialization areas were determined.

**Key words:** smart specialization, innovations, regional development, sustainable development.

**JEL:** R58.

### Introduction

Smart specialisation is a relatively new concept both at academic and political level. Current references are limited to the authors that actually advise the European Commission called as „Knowledge for Growth” (Foray, Van Ark 2007; Foray et al. 2009; McCann, Ortega-Argiles, 2011). According to them, smart specialisation could be defined as the identification of a small group of sectors/technologies at regional/national level, which can be potentially competitive in international markets and generate new activities with comparative advantage over other locations [1].

Smart specialization is designed to promote the efficient and effective use of public investment in research. Its goal is to boost regional innovation in order to achieve economic growth and prosperity, by enabling regions to focus on their strengths. Smart specialization understands that spreading investment too thinly across several frontier technology fields risks limiting the impact in any one area.

The goal of the research is to analyze possibilities of smart specialization and to propose suggestions for smart specialization areas in Vidzeme Planning Region (VPR). The main tasks of the research are to analyze smart specialization resources of VPR and to evaluate region's competitive advantages; to propose smart specialization

areas in VPR; to propose economic and innovation indicators, their measurement and monitoring in NUTS 3 level.

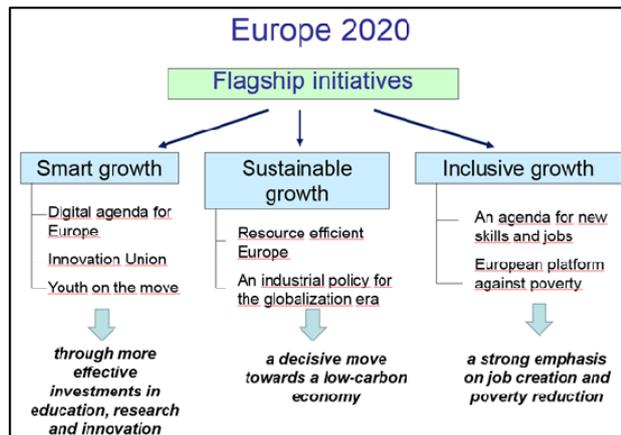
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### 1. Necessity of the Smart Specialization strategy

In November 2009, the European Commission published the report „Knowledge for Growth”, the results of an expert advisory group to the EU. Tasked with finding an alternative to public policies that were seen to spread public investments in knowledge and innovation – research, education, public support to business R&D, etc – thinly across technology research fields such as biotechnology, ICTs, and nanotechnology, the expert group proposed that national and, especially, regional governments should encourage investment in domains that would „complement the country's other productive assets to create future domestic capability and interregional comparative advantage”. This strategic proposal was coined „smart specialisation” and

it spread quickly and was adopted in the EU 2020 Agenda [2].

Nowadays the most important strategic document in the EU is „Europe 2020” – the European Union’s ten-year jobs and growth strategy. It was launched in 2010 to create the conditions for smart, sustainable and inclusive growth (Fig. 1) [3].



Source: Authors after [4].

Fig. 1. Europe 2020 initiatives

In Figure 1 it is possible to see the main initiatives of the strategy „Europe 2020”, which provides way to more investments in education, research and innovation, move towards low-carbon economy, as well as job creation and poverty reduction.

One of the instruments used to reach the goals of the strategy „Europe 2020” are European structural funds. Funding from the structural funds provides economic, social and territorial cohesion, as well as helps to realize different activities to reach smart, sustainable and inclusive growth.

Cohesion policy for the period 2015–2020 must be strongly orientated towards results in order to contribute to the „Europe 2020” strategy. The EU regulation increases the importance of well-designed programs taking into account European, national and regional needs, and focused on the results they want to achieve. The role of the ex-ante evaluation is thus reinforced in the new programming period. It should ensure that the operational programs clearly articulate their intervention logic and can demonstrate their contribution to the „Europe 2020” strategy. It should also help to put in place functioning monitoring systems which meet evaluation requirements. Its recommendations should be clear, based on evidence and adapted to the particular needs of the programs [5].

To get finances from EU structural funds for research and innovation, Latvia must work out Smart specialization strategy, which is obligatory ex-ante condition. A smart specialization strategy needs to be built on a sound analysis of regional assets and technology. It should also include an analysis of

potential partners in other regions and avoid unnecessary duplication. Smart specialization needs to be based on a strong partnership between businesses, public entities and knowledge institutions – such partnerships are recognized as essential for success [6].

The smart specialization strategy is now a reality. With regions and nations having completed the technical fulfilment of the ex-ante conditionality and the related action plans, the first evaluation studies have been launched with the aim to assess the consistency of the concept, once moving from the design (theory) to the implementation phase (practice) [7]. There are also many authors that have analysed the first results of those strategies

## 2. Development of Smart specialization strategy at national level

Regions recognize that the role of universities and the importance of scientific research are increasing, but the question of how to quickly and effectively transform research knowledge into practical applications still poses a major concern. The region’s ability to learn, the practice of organizational learning, and the ability to conduct research and innovation in multi-dimensional teams and networks are basic requirements of modern societies. This is part of what makes regions „smart”. But, both the importance and the difficulty of learning increase significantly in larger regional innovation ecosystems [8].

The need to promote innovation and productivity is not new concept. More and more attention is paid to the need to create products with higher added value, which is possible only in close cooperation of companies, scientific and educational institutions. Therefore, smart specialization strategies include the so-called knowledge triangle formed by research, education and innovation.

To push forward the smart specialization concept, the European Commission announced the setting up of the S<sup>3</sup> Platform (RIS3) in a 2010 Communication entitled „Regional Policy contributing to smart growth in Europe 2020”. This platform aims to assist regions and Member States in developing, implementing and reviewing regional smart specialization strategies, and help regions identify high-value added activities which offer the best chances of strengthening their competitiveness [9].

A simple six-step approach to RIS3 is defined as follows:

1. analysis of the regional context and potential for innovation;
2. set up of a sound and inclusive governance structure;
3. production of a shared vision about the future of the region;

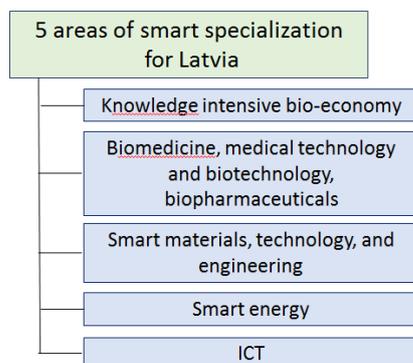
4. selection of a limited number of priorities for regional development;
5. establishment of suitable policy mixes;
6. integration of monitoring and evaluation mechanisms [10].

As well as the RIS3 Platform facilities there are also various other European Commission data-based initiatives aimed at helping analysts and policy-makers to better profile, benchmark and position their countries and regions and their innovation performance in the broader context. These include the: RIM Plus – Regional Innovation Monitor Plus; Regional Innovation Scoreboard 2014; Regional Competitiveness Index 2013; KETs Observatory; Digital Entrepreneurship Monitor; Eurostat Regional Statistics Illustrated datasets; Regional Development and Entrepreneurship Index; the European Cluster Observatory; the Research and Innovation Observatory (RIO). These sources are all different and each offers different types of innovation-related data and provides different sets of insights to aid policy-makers in their regional profiling activities [11].

On December 17, 2013 the Cabinet of Ministers of Latvia adopted the informative report „On the development of smart specialization strategies”, which sets out directions, priorities and areas of specialization of the Latvia’s economy transformation. Seven growth priorities were defined:

- production of products with higher value-added, including non-technological innovation, such as the creative industries;
- effective innovation system;
- improving of energy efficiency;
- development of ICT systems;
- improvement of the education system and skills, creativity in all levels of education;
- knowledge base (fundamental science and scientific infrastructure) and human capital development;
- identification of existing resources and specialization.

The strategy also puts forward five areas of smart specialization for Latvia.



Source: Authors after [12].

Fig. 2. Smart specialization areas for Latvia

To reach the goals of Smart Specialization Strategy it is necessary to develop smart specialization strategies for each region.

### 3. Development of Smart specialization strategy for Vidzeme planning region

Because national-level priorities and areas of specialization are defined, it is necessary to define smart specialization trends at the regional level on the basis of resource analysis for smart specialization, covering such areas as business development, education and innovation. The strategy provides targeted focus of resources to research and innovation in specialization areas, where the region has a comparative advantage or the base for creation of such advantage.

The comparative advantages of the region can be defined after evaluation of region’s competitiveness. The regional competitiveness is the ability to meet the needs of the region’s population and to ensure the highest possible standard of living most efficiently using the existing and attracting the necessary resources [13]. Efficient use of the existing resources and attraction of the necessary resources boosts the companies’ ability to create new products, enhance the competitiveness of their products, which is one of the most important pre-conditions for the regional development and main goal of the smart specialization strategy.

According to ESPON study „EDORA – European Development Opportunities for Rural Areas” classification of the regions, VPR is described as non-metropolitan rural region, where more than 50% of the population live in areas with low population density. In addition, the study found that the region’s resources (human, financial, etc.) are depleted [14].

A lot of statistical data were analyzed to define comparative advantages of Vidzeme Planning Region. They were classified into 7 large groups (Fig. 3).

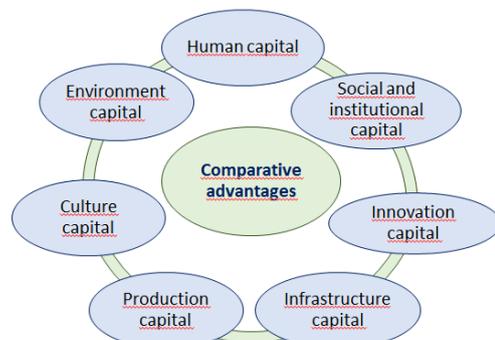


Fig. 3. Classification of statistical data for defining the comparative advantages of VPR

After analysis of statistics, smart specialization areas for VPR were defined using the following criteria:

- specialization area is perspective in long-term;
- region has competitive advantage for development of specialization;
- resources for specialization are available in the region or it is possible to attract them in cooperation with other regions;
- there is the potential for cooperation of business, research and education institutions to increase the added value of products;
- there is high export potential for specialization area [15].

Based on the analysis of rural regions' trends and the evaluation of the existing situation in the region, the strategic goals for Vidzeme region smart specialization were proposed. Based on expert evaluation specific smart specialization areas were determined (Table 1).

**Table 1. Strategic goals and smart specialization areas for Vidzeme planning region [15]**

Strategic goals	Smart specialization areas
1. To promote production of higher value-added goods and services (including niche products) in traditional industries of the region	High value added wood products Production of healthy food and drinks Recreation and sustainable tourism
2. To diversify economy of the region by developing entrepreneurship in areas of the existing specialization	Rehabilitation and health care Biomass for chemical conversion and production of energy Smart materials
3. Development of new forms of entrepreneurship in knowledge economy	Information technologies Creative industries Remote professional services

Prospective niche products were identified for each area of smart specialization [15]:

- *High value added wood products* – production of wooden houses, playgrounds for children, solid wood furniture and folding furniture of wooden boards;
- *Production of healthy food and drinks* – processing of organic products, functional food, products from home and small producers, food production for private trademarks;
- *Recreation and sustainable tourism* – tourism of nature, landscapes and history, rivers, artistic and cultural events, manors and

churches, gourmets, experiences, hunting, military heritage;

- *Rehabilitation and health care* – a modern rehabilitation and health promotion center developed on the basis of the rehabilitation center Ligatne; parental care services, including boarding houses for foreign citizens, yoga, meditation and health improvement camps, development of e-health solutions;
- *Biomass for chemical conversion and production of energy* – biodegradable waste recycling, biogas production, waste management and consultancy services, fast growing energy crops;
- *Smart materials* – production of technical and textured glass fiber fabrics, glass fiber fabrics with high content of SiO<sub>2</sub>, glass fibers and fiberglass yarns;
- *Information technologies* – development of individual programs, data processing and maintenance, development of mobile apps and games, development of IT infrastructure for state and local government institutions in the local market, computer programming and consulting;
- *Creative industries* – crafts and design, cinema, theater, music, advertising, as well as entertainment and recreation, Cesis Art Festival, audiovisual and IT companies offering various communication and media solutions;
- *Remote professional services* – outsourcing, telemarketing services.

Taking into account the results of the analysis of the existing situation, gathering information about points of view of representatives of education, research and business sector and examples of best practices in Latvia, the Action Plan was elaborated. It contains main courses of action for each area of smart specialization, as well as horizontal priorities (Table 2).

**Table 2. Action Plan for Vidzeme planning region [15]**

Area of smart specialization	Action
Production of healthy food and drinks	Promoting cooperation between regional producers Innovation voucher
High value added wood products	Promoting cooperation between regional producers Innovation voucher
Recreation and sustainable tourism	Promoting interregional cooperation Creating a single website Design voucher

(continued)

Rehabilitation and health care	Modernization of the Rehabilitation Center Ligatne Building of E-health cluster Implementation of vocational education program in the region
Biomass for chemical conversion and production of energy	Promoting cooperation between research institutions and producers Expansion of waste sorting possibilities Public education and promotion of the recycling sector among young people
Smart materials	Support for the establishment of service companies Communication platform on labour market requirements and supply in the region
Information Technologies	Providing start-up support tools for students to create new products Outsourcing services for mobile app and gaming development companies High-level research services Development of joint marketing and positioning of the industry abroad Solutions for Business Process Analysis
Creative industries	Implementation of professional and continuing education design programs in the region Visibility and export promotion for handicrafts and professionals of creative industry
Remote professional services	Development of Smart Work Centers Reasonable decentralization of public sector

For each action institution, which is responsible for this action, source of finance and target territory (all region, national and regional centres, cities) were defined.

As horizontal actions it is possible to suggest studies for implementation of smart specialization in the region; establishment of Vidzeme Business Center; creation of Smart Technology Park; recruiting program of high-skilled workforce; development of interdisciplinary study programs in the fields of business, ICT and design; providing territories and premises for business development in the region; Development of housing stock in Valmiera, as well as in other regional development centers

#### 4. Monitoring system for implementation of Smart specialization strategy

It was also necessary to work out an effective monitoring system for successful implementation of smart specialization strategy. Indicators of economic and innovation environment must be clearly defined in terms of content and values, they must be measurable, provide adequate information on the situation and comply with the system-wide. They should also be politically important indicators – change of values may be followed by action. At the same time indicators should help to simplify the process of analysis and identify problems.

In the context of smart specialization analysis the innovation capital is important. Therefore the authors suggest using innovation potential model to evaluate economic development and innovation capacity in VPR. It includes 5 directions of analysis in NUTS 3 level:

1. Science and research:
  - Share of institutions engaged in research and development, %;
  - Share of R&D personnel, %;
2. Productivity:
  - Share of innovative enterprises, %;
  - GDP per employee, euro;
  - Share of goods and services with high value added in region's GDP, %;
  - Share of export of goods and services with high value added in total export of the region, %;
3. Technologies:
  - Patents per 1 million inhabitants, number;
4. Investments:
  - Expenditure for science and research, millions euro;
5. Labour:
  - Share of creative class, %;
  - Share of population with higher education, %.

The information gathered in the monitoring process is the basis for assessment. Monitoring and evaluation system helps implementers of the strategy to inform the public about the activities and achievements.

#### Conclusions

To work out smart specialization strategy it is necessary to improve the productivity of traditional industries by increasing the added value of products and creating niche products; to modernize the economy by adopting the new technologies; to diversify the business sector; to develop new business activities by radical innovation and scientific discoveries; to develop new forms of innovation, such as user-driven innovation, social innovation, service innovation, etc.

In the result of implementation of Smart specialization the region's competitiveness will increase, moving from low-cost advantages to the high value-added manufacturing and services in the knowledge economy.

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