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Foresight methods for smart specialisation strategy development in Lithuania

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ABSTRACT

This paper presents the methodological approach and first results of the ongoing national level foresight process organised in Lithuania in the context of preparing the smart specialisation strategy and defining the national research and innovation priorities. The main objective is not to determine where to invest but how to help agents to discover where to invest in a decentralised and bottom-up logic. The methodology accepted in Lithuania departs from the traditional approach to priority setting focused on identification of research fields or economy sectors, and builds on the concepts of long term challenges and critical technologies. Choosing challenge-based priorities allows to better develop synergies and integrated policies, thus reducing fragmentation. A mixed qualitative and quantitative method approach is applied, including the expert panels, surveys, statistical and bibliometrical analysis, roadmaps, and analytical studies on the emerging trends and long term challenges.

1. Introduction

The existence of a national strategy for smart specialisation (S3) is an ex ante conditionality for the use of the European Union (EU) Structural Funds from 2014 to 2020. The underlying rationale is that by concentrating resources in research and innovation and linking them to a limited number of priority economic areas, countries can become and remain competitive in the global economy. However, S3 that ignores country-specific economic and institutional context is bound to fail. In case of Lithuania this context to consider is characteristic for a country who is exploiting the advantages of the efficiency or factor driven phase of economic development, but at the same time aspiring to make a further shift towards the competitiveness based on knowledge and innovation. Considering this, the mid- to long-term challenge for Lithuania is to promote the structural change of economy by providing transformation agenda for diversification of existing sectors and transition to new activities. S3 can provide a suitable platform for that transformation, as it is fundamentally based on a process of entrepreneurial discovery — an 'entrepreneurial selection' of market opportunities or a 'self-discovery process' (Hausmann & Rodrik, 2013). The objective is not about telling the innovation system actors what the right specialisations are but accompanying emerging trends and improving coordination by providing the necessary public goods and creating additional incentives at critical bottlenecks to help the new activity to grow. Therefore, the outcome of the process is a structural evolution of the whole economy (Foray, 2011).

At present Lithuania has a number of basic weaknesses present in its innovation system. The growth experienced so far cannot be considered as knowledge based. The most prominent sectors in economy are traditional ones accounting for the largest share in value added, employment and leading in the Lithuanian exports. However, to sustain the competitiveness they face the need of upgrading. At the same time, the innovation potential in the Lithuanian economy lies within emerging high technology

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sectors like biotechnology and pharmaceuticals, which are still rather small with little to contribute to economy in terms of value added and employment. The majority of overall modest research and development (R&D) efforts in Lithuania are funded by the public sector and carried out by public research institutions. The cooperation between industry and public research organisations has remained at a very low level and success stories on the technology transfer or commercialisation of public R&D are rare. There is fragmentation of R&D and innovation (R&I) policy priorities, programmes, funds and institutions, and failure to leverage different funds and create synergies between measures. Efforts to concentrate funds and create connections, such as the 'science valleys' or clusters, have so far been able to deliver only very limited effect. This is a critical issue, considering the policy mixes planned for the implementation of S3. Governance of R&I policy is non-systemic, characterised by limited synergies. It lacks cross-departmental cooperation and is mirrored by ineffective and process-oriented policy implementation. As the implementation of S3 is largely a governance challenge, those issues need attention and action already in the S3 design phase.

In this context one might argue whether Lithuania is ready for the adoption of the concept as sophisticated and demanding as the smart specialisation. However, development of S3 has a strong potential to generate and catalyse systemic changes in the Lithuanian R&I arena in many respects. First, the S3 turns the R&I policy's centre of gravity to economy and society and their long term challenges compared to the previous technology-centred and linear understanding of innovation. Second, it enforces to make selections, set clear and consistent priorities and mobilise resources across different administrative 'pockets' both at national and transnational levels, thus reducing fragmentation. Third, it can considerably improve the policy making and implementation practice and set new requirements for the policy governance.

Foresight has been promoted as a tool for enhancing innovation and change at various levels, in comparison to incremental improvements and inertia (Patton, 2005). The general goal is to create awareness about the external environment and to enable strategies to react to those changes (Patton, 2005). Foresight thus aims at identifying discontinuities, trends, emerging technologies and future opportunities in promising areas of strategic research, and providing early warning about potential threats to support planning and shape strategy (Martin, 1995). Foresight can offer vital input for 'quantum leap' in R&I policymaking. It stresses the possibility of different futures, as opposed to the assumption that there is an already given, pre-determined future, and hence highlights the opportunity of shaping the future. It can enhance flexibility in policy making, broaden perspectives, and encourage thinking outside the box. In other words, foresight can serve as a crucial part of an early warning system, and it can be seen as an instrument for an adaptive, 'learning society' (Havas, 2003). Over time, there has been a shift from environmental scanning and trend extrapolation to exploring possible changes and shaping the future with the help of participatory methods (Daheim & Uerz, 2008). It has been argued (Blackman & Henderson, 2004) that the dominant logic in organisations and/or policies hinders the acknowledgement of change and acceptance of alternative development paths. The task of proactive participatory exercises, therefore, is to challenge basic assumptions and the underlying mental models that are used to build consistent expectations about the future (Blackman & Henderson, 2004). Foresight is a suitable approach for defining the Lithuanian R&I priorities and developing the smart specialisation strategy as it combines participatory process elements with systematic future exploration (Weber, 2012). First, there is a clear need to 'shake' or reshape the system, diversify into new development paths and find new routes to cope with existing problems. Quite a few pressures — especially the need to build linkages and facilitate cooperation, change attitudes and norms, develop new strategies and solutions, and balance budgets — are now pressing the decision makers. Second, participation is a key element of foresight. Involvement of key stakeholders early in the process can ensure that the insight creation is followed by actions (Salo & Cuhls, 2003).

In spring 2013, the Lithuanian Ministry of Education and Science and Higher Education Monitoring and Analysis Centre (MOSTA) launched a foresight-type process for identifying the smart specialisation priorities. MOSTA has got a mandate for coordinating the respective foresight process. An International Independent Expert Group consisting of the national and international experts, implementing agencies and social-economic partners was formed in March 2013 to assess the current R&I potential in Lithuania and to provide recommendations on the priorities for smart specialisation and their further development until 2020.

This paper:

- Discusses the context of a country marked with socialist past and economy transition and explains the methodological approach adopted for selection of the national smart specialisation priorities for State investments in R&D and innovation;
- Presents the first stage results of the ongoing foresight process;
- Discusses further steps in finalising the process and implementing the smart specialisation priorities.

2. Methodological approach

2.1. S3 priorities: principles, tensions and national context

The ex ante conditionality (European Commission) and Guide to Research and Innovation Strategies for Smart Specialisation (Foray et al., 2012) sets out several key requirements regulating the process and outcomes of identification of smart specialisation priorities. It is expected that resources should be concentrated on a limited number of well-defined priorities. This requires tough choices on the basis of own strengths and international specialisation (Foray et al., 2012). The selected priorities should be based on a shared vision built during wide consultation process. It should include a wide range of entrepreneurs, researchers, social partners, etc. Priority setting should rely on the logic of entrepreneurial discovery of likely market opportunities (David et al., 2013). It concerns experimentation and discovery of domains of specialisation given the existing productive assets. The discovery process is expected to focus on embedded national/regional strengths and fostering of related variety, i.e. building on the existing skills, assets and capabilities to develop new growth paths, sectors, and modernisation of 'traditional' industries (Asheim et al., 2011). External linkages are also important, i.e. it is expected that national priorities should constitute elements