Regional innovation strategies in Poland: lessons and recommendations

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Rotterdam, 2004
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# Table of contents

1. Introduction ............................................. 4  
2. Regional systems of innovation ..................... 5  
3. Regional innovation strategies in Poland .......... 9  
4. Lessons and recommendations ....................... 12  
5. Selected literature .................................. 14
1 Introduction

Very recently Poland has become member of the European Union. This membership has opened the gate for substantial support through the Structural Funds, in order to achieve economic and social cohesion among the countries and regions in the EU. The type of support that will be given to Poland has been negotiated in the Community Support Framework (CSF) Poland 2004-2006. This CSF is based on the development strategy and priorities laid down in the Polish National Development Plan 2004-2006 and detailed in separate Operational Programmes (OPs).

Key drivers for fostering convergence with Europe is the development of competitiveness for Polish industry and creating basic infrastructures and an attractive business environment for existing and new firms, of both Polish and foreign origin. Like in other parts of Europe innovation is seen as an important condition to stimulate the competitiveness of Polish industry. As a result in several OPs measures to foster innovation have been included. In fact this already contributes to the desire expressed by the EU-leaders at the Lisbon Summit in 2000 to make the EU the most competitive knowledge-based economy by 2010 (afterwards indicated as Lisbon strategy).

Innovation has not only been included in the sectoral OPs, but also in the regional OP (IROP). One of the measures of IROP is the development and implementation of regional innovation strategies. These strategies focus on creating conditions for innovation at the regional level, among others through identifying local strengths, mobilizing partners and co-ordinating policy actions. Started once as experiments regional innovation strategies have become important instruments in Europe and also elsewhere for stimulating the development of knowledge, technology diffusion and clusters in regions and local communities. This experience can therefore provide valuable lessons for setting up innovation strategies in Polish regions.

In this document we will present lessons and recommendations to take into consideration when elaborating and implementing regional innovation strategies in Poland. The following aspects will be dealt with:

- A short overview of the findings from the literature that has been issued over the last decade in Europe and elsewhere on regional innovation systems, based on different sorts of experiments and approaches in various regions (Chapter 2);
- A synopsis of the strategies that have been drafted or are in a process of being drafted and/or decided upon in Polish regions (Chapter 3);
- On the basis of this overview of recent international findings and the synopsis of innovation strategies in Polish regions we will present key lessons and recommendations for relevant actors in Poland (Chapter 4).
2 Regional systems of innovation

The role and importance of regional innovation systems (RIS) in economic development and growth has attracted considerable attention in recent years. The concept of regional innovation systems combines older notions of regional development based on the provision of capital and support for physical infrastructure with newer insights in which the development of knowledge, technology diffusion and clusters play a central role. Recent literature indicates that regional innovation systems may arise where a number of factors are in “proximity”. In an era in which technology is allegedly dissolving locational constraints and material needs, geographic clusters and relational space, comprising both physical and more intangible characteristics - including institutions – appear still to be of central importance to innovation and development (see, for example, Porter, Scott, Storper, Schoenberger). Regional innovation systems link a wide range of players in the research and innovation community at regional level.

An important implication stressed by RIS research is that competitive advantage and regional economic growth are driven by place-specific and often ‘non-economic’ factors. RIS are used both as a construct to analyse and grasp important aspects of the working of regional clusters and as a tool in policy making to create systems of innovation in support of business competitiveness on a regional scale (see, for example, Cooke et al, 1998). A better understanding of what makes regional innovation systems successful and what not, and a better understanding of do’s and don’ts would not only add to the policy debate, but also help to create and implement more targeted and better policies, in particular research, technological development and innovation (RTDI) policies.

Comparative research on innovation systems shows a number of interesting features that can apply at the regional scale (see e.g., Dosi et al, 1988; Lundvall, 1992; Nelson, 1993; Cooke and Morgan, 1998). Important factors in the development of innovation systems include:

1. The organisation of R&D - with an important role for government funding, and large firms. National technological specialisation may reflect this, as may mechanisms of diffusion, giving rise to particular key arenas of interaction;
2. The ensemble of education and training institutions - providing particular skill configurations within the workforce, influenced to a greater or lesser extent by industry. There may also be significant differences in the way in which these skills are organised within the firm - for example, the extent to which vertical hierarchies as opposed to horizontal relations prevail;
3. The financial system - the time-scale of investment, price of borrowing, financial regulations, accounting practices, corporate ownership rules and relations with industry;
4. The network of user-producer relations - the intensity and stability of feedback relations and, hence, learning. This may also however vary with product type;

5. Intermediate institutions - both sectoral (such as trade associations) and territorial (such as local chambers) may be key institutions of diffusion;

6. Social capital - features of social organisation, such as norms, networks and trust, particular configurations of which may prevail on a national basis, which may relate to particular national historical political-economic trajectories.

Stimulating regional systems of innovation has become an important tool in the armoury of regional economic development, particularly at the European level. Regional authorities are potentially in the best position to co-ordinate the implementation of policies to develop innovation at the regional level, as such activities by definition require a detailed knowledge of the existing local environment and actors. However, innovation policy needs to be linked and co-ordinated with research policy, which is generally managed from a national or international (EU) level. Education (particularly universities policy) and research policy plays an important role in regional development, but insufficient integration with the regional economic structure can hinder attempts to use these public interventions to promote economic development. Any work in this area will need to take into account the multi-level dimension of innovation within regions.

Without going into full detail, the following factors appear to relate to the extent of innovation occurring within a region. Not all of these attributes are measurable but they have implications for the structure and operation of regional systems of innovation and so the aims, ambitions and policy focus of actions to stimulate innovation in regions:

• The importance of routines, creativity and learning. One of the greatest challenges for organisations is how to strike a balance between routines, which help to steer and regularise organisational practices, and creativity, which is the lifeblood of innovation (Dosi et al, 1988). Learning is what helps firms to strike this balance and the capacity to learn depends in no small way on their absorptive capacity, i.e. an organisation’s ability to recognise, assimilate and exploit knowledge;

• Absorptive capacity. The critically important concept of absorptive capacity refers to much more than technical skills. Rather, it underlines the need for a shared cognitive framework within the firm and the ability to transfer knowledge across departmental boundaries. It also highlights the significance of organisational learning, which is much more than the sum of individual learning (Nonaka and Takeuchi, 1995). Lack of absorptive capacity is also used as an explanation for why regional technology policies often fail. Animated by a linear model of innovation, such policies were traditionally biased towards supply-side infrastructures. However, as a result of lack of organisational (‘learning’) competences and absorptive capacity most of these policies were less effective than intended (see, e.g. Dankbaar et al, 1994);

• R&D and less developed regions. While R&D may be an important factor behind differences in growth performance among advanced regions, and between advanced and less advanced regions, it does not seem to be a very efficient tool for peripheral regions below a certain threshold of development, that lack the necessary infrastructure and complementary assets (e.g., Cappelen et al, 1999). Many peripheral regions often have too few firms in the same industrial sector or local production system to constitute a regional cluster, precluding an important condition for local
networking and interactive learning is missing. We address this point specifically below:

- **Intangible assets: the importance of social capital.** Recent research in innovation has also stressed the growing significance of intangible assets, including *formal assets* like research, software, brands etc (Lev, 2001), and *informal assets* like *social capital*, which is shorthand for the *norms and networks of trust and reciprocity*. Unlike physical capital, which wears out with use, social capital wears out with disuse, and is enhanced when successfully used (Ostrom, 2000). Although social capital is notoriously difficult to define, let alone measure and quantify, it plays an increasingly important role in fostering/frustrating collective action within and between organisations (Grabher, 1993; Cooke and Morgan, 1998).

There are broadly three categories of policy instrument available to policy makers to influence regional systems of innovation. Firstly, *on the microeconomic level*, there are a range of interventions aimed at facilitating the introduction of new or improved products, processes and services onto the market. These include support for research activities in business, innovation management training, technology audits, seed and risk capital provision and other measures aimed at increasing the capacity of businesses to innovate as a principal source of competitiveness.

Secondly, *on the meso-economic level* are a series of interventions aimed at supporting and developing the innovation system at regional level to create “an economic and institutional environment that permits the creation, dissemination and adoption of knowledge (either in codified form of tacitly) that increases the competitiveness (and the attractiveness) of the regional economy” (Landabaso and Mouton, 2002). These instruments include creating public-private networks of co-operation, support for clusters, measures to improve the link between Research and Technological development (RTD) supply (universities and research bodies) and innovation demand from the economic base.

A third category of policies is even more indirect: *promoting a RIS-conducive environment*. The development of an environment that allows economic actors, in particular small and medium-sized enterprises to access the resources they need to increase their international competitiveness is viewed as an essential means to increasing the “structural competitiveness” of a region. These policies aim at the provision of framework conditions; governments act as facilitator and broker in bringing relevant partners together and by creating the right climate.

The recognition that institutions matter in innovation processes has only recently entered mainstream research. The concept of institutions include both ‘hard’ institutions (individual and corporate actors such as public R&D labs) and ‘softer’ more intangible institutions such as learning, trust, habits and customs, norms and values. Softer institutions are usually built up on the basis of face-to-face interactions, which continue to be more likely and frequent, particularly in more informal settings, (complementing formal ones) on a localised basis (e.g., Oughton et al, 2002; Asheim & Cooke, 1999). Such interactions combine socialisation processes with the evolution of relations and regional vision in a spatial, path-dependent process (Howells, 1999; Braczyk & Heidenreich, 1998). The spatial agglomeration of different institutions, including different industrial functions thus becomes important beyond the traditional conceptions.
of external economies in terms of 'collective economies' which require extra-market, co-ordinated and active involvement of actors, a certain amount of solidarity (Oughton et al, 2002; Lundvall, 1999).

The case of less developed regions

It is widely acknowledged that less developed regions face particular challenges in promoting and developing innovation potential. Not only do many of these regions lack some of the basic physical and human capital requirements, they also face the problem of the so-called “innovation paradox”. This relates to the comparatively greater need to invest in innovation in less developed regions, but the relatively smaller capacity of these areas to absorb public funds set aside for innovation. This is contrasted with the situation in already developed areas, where public funding is more easily absorbed and has a greater chance of success, despite the less pressing needs in the first place.

The problems of these regions in this respect are often linked to a fundamental absence of basic innovative capacity in businesses, but also to a relative lack of regional autonomy in decision-making and a lack of trust and tradition of cooperation between the different actors in the innovation system. In many respects the situation in (parts of) the new member states mirrors that of the EU Less Favoured Regions of the EU-15, with poor innovation and economic performance. However, in some important regards, particularly educational attainments and internet access, performance outstrips the EU average, demonstrating that in certain areas there is already a basis that can be used to step up innovation and as a result of that economic and social convergence.
3 Regional innovation strategies in Poland

The development of regional innovation strategies in Poland has only started recently. The impetus was given in the context of EU-policy (5th Framework Programme) that provided financial support to draft such strategies in selected pilot-regions on the basis of a model that was developed earlier in the European Union. This was followed up by an action of Polish government in 2003 that provided a grant to regions in order to undertake a similar exercise. Most of the Polish regions (voivodships) have taken action. However, at the time of writing not all regions have already their innovation strategy in place. Some are still in a process of finalisation and discussions at political level. By the end of 2004 this process will be almost finished, at least temporarily as innovation will be a dynamic and never ending phenomenon.

In the context of the present project we have already paid a fair amount of attention to the issue of developing innovation policies at the regional level in Poland (e.g. Pollock 2003, CIMPAN 2003). In fact we concluded that there is much variety in basic conditions regarding economic development and for innovation in Polish regions. On the basis of an analysis undertaken earlier for the European Commission in the context of the Third Cohesion Report (see Cambridge Econometrics/ECORYS, 2003) we outlined 4 different (proto-) types of regions:

- Production sites regional economies - regions that are attractive to significant flows of inward investment and conducive to export-driven manufacturing companies (examples in Poland: e.g. Slaskie, Wielkopolskie);
- Regions as sites of increasing returns - regions that have clustered and locally based internationally competitive industries (e.g. Pomorskie);
- Regions as hubs of knowledge - regions that receive and transmit high levels of internationalized knowledge, both formalized and tacit, and are dependent on high tech enterprises and high value services (e.g. Greater Warsawa);
- Mixed regional economies – regions with mainly low productive sectors with limited exports (e.g. Lubelskie, Warminsko-Mazurskie).

Each type of region calls for a different strategy towards economic development and innovation. Even within one type of region differences can be discovered, although similarities dominate. Our assessment of the innovation strategies in the present situation is primarily based on the discussions we have had in several regions, especially those regions on which we have concentrated in the context of the present project (Warminsko-Mazurskie, Lubelskie, Slaskie, Pomorskie, and Wielkopolskie). The results of the seminar Regional innovation strategies and support from the Structural Funds, which was held on 2 April 2004 in Warsaw, have also been included in this document.
In recognising different types of competitive regions with differing drivers of competitiveness and differing innovation needs, a region must answer 3 fundamental questions when embarking on a regional innovation strategy (Pollock 2003):

1. Where are we and where do we want to go;
2. How do we get there;
3. How do we manage the development journey.

Against these fundamental questions the following observations on the innovation strategies in Polish regions can be made:

1. There appear to be considerable regional differences in thoroughness of the analysis of the present and future situation on innovation. These differences are partly related to variations in availability of resources and preparation time (EU-supported strategies had more funds and started earlier) and partly to variations in experience in this specific area;

2. The logical chain analysis-strategy-priorities-measures-projects on innovation is quite weak in several regions. The consequence of this is that apparently there are discrepancies between real situation and need in the region - given its present and future competitive and comparative position - and strategies and actions of key actors;

3. In a number of regions the innovation strategy is hardly embedded in an overall economic development strategy, both regionally and nationally. This will result in a sub-optimal situation, less impact on the economic development of the region and usually less funds available for innovation;

4. In some regions there appears to be a mismatch in focus (too broad or too much concentrated in narrow areas) of strategy and priorities. Focusing on stimulating high technology activities and facilities in a predominantly rural area might create less economic impact than a strategy that is concentrating especially on the economic base of the region, at least in the short run;

5. In quite a few innovation strategies priority areas have been indicated where it is doubtful that the region will be able to acquire a substantial competitive position in an increasingly global world. This could be the case in areas like e.g. life sciences, electronics and nano-technology for which several regions do not yet have a good starting position, unless for very specific niches within these technology areas;

6. In many regional strategies local universities play an important role in fostering innovation. Although the role of universities cannot be denied, their role should not be over-emphasized as well, notably in regions that need to strengthen the innovative position of SME’s in their region;

7. Several regional strategies focus strongly on attracting inward investment flows and innovative FDI, also regions that have a dependence on agriculture, lower levels of business activity and a less central geographical position. Especially the
latter regions require economic development and innovation strategies that will optimise indigenous assets;

8 There is quite a *variety in instruments and actions* that are part of the innovation strategies at regional level. In terms of fields of intervention there is less variety, which means that most regions focus on similar fields, despite changes in economic structure. Several regions intend to focus on clusters of innovative activity, but their approach is far from sophisticated nor is their economic base;

9 In a number of regions there seems to be a *discrepancy between ambitions and priorities (including timing of these) on the one hand and available funding on the other*. The result of this is that it might take longer before the strategy will reach its goals or that ambitions need to be scaled towards budget available;

10 The *link between regional innovation strategies and national priorities is very weak*. In most regional strategies there is (too) little reference to national actions in specific technology areas, which is resulting in an under-utilisation of the innovative capacity in Poland;

11 The *types of partnership* that have been created in the various regions in establishing the innovation strategy *are varying considerably*. Some regions have initiated partnerships which involve all relevant local and regional actors, including representatives from the private sector, with clear distinctions in terms of tasks and responsibilities. In other regions these partnerships are still limited and are mainly involving regional and local governments and agencies (with the Marshall office usually in the lead), incorporating sometimes local universities and education centres.

On the basis of the European experience and the observations in Poland we will draw a few lessons and recommendations for the follow-up on innovation strategies in the remainder of this document.
4 Lessons and recommendations

On the basis of the European experience and the present situation in Poland, the following conclusions and lessons can be drawn:

- Polish regions have made an important step forward in establishing their innovation strategies in a fairly limited period of time. However, given the present status and detail of these strategies in several regions further elaboration will be needed, including monitoring of and adaptation to relevant developments;

- The processes for developing regional innovation strategies, systems and capacity are being driven by the regions. So far there is limited guidance from national government and institutions. There is no balanced top-down, bottom-up approach. This is a missed opportunity for central government to communicate its vision and priorities (e.g. key industries, clusters, technologies) for the national economy and the role of the regions in delivering this vision;

- There is very limited horizontal public partnership at the national level and this is leading to the transfer of fragmented and ineffective policy signals to the regions. There is also limited evidence of vertical public partnership mechanisms between national and regional levels. The effectiveness of partnerships at the regional and local level is potentially promising, but the results in most regions still need to be harvested;

- Several innovation strategies at regional level have quite a weak analytical and instrumental basis. More attention would be needed to establish a close link between analysis, strategy, priorities, measures and projects. Besides learning and feed-back on the impact of certain actions would create more effectiveness of innovation policies and more appropriate instruments. An important aspect in this context is also that several regional innovation strategies are not yet fully integrated in an overall economic development strategy for the region;

Based on these conclusions and lessons, the following recommendations are being proposed:

- Greater attention must be paid to understanding the differing types of Polish regions and the differing approaches to innovation and economic development required in each of them.

- There needs to be greater alignment between national and regional innovation policy. This requires a transparent articulation of respective responsibilities of national and regional bodies, development of formal mechanisms of interaction between the two levels, and an explanation of how national policy and interventions should be interpreted and implemented at a regional level. There also needs to be more co-
ordinated leadership from the center for regional innovation, e.g. Ministry of Economy, Labour and Social Affairs;

- Experience in other regions in Europe leads to the conclusion that this type of new policy requires a consistent approach and learning by doing, making of course good use of best practices in other regions. Consistencies in approach means that strategic actions should be followed for at least a certain time-span and include close cooperation with relevant partners. Making good use of best practices from other regions does not imply that these should be copied without taking duly notice of the specific situation and circumstances in the region;

- There needs to be communication of national industrial priorities and greater foresight work undertaken at the center. The regions need to know what are the current and probable future industrial priorities of the national government and the types of assistance available, and need to be able to articulate how the regional economy contributes to these priorities;

- Innovation investments at the regional level should be seen in a holistic manner. National and regional funds that are being spent for innovation in a region need to be: identified, assessed for complementarity with national and regional priorities; invested in a co-ordinated manner that optimizes impact for both the regional and national economies;

- There must be a clear articulation of the policy tools for stimulating innovation available through national and regional government. There needs to be a clear demarcation and broad communication within regions of the tools and incentives that are available and via what level of government.
5 Selected literature

- Cambridge Econometrics/ECORYS 2003, Factors of Regional Competitiveness, Cambridge
- CIMPA 2003, Comparative analysis report, Warsaw (issued in context of present project).
- Pollock, R. (2003), The Regional Dimension, Rotterdam (report issued in context of present project)