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**THE IMPACT OF INNOVATION ON THE
DEVELOPMENT OF THE MAŁOPOLSKA REGION**

**WPLYW INNOWACJI NA ROZWÓJ REGIONU
MAŁOPOLSKI**

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Summary: The last few years have brought a radical re-evaluation of the factors of socio-economic development. Information resources, knowledge and innovation took center stage and modern economy got the status of a knowledge-based economy. A region has become a key ground for development and forming economic policy. It is perceived as an incubator of knowledge and innovation, an essential element for the existence of processes of creation, absorption and diffusion of innovation. The Małopolska Region has unquestionable potential for innovation. It is characterized by a high scientific and research potential of Kraków's universities and research centers in areas such as biotechnology, information technology, nanotechnology, new technologies in medicine and renewable energy sources. Expenditures on research and development (R&D) in Małopolska are increasing and they place the region in the third position in the country. The purpose of the current paper is to describe the attitude to an innovation system in the Małopolska Region and introduce several activities carried out within the framework of the innovation program for the region. This study presents the characteristic of innovation in the Małopolska Region on the basis of selected indicators, among other things, expenditures on R&D in relation to GDP (GERD), and expenditures on R&D costs incurred by the business sector in relation to GDP (BERD). Furthermore, it describes the most important strategic activities for 2014–2020 aimed at increasing innovation of Małopolska and the impact on economic development in the region.

Keywords: regional development, innovation, regional innovation system.

Streszczenie: Ostatnie lata przyniosły radykalne przewartościowanie czynników rozwoju społeczno-gospodarczego. W centrum uwagi znalazły się zasoby informacyjne, wiedza i innowacje, dlatego też obecnie nowoczesna gospodarka ma status gospodarki opartej na wiedzy. Region stał się kluczowym gruntem dla rozwoju i kształtowania polityki gospodarczej. Jest on postrzegany, jako inkubator wiedzy i innowacji, niezbędny element na istnienie procesów tworzenia, absorpcji i dyfuzji innowacji. Województwo małopolskie ma niewątpliwą potencjał dla innowacji. Charakteryzuje się wysokim potencjałem naukowo-badawczym krakowskich uczelni i ośrodków badawczych w takich dziedzinach, jak biotechnologia, informatyka, nanotechnologia, nowe technologie w medycynie oraz odnawialne źródła energii.

Wydatki na badania i rozwój (R&D) w Małopolsce stale rosną i plasują region na trzecim miejscu w kraju. Celem niniejszego opracowania jest przedstawienie wpływu systemu innowacji na rozwój Małopolski. W artykule przedstawiono charakterystykę innowacyjności województwa małopolskiego na podstawie wybranych wskaźników, między innymi, wydatki na badania i rozwój w stosunku do PKB (GERD), wydatki na R&D kosztów poniesionych przez sektor przedsiębiorstw w relacji do PKB (EBOiR). Ponadto opisano najważniejsze działania strategiczne na lata 2014–2020 na rzecz zwiększenia innowacyjności Małopolski i ich wpływ na rozwój gospodarczy regionu.

Słowa kluczowe: rozwój regionalny, innowacje, regionalny system innowacji.

1. Introduction

Progressing globalization and a much stronger competition between countries on the international market brought about increased importance of regions, which have become perceived as elements helping in development of whole national economy. One of many definitions says that a region is territory less than its sovereign state, possessing distinctive supralocal administrative, cultural, political, or economic power and cohesiveness, differentiating it from its state and other regions [Andersson, Karlsson 2004]. From this point of view, region is in a sense a state within a state and thus it seeks economic growth and improving living standards all inhabitants. As Paul LeBlanc (member of The Territorial Development Policy Committee) said, “Increasingly, member countries recognize that national economic prosperity depends upon realizing the full economic potential of all regions.”

The last few years have brought a radical re-evaluation of the factors of socio-economic development. Information resources, knowledge and innovation took center stage and modern economy got the status of a knowledge-based economy. A region has become a key ground for development and forming economic policy. It is perceived as an incubator of knowledge and innovation, an essential element for the existence of processes of creation, absorption and diffusion of innovation. Innovation is an attempt to try out new or improved products, processes or ways to do things – is an aspect of most if not all economic activities [Kline, Rosenberg 1986]. On the other hand, innovation is perceived as result of ongoing and prolonged collaboration and interaction between firms and a variety of actors around them, for example, customers, producers, subcontractors, consultants, public organizations, research institutes and universities [Andersson, Karlsson 2004].

The main purpose of the current paper is to describe the attitude to an innovation system in the Małopolska Region and introduce several activities carried out within the framework of the innovation program for the region. First part of this study presents the characteristic of the Małopolska Region generally and on the basis of selected indicators, among other things, GDP, expenditures on R&D in relation to GDP (GERD); R&D expenditure represents one of the major drivers of economic growth in a knowledge-based economy. As such, trends in the R&D expenditure

indicator provide key indications of the future competitiveness and wealth of the EU. Furthermore, expenditures on R&D costs incurred by the business sector in relation to GDP (BERD); the indicator captures the formal creation of new knowledge within firms. Dates for that analysis were based on Eurostat. The next step is describing impact of the innovation on development of this region and showing connection between them. Dates from Regional Innovation System for Małopolska Region and from other strategic documents.

2. The Małopolska Region

The Małopolska Region is one among 16 regions in Poland located in the south of the country. The region has a population of 3.3 million people (as of 31.12.2012), which represented 8.7% of the population and placed the region at the 4th place in the country. Additionally, Małopolska is one of the richest and well the most developed regions.

According to the Central Statistical Office in Poland, Małopolska has ranked high for years – the 5th place among the voivodeships in the GDP produced. Table 1 below shows the data from 2007– 2011 about the economic situation in the region. When it comes to GDP, in 2011 it was PLN 113,948 mn. In 2011, in Poland, also increased its share in the value of the indicator for the whole country. A very important role is played by Kraków (3% nationwide of GDP). In 2010, Kraków has improved compared to previous years, GDP growth in total and GDP *per capita* compared to other voivodeships [Urząd Marszałkowski Województwa Małopolskiego 2013].

Table 1. Gross domestic production in Małopolska 2007–2011

Specification	2007	2008	2009	2010	2011
GDP in current prices (in PLN mn)					
Poland	1,176,737	1,275,508	1,344,505	1,416,585	1,528,127
Małopolska	86,974 (7.4% PKB of Poland)	95,020 (7.5% PKB of Poland)	99,610 (7.4% PKB of Poland)	104,089 (7.3% PKB of Poland)	113,948 (7.5% PKB of Poland)
GDP <i>per capita</i> (in PLN) Małopolska					
				31,501	34,107

Source: The Central Statistical Office (GUS), <http://stat.gov.pl> (20.09.2014).

Moreover in Małopolska districts at the end of 2012 the number of registered business entities amounted to 343,400 thousand, which is 3.6% more than in the previous year, which is illustrated by a map drawn up by the Central Statistical Office in Kraków (see Figure 1). Małopolska is in the 4th place among all voivodeships in terms of the number of registered businesses. Allowedly, enterprises are the most important business entity because they provide capital resources and create job vacancies. Furthermore, they play very significant role in innovation process. According to

Hargadon and Sutton, enterprises may create their innovations by carrying out knowledge brokering strategy. It is made up of four practices: capturing ideas and conceptions, keeping ideas alive, using active staff cooperation, searching for new uses of old solutions and testing new ideas [Hargadon, Sutton 2000]. Very often they have also investors from abroad which gives a chance of transfer technology and knowledge from more innovation companies.



Figure 1. The number business entities per 1,000 population by counties in 2013

Source: The Central Statistical Office in Kraków, <http://stat.gov.pl> (20.09.2014).

2.1. Characteristic of innovation in the Małopolska Region

The Małopolska Region as a strong academic and research centre possesses an essential potential in generating new technology and a lot of innovations. In the region there are 23 colleges and 5 technological parks (2010), for example: Krakowski Park Technologiczny, Tarnowski Park Naukowo-Techniczny, Chrzanowsko-Trzebiński Park Przemysłowy. Kraków is one of the most popular academic centers in Poland. Yearly there are educated over 200,000 students. In addition in Małopolska is located 10 special economic zones and 15 cluster initiatives. The rates of R&D expenditures (GERD) to GDP between 2002–2011 are 1.4–1.8 Polish average and share of domestic expenditure on R&D of innovative companies in total was 22% in 2011. Małopolska adopted innovation development, principally in IT and

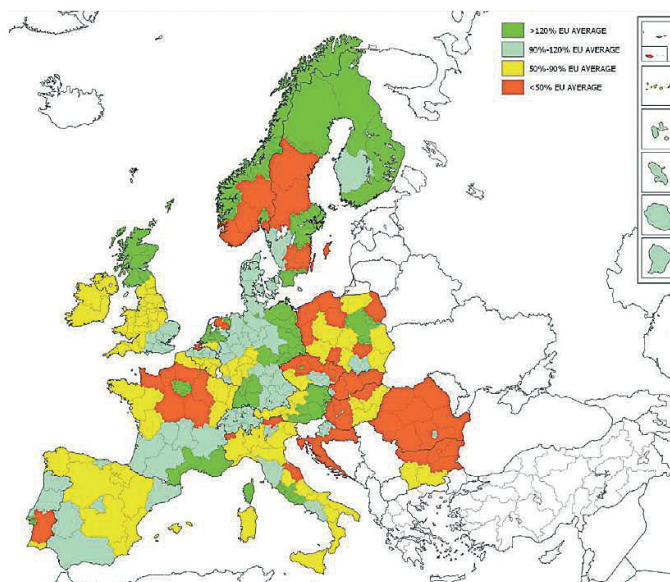


Figure 2. R&D expenditure in the public sector as % of GDP in 2010

Source: Eurostat, <http://ec.europa.eu/eurostat> (20.09.2014).

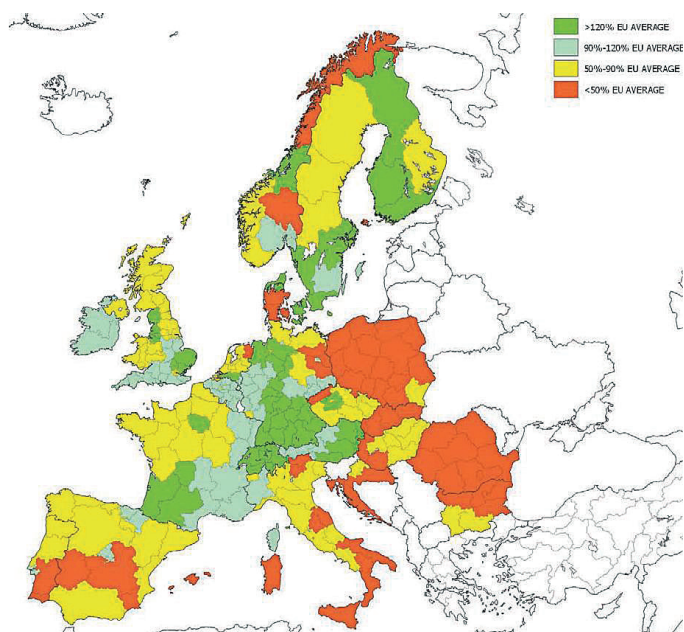


Figure 3. R&D expenditure in the business sector as % of GDP in 2010

Source: Eurostat, <http://ec.europa.eu/eurostat> (20.09.2014).

biotechnology sectors which is convergent with Lisbon strategy. The project has elaborated 14 tasks, which will clearly influence the adoption of modern technology and permit us to restructure the region's economy [*Program Strategiczny*... 2014].

Despite great potential and improvement year by year Małopolska is characterized by unfavourable structure for research and development [Sowa 2008]. Limited amounts of money from the government (Poland spent only 0.42% GDP on R&D in 2010) and inadequate cooperation at regional and international level as well as the lack of good practices and experience in conducting an effective cooperation are the main barriers to the realisation of individual innovation cases. Because of this situation big responsibility lies in private companies but, as European statistic data from EUROSTAT show, Małopolska is a region far behind the EU average.

2.2. Impact of innovation on development of the region

Innovation is the basis for building a competitive advantage worldwide. It is particularly important in regional development because it generates new jobs and brings new products to market that allow strengthening regional brand and attracting new investors. Over 50% of whole sales of the company is constituted by new products. In the Małopolska Region many companies operate that create new solutions and are important elements in the innovation process. Among the most important one can mention Philip Morris and Pliva from USA, Comarch and Wedel from Kraków and also IBM. All of them have innovative centres where they create new products. An innovative region has also a chance to cooperate with other partners from the same business line and transfer knowledge and use experience, which generates new ideas and more competitive human capital. It is worth mentioning that patents which are gained by companies always bring money for further investments [Smallbone 2006].

3. Regional Innovation System of the Małopolska Region

According to the definition of John Stanley Metcalfe RIS is “[...] that set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artifacts’ which define new technologies.”

RIS has recently gained an increased attention. Most important among them is that innovation systems are most easily observed at the regional level. Of significance is also the acknowledgement by researchers of the role of the regional economic milieu and geographical proximity for the innovativeness of firms. Informal routines and norms that are specific to each region are argued to play an essential role in the behavior of firms and the form of collaboration between them [Andersson, Karlsson 2004].

Regardless of a significant role played by Małopolska in the innovation process of the country there are still a lot of things to improve due to fact that, considering

competitiveness, it ranks 184th among 262 regions in Europe. That is why RIS 2014–2020 for the Małopolska Region has many priorities.

Table 2. Indicators of achievement of the main objective of the RIS of the Małopolska Region 2014–2020

Indicator	Unit of measure	The base value in the base year	The target for 2020	Source of data
Expenditures on R&D in relation to GDP (GERD)	%	1.06 (2011)	1.4	GUS
Costs incurred on R&D by the private sector in relation to GDP (BERD)	%	0.27 (2011)	0.5	GUS
Employed in total R&D activities	thousands of people	15.3 (2011)	18.5	GUS
Number of granted patents	pieces	150 (2012)	200	GUS
Number of acquired rights of protection for a utility model	pieces	44 (2012)	64	GUS
The value of exports in Małopolska	billion EUR	7.2 (2012)	9.2	MOG

Source: *Program Strategiczny...* [2014].

Taking into consideration the most important priorities for the Małopolska Region, which are emphasized by indicators, a key role is played by expenditures on R&D, which will be set at 1.4% GDB. What is also important for this region is the costs incurred on R&D by the private sector in relation to GDP. It is estimated that they increase round about 50%. Employment in high-tech businesses are one of the main goals as well.

4. Conclusion

The main purpose of the present paper was to describe the attitude to an innovation system in the Małopolska Region and introduce several activities carried out within the framework of the innovation program for the region. Innovation is perceived as the most important factor which helps to be more competitive and attract new investor and capital in a region.

Małopolska is one of the most innovative regions in Poland. Expenditures on research and development (R&D) in Małopolska are still increasing and place the region in the third position in the country. Moreover the growth rate of Małopolska

and strengthening its internal and external competitiveness in the coming years will determine the development of innovation in the economy of the region. The result is the creation of the Regional Innovation Strategy, which includes the three most important priorities infrastructure development of the knowledge economy, creating demand for innovation and development of information society. Actions implemented in the period 2014–2020 aim at improving the conditions for business, innovation and scientific development of information society and stimulating demand for innovation and strengthening cooperative ties between science and the economy, especially in the areas of regional specialization.

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