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## **Contribution of Universities to Regional Development**

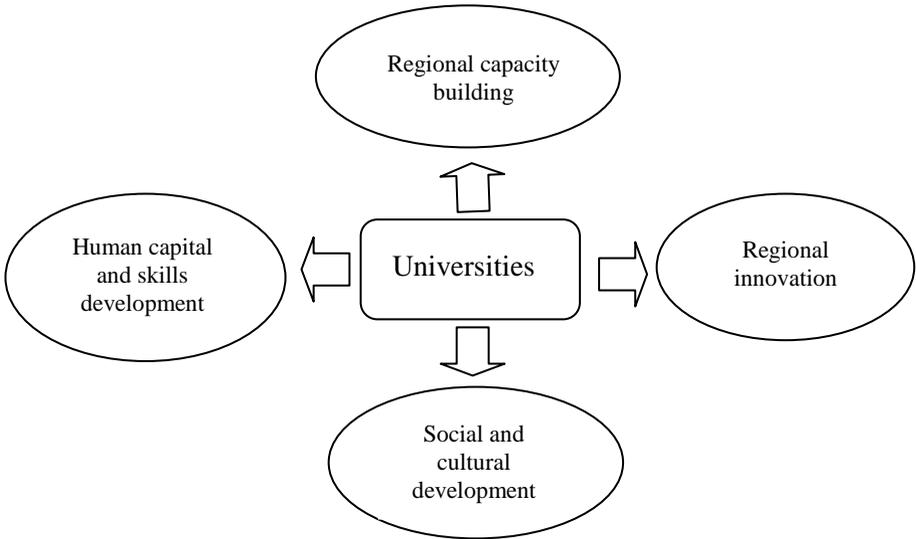
### INTRODUCTION

Knowledge and innovation are of paramount importance in creating the development process. The ability to create and use knowledge for its production and transfer to the innovation processes has become a major factor in market competitiveness. Higher education institutions, according to the concepts of knowledge economy and human capital, play an important role in boosting the region's creativity and creative change. The triple helix model emphasizes the role of universities as one of three actors (along with government and business), which affect functioning of the region. A platform for partnership between the three communities: the regional authorities, academia and business are the Regional Innovation Strategies. The activities of universities in the innovation economy and the links with regional systems of innovation may be supported by the EU Structural Funds. Reducing the innovation deficit between European regions is a key task for the Cohesion Policy. In that context, it invests in four key elements: R&D and innovation; entrepreneurship; and, human capital development. This article aims to study impact of the projects implemented by the universities of Eastern Poland, co-financed by the EU funds, on the innovation of the region.

### UNIVERSITIES AND REGIONAL DEVELOPMENT

There is a growing body of theory and practice about the role of universities in regional development. The contribution that universities are capable of making may be divided into four areas (fig. 1). The main focus on promoting the active engagement of universities in regions has been in terms of their contribution to Regional Innovation Systems. At present, the concept of innovation as a system is taking on importance. While speaking about the systems of innovation [Lundvall, 1992; Nelson, 1993] the impact of wider external institutions on innovation activities of firms and other stakeholders is examined. The emphasis is put on the role of transfer, diffusion of knowledge and technology. Innovations are seen as a dynamic process in which knowledge accumulates in the processes of

learning and interaction. System concepts of innovation shift the focus of public policy towards the interplay of institutions and focus on interactive processes in the creation, diffusion and application of knowledge. The systemic nature is one of the most prominent features of innovation processes taking place in the modern economy. Innovation is the result of cooperation and interaction between different actors, it is the result of systemic, not individual forces. Systemic approach to innovation is particularly promoted by the EU and OECD [Kukliński, 1997].



**Figure 1. Universities and regions**

Source: [OECD, 2007].

Regions are an important arena for the manufacture and transfer of innovation [Ratti et al., 1997]. The Regional Innovation System is a network of linkages and cooperation between the institutions that make up the socio-economic character of the region [Cooke et al., 1998]. The RIS is a network of private and public institutions whose co-operation allows generation, adaptation, modification and dissemination of innovation and new technologies in the region. Higher education institutions play an important role among these institutions. Knowledge diffusion processes of the regional nature occur when the actors involved in the process of innovation (eg, universities, enterprises, government sector) set up close relations leading to the emergence of a feedback effect within the regional innovation systems [Marszałek, 2010].

Innovations are products of knowledge. The level of innovation depends not only on the progress of new technologies, but also the knowledge and skills, or human capital [Klamut, 2011]. The key seems to be human resource development, especially their creativity, because they depend on the achievement in the

competitive struggle. On the quality of human resources in a given area depends whether self-reliance, entrepreneurship and the use of innovation will be possible.

The role of universities in the world today is changing. The history of the evolution of higher education distinguishes three types (generations) for universities: the medieval university, also known as scholastic, Humboldt university and the entrepreneurial university [Wissema, 2009]. Entrepreneurial university – the concept introduced by Clark [Clark, 1998], refers to the operation of the university authorities, which in an entrepreneurial manner respond to signals from the environment (businesses, government, etc.). Entrepreneurial university is the one that seeks to achieve a strong international competitive position in the market for teaching and research, receives benefits from the commercialization of its research activity and, acting on behalf of the environment, obtains tangible benefits in return [Gorzalak, 2009].

The importance of innovation and the universities in this process was reflected in the EU policies which in 2007–2013 focused significant resources on supporting innovation and competitiveness of regions. To maximise the effectiveness of universities in contributing to regional growth, the EU Guide “Connecting universities to regional growth” was designed [Goddard, 2011]. In Poland as well, there are many strategic and programming documents at central and regional levels, indicating the need to build a knowledge economy. Innovation is one of the main objectives of the National Cohesion Strategy 2007–2013 [Ministry of Regional Development, 2007], which has set the direction of development for Poland in line with the renewed Lisbon strategy, and high schools were indicated as significant actors operating on the growth of the country and the regions. The main objective of the Polish National Cohesion Strategy is to create conditions for the improvement of competitiveness of the economy based on knowledge and entrepreneurship, ensuring the increase of employment and the higher level of social, economic cohesion. The NCS is a strategic document setting out priorities and areas of use of the EU Structural Funds (European Social Fund and the European Regional Development Fund) and the Cohesion Fund.

#### THE USE OF EU STRUCTURAL FUNDS BY THE UNIVERSITIES FROM EASTERN POLAND

The Structural Funds of the European Union are hugely important instruments for implementation of all these strategies in Poland. They create favourable conditions for innovation, education and research by encouraging R&D and knowledge-intensive investment and moving towards higher value added activities, increasing innovation capacity and R&D in businesses and strengthening their links with universities and research centres. Significant resources for financing innovation are allocated in two operational programmes (OP): Human Capital (co-financed by the European Social Fund) and the Innovative Economy (co-financed by the Euro-

pean Regional Development Fund). At the regional level the Regional Innovation Strategies are carried out, implemented primarily through the Regional Operational Programmes (co-financed by the ERDF). There is also special programme for Eastern Poland – Development of Eastern Poland (co-financed by the ERDF).

The EU Structural Funds are the main source of funding for the purposes of the Regional Innovation Strategies. The available sources of financing creates ample opportunities for the Polish regions to accelerate the development and transform themselves into modern regions of knowledge and innovation [Bąkowski et al., 2007]. The concept of regions of knowledge and innovation results from the economic theory of learning regions. A strategy for the development of the regions of knowledge and innovation developed by the European Commission is to enhance the research potential of the regions by initiating and developing regional researchdriven clusters.

The Structural Funds can be important reinforcement of development processes in the regions created by universities and may influence the rise of innovative potential of the region. Universities are a major beneficiaries of the EU funds. They use the European funds mainly for: increasing the quality of higher education and adapting it to the needs of the economy and job market, supporting research directions important for socio-economic development of the country and modernization and expansion of infrastructure for scientific research units.

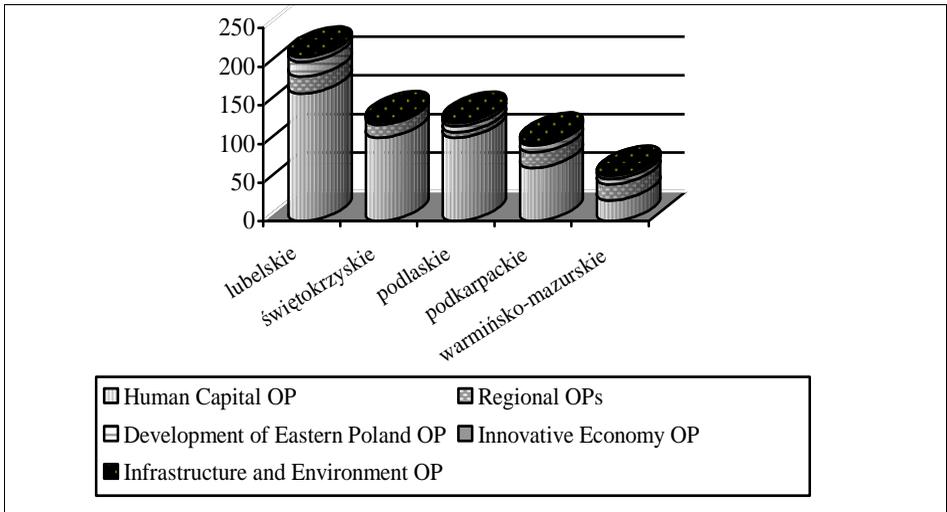
There are ninety institutions of higher education located in Eastern Poland (2011), twenty eight of them – public. These universities have actively been using the EU funds since they became available. In the first programming period (2004–2006) the number of projects was smaller than expected and the existing programmes created opportunity for universities to finance mainly training and consulting projects. In the current period (2007–2013) significantly more resources are available, and the emphasis is primarily on innovation, research, technological development and building a knowledge economy.

Institutions of higher education located in Eastern Poland have implemented operational programmes for 2007–2013 of about 23% of all university projects in Poland valued at over 33% of these projects. Most universities have specialized units dealing with raising funds from the European Union. There are, however, some schools that have not yet obtained any funds from the EU (33 schools). The number and value of projects undertaken by universities in Eastern Poland, by source of funding is indicated in the graphs (fig. 2, 3).

These are the results of the preliminary study as the programmes are in progress. The implementation of programmes, however, is already well underway, and most measures available to universities is near the end. The study is based on data available on the day 31<sup>st</sup> December, 2011. Some trends can be already observable, there are some measures that are more popular among universities, and universities that are the leaders in securing the EU funds for innovative actions.

These statistics do not reflect the overall situation of higher education activity in the implementation of the European projects. Universities often participate in pro-

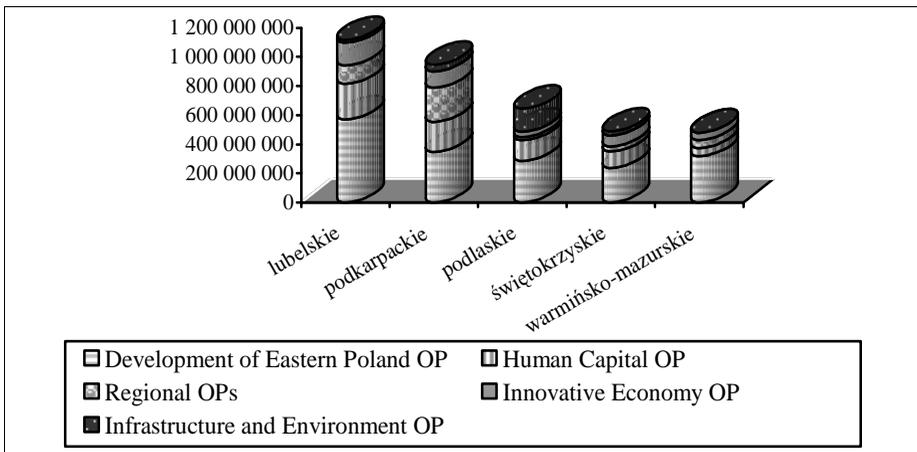
jects as partners (and not coordinators), subcontractors or consultants. Nevertheless, these data provide a picture of the activities of universities in attracting funding.



**Figure 2. The number of projects implemented by universities in Eastern Poland, co-financed by the EU Structural Funds in 2007–2011**

\*only projects where universities have been the coordinators

Source: own elaboration based on data generated from the KSI SIMIK 07–13 National Information System (on the day 31.12.2011).



**Figure 3. The value of projects (EU funding) implemented by universities in Eastern Poland in 2007–2011, in PLN**

\*only projects where universities have been the coordinators

Source: own elaboration based on data generated from the KSI SIMIK 07–13 National Information System (on the day 31.12.2011).

Most projects are implemented under the Human Capital OP, which may be the result of a situation that these are generally “soft” projects, educational, easier (and naturally predestinated) to implement by an educational institution such as university. The reason for this is also the fact that they require a smaller own contribution. Finally, universities (especially private ones) that have less potential and opportunities to focus on research and development activities are more likely to turn to these measures. But in terms of value, most of the projects are implemented under the Development of Eastern Poland OP. The reason for the development of this programme was the additional funding to be granted from the European Regional Development Fund for the five most disadvantaged regions in Poland. One of the main objectives of the Programme is to support the development of universities. Among institutions that have gained the most resources are: Rzeszow University of Technology, University of Warmia and Mazury in Olsztyn, University of Rzeszów, Maria Curie-Skłodowska University.

In order to examine the impact of investments of Eastern Poland universities, co-financed by structural funds, on the innovation of the region, it is worth looking into the types of projects implemented by these universities. The key question is whether the projects are consistent with Regional Innovation Strategies of those voivodships.

Innovative projects implemented by universities can be divided into several categories depending on the type of support. Thus, higher education affect the region’s innovation through:

- extending the educational offer and adapting it to the knowledge economy,
- implementation of research that is important for socio-economic development of the country,
- the commercialization of research, acquisition of patents,
- cooperation with companies and knowledge transfer,
- modernization and expansion of infrastructure for research and teaching science units.

In order to assess the size of the innovation potential of the region, the following measures, inter alia, can be used [Markowski, 2000]: the research potential of regions, measured by the number of research workers, education of regional and local society at university-level, patents granted in the region, the share of industries and high-opportunity sectors in the economy of the region, the volume of foreign investments and their share in the investment in region, the number of business and innovation centers operating in the region. Structural funds used by universities affect the majority of them.

In the operational programs, innovation is one of the major objectives and eligibility criteria of projects. On the one hand it mobilizes to generate innovative ideas, but on the other – makes innovative solutions to be sought in each of even basic infrastructure projects, and professional advisors are involved in demonstrating innovative solutions in every project.

## CONCLUSIONS

The role of universities in shaping regional development policy in Poland is more of a legitimate postulate than the practice act. State universities, benefiting from the privilege of conducting free of charge full-time studies and from stable state funding, are reforming slowly (in contrast to the generally well-managed private universities). The advantage of state-owned universities is their high scientific potential, their weakness – its inefficient use in the economy and regional development [Hibner, 2007]. Entrepreneurship of Polish universities is often directed at the development of paid educational services (which creates the potential for additional earnings for academic staff and university budgets), and the tasks associated with research, cooperation with the economy and technology transfer and commercialization of knowledge, recede into the background.

Thanks to the EU funds this situation is likely to change. The inspiration for a number of academic initiatives is the availability of the EU funds for this type of projects. The new programming period in the European Union (2014–2020), in accordance with the plans of the European Commission should bring a large concentration of financial resources on research, development, innovation, technology transfer and commercialization of knowledge. Following the example of previous years, it can effectively motivate actors in these areas to intensify the innovative actions and activities. A well-functioning network of links and cooperation between public authorities, scientific institutions (including universities) and businesses is needed in order to create regions of knowledge and innovation. Only such a structure supported by different sources of funding is likely to succeed and thus create both competitive and innovative area.

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### *Summary*

Knowledge and innovation are of paramount importance in creating the development process. Higher education institutions, according to the concepts of knowledge economy and human capital, play an important role in boosting the region's creativity and creative change. The triple helix model emphasizes the role of universities as one of three actors (along with government and business), which affect the functioning of the region. A platform for partnership between the three communities: the regional authorities, academia and business are the Regional Innovation Strategies. The activities of universities in the innovation economy and the links with regional systems of innovation may be supported by the EU Structural Funds. Reducing the innovation deficit between European regions is a key task for the Cohesion Policy. The EU Structural Funds are the main source of funding for the purposes of the Regional Innovation Strategies.

This article aims to study the impact of projects implemented by the universities of Eastern Poland, co-financed by the EU funds, on the innovation of the region. A well-functioning network of links and cooperation between public authorities, scientific institutions and businesses is needed in order to create regions of knowledge and innovation. Only such a structure supported by different sources of funding is likely to succeed and thus create competitive and innovative area.

## **Wpływ uniwersytetów na rozwój regionalny**

### *Streszczenie*

Wiedza i innowacje mają ogromne znaczenie w kreowaniu procesów rozwojowych. Umiejętność tworzenia i wykorzystywania wiedzy dla produkcji i przenoszenia jej do procesów innowacyjnych stały się głównym czynnikiem konkurencyjności rynkowej. Szkoły wyższe, zgodnie z koncepcjami gospodarki opartej na wiedzy czy kapitału ludzkiego, odgrywają istotną rolę w pobudzaniu regionu do kreatywności i twórczej zmiany. Z kolei model potrójnej helisy podkreśla rolę uniwersytetów jako jednego z trzech aktorów (obok administracji i przedsiębiorstw), którego działania przekładają się na funkcjonowanie regionu. Platformą partnerskiej współpracy między tymi trzema środowiskami: władzami regionalnymi, środowiskiem naukowym i biznesem mają być Regionalne Strategie Innowacji. Działania uczelni w obszarze innowacyjności gospodarki i jej powiązania z regionalnymi systemami innowacji wspierane mogą być przez fundusze strukturalne Unii Europejskiej. Celem artykułu jest analiza oddziaływania projektów realizowanych przez uczelnie wyższe Polski Wschodniej, współfinansowanych przez fundusze UE, na innowacyjność regionu.