STUDIES OF INNOVATIONS IN WEST REGION OF ROMANIA

STUDII ALE INOVAȚIILOR ÎN REGIUNEA DE VEST A ROMÂNIEI

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Abstract: *In the present paper an analysis of Human resources (HR) in the research Development and innovation (RDI) system from the west part of Romania, between 2000 and 2010 is done.*

Key words: *human resources, research develompent and innovation system, regional analysis*

1. INTRODUCTION

After 1994 when was launched the first "Regional Plan of Technology", responsible for regional policies have shown increasing attention to development of innovation strategies, not only nationally but also at regional level. In recent years, managing projects and innovation regions in Europe have continued to target knowledge-based innovation and expanded activities and the development of regional innovation strategies by providing financial support. By 2008, hundreds of regions have developed their own plans, strategies and innovative tools, sometimes in a strategic framework for rebound, often as an ad hoc process.

Furthermore, previsions for 2007 - 2013 on the programming of development requires political action concepts of innovation policy. However, adoption of effective evidence-based process design and implementation of policies appropriate for a region is not an easy task. It requires the ability to steer the regional authorities responsible for the

development and implementation of regional innovation policies. In this context, we aimed to create special institutional conditions to increase the innovation capacity of the regional economy.

Literature study revealed three main challenges for regional policy makers face in designing and implementing innovation regional policies.First, in the literature review was established that it is extremely important to understand systemic failures in regional innovation systems before adequate justification for regional innovation policies that can be developed. Such an approach requires detailed knowledge of regional actors, networks and framework conditions. Given these characteristics of regional innovation systems often, policy makers have a knowledge of important regions adjacent national regions. However, if this knowledge includes knowledge of the systemic failures of their own regional innovation system can not be predicted a priori. Their knowledge of international performance of regions, in contrast, tends to be limited. There is a lack of information on local features that can be predominantly systemic in a broader perspective.

Literature review has shown that a wide range of regional approach to policy making evidence available, based on nearly two decades of experience in promoting regional public policies. However, until today is the widespread use of the regional assessment and prospecting, and learning policies that go beyond simple comparison of measures. The use of evidence-based methods are more widespread in some Member States, so that it could benefit substantially from learning from international experiences. It seems that a lot of international experience are available, but an overview is missing.

The role of technological RDI and regional policy gained importance over the last 15-20 years. Consequently, at different levels have taken measures individual policies to boost local technological potential. More recently, since the 1990s, emphasis shifted to policies that take a comprehensive approach based on the concept of regional innovation systems (Koschatzky, 2001). These approaches are based largely on raising regional innovation policy at the strategic level of individual interventions. In many cases, regions have now begun to develop "regional innovation strategies", which had to be translated in various actions and measures which unfortunately was not so successful. The reasons are multiple. As a cross domain policy, innovation policy raises coordination problems can be tackled at a strategic level to the surface then the implementation in daily life. Moreover,

innovation is a highly interactive process, the informal institutions and implicit knowledge plays a central role. This area remains undeveloped, although policy measures taken. At the same time, the rate of change in many areas of the economy and society require swift and agile political system, so little time to coordinate intensivă stays, resulting in a matrix and complexă specifică, fragmented policy measures. Consequently, the more pervasive and growing strategic policy intelligence is clearly-needed difficult.(Stahlecker T., H. Kroll, E. Baier, 2010: source: www.technopolis-group.com,http://www.proinno-europe.eu/metrics,)

Regional Innovation Monitor present a need to provide a systematic repository of information and analysis on the latest developments in the regional innovation policies in Europe.

All initiatives related to infrastructure, human capital, whether implemented by national or regional authorities have in common that regional factors of production are the basis for regional networks of innovation and promotion (Koschatzky, 1997) and that regions compete against each other investments in science and technology, both public and private.

Thus (Koschatzky & Gundrum, 1997), promote three tasks of technological regional innovation as follows:

1. To carefully complete the work and regional resources for development and application of new technologies (regional innovation conditions);
2. To coordinate and interconectezee these resources in regional innovation networks, bringing together all relevant actors in industry, science and politics, and
3. To integrate the regional networks of national and international groups to develop production technology and by creating active interfaces and over-promotion of regional cooperation.

Creation of regional innovation systems research and is now a clear policy for technology innovation (Koschatzky 2001: 10). Role of the regions, not passively.They have become active players in the national innovation system, rather than mere recipients of public funds (Dohse, 2007). Regions must be creative to succeed in competition interregională.

Regional innovation policy is more than the adoption of certain micro-level policy tool (Kulke, 2004). In fact, they constitute a coordinated package of measures aimed at political targets one or more (for example, to raise regional employment, regional competitiveness and regional technological

capabilities). In parallel, are provided incentives to promote attracting new investment, building physical and institutional infrastructure and transport and communications networks. In order to improve regional policy measures takes place funding of research institutes, technology, technology transfer centers with specific research and development innovation activity. There are proposed innovation financing, joint research activities which are among the most popular approaches. In addition to these standard measures, policymakers have taken account of spatial and cultural proximity between firms and supporting institutions and socio-economic structure of existing and potential RDI in a country. For example, as technology and knowledge intensive industry has a recognized tendency for cluster, network and such clustered approach were applied fairly large (Sternberg, 2003). Regarding regionalization regional portfolio of tools related to innovation, we can see that they are clearly influenced by the strengths of the regions, both in terms of institutional and inovării. This observation is consistent with the most important objectives of general politics of innovation strengths to enhance technology / innovation of a regional (or national) innovation system, rather than using innovation policy portfolio of tools that the balanced regional development (goal-oriented hip). Areas are usually regions with an effective regional innovation, characterized by strong institutions are able to continuously adapt to changing framework conditions and adapt the tools of innovation portfolio. Thus, regions of strong (and strong regional players) are believed to have an impact on proiectării instruments to support innovation in their region and possibly on a national level.

2. METHODS

It will be presented in the next part of the paper , a regional study of innovation in romania and in particular in the west part of the country between 2000 and 2010.

Studing research - development and innovation (RDI) activity in Romania, can be done on a regional research, on the macroregions , development regions and counties.

This study can be done on the on a regional research of human resources from RDI

3. RESULTS AND DISCUSSIONS

From the Table 1 with human resources involved in RDI from a regional research , done on the macroregions , development regions and counties we can draw some conclusions:
The study was conducted during 2002-2008 period in which minimum value of human resource (HR) was registered in 2002 as 38,433 and the maximum value of 43,502 employees in 2008.

*TABLE1. **:** Human resources from RDI from a regional research , done on the macroregions , development regions and counties.*
Source: Romanian Year Book 2009:
http://www.insse.ro/cms/files/Anuar%20statistic/13/13%20Stiinta,%20tehnologie%20si%20inovare_ro.pdf

Macroregion/ Development region / County	2002	2003	2004	2005	2006	2007	2008
TOTAL	38433	39985	40725	41035	42220	42484	43502
MACROREGION 1	7463	6221	4810	5109	6349	6564	7043
MACROREGION 2	5302	4860	5090	5602	6062	6357	6102
MACROREGION 3	20986	22795	24711	25900	25731	24736	25850
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MACROREGION 4	4682	6109	6114	4424	4078	4827	4507
Region Sud - Vest Oltenia	2757	2841	2799	2569	2491	2506	2321
Region Nord - Vest	3183	2742	2302	2690	3484	3923	4146
Region Vest	1925	3268	3315	1855	1587	2321	2186
Arad - County	38	379	353	80	36	691	661
Caraş-Severin- County	225	291	303	288	147	129	148
Hunedoara- County	478	542	560	545	521	494	462
Timiş- County	1184	2056	2099	942	883	1007	915

In terms of HR variation on macro region we can see as follows:
- The Macro region 1, values for HR in 4810 which is 12.52% of the total recorded in 2004 and 7463 RU which represent 17.16% of the total in 2002,
- The Macro region 2 , the values for HR varied between 4860 in 2003 which represented 12.65% of total HR 6457 registered in Romania and in 2007, adicã14.61% of total.

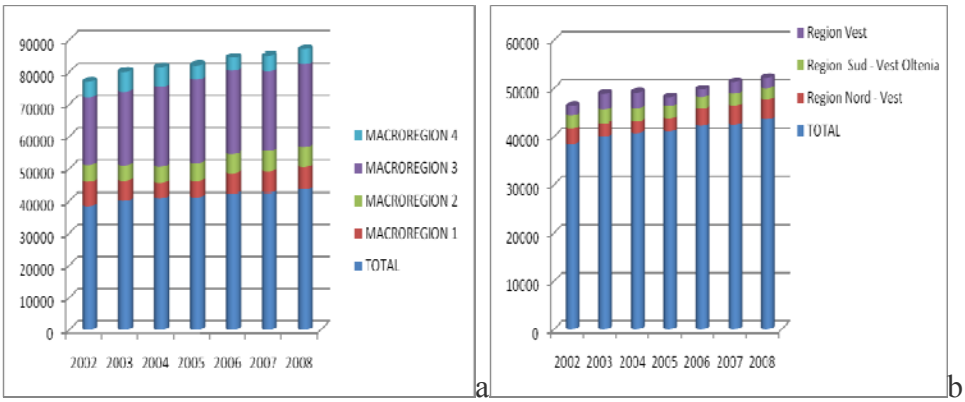
- The Macro region 3, the minimum value of RU, the RU 20986 ie 54.60% was registered in Romania in 2002 and a maximum of 25,900 recorded in 2005, ie 59.54% of HR in Romania.
- The Macro region 4, RU varied between values: 4078, which represented 10.61% of total RU registered in Romania in 2006 and 6114 recorded in 2004, ie 14.05% of RU registered in Romania.

Macro 4 is composed of South-West Oltenia counties: County, Florida, Mehedinti, Olt and Valcea , West Region is composed from counties Arad, Caras-Severin, Hunedoara and Timis.

Macro human resources registered in the West region was in range of 4078 , values recorded in 2006 and 6114 recorded in 2004.

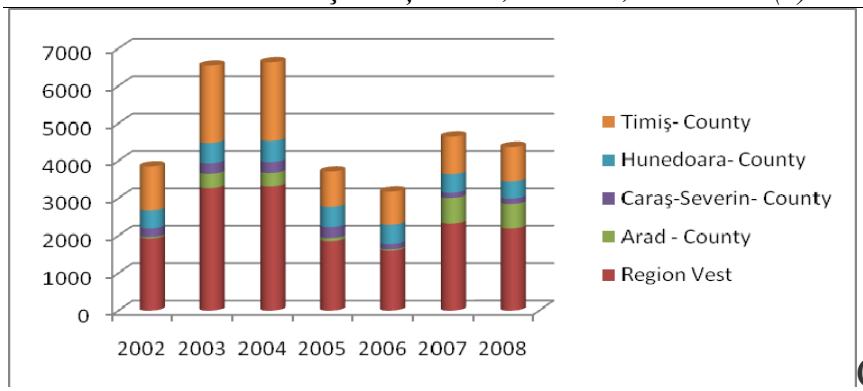
In the South West Oltenia, human resource values range from 2,321 employees representing 45.78% of values recorded in macro 4 and 2841 employees representing 61.08% recorded in 2006.

The following is a graphical presentation of human resource (HR) for macro-regions, region of development and counties from western part of Romania.



a b

Figure 1: Variation of HR in period 2000-2010 done on macroregions, development regions from Western Romania. ; a) Variation of HR on macroregions; b) Variation of HR on regions; Authors calculus.



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Figure 2: variation of HR in period 2000-2010 done on Western regions of Romania. Author's calculus.

The Western region varies between 38.92% human resource registered in 2006 and 54.22% recorded in 2004, compared to the values recorded in the Macro region 4.

Maximum values for human resource in the West Region are registered jud.Timis values ranging between 883 salariarti in CDI that is 20.30% in 2008 and 2099 employees representing 34.33% registered in 2004, recorded values to those of Macro region 4 and 41.86% in 2008 and 63.32% in 2004 compared to the values of the Western region.

The minimum values are registered in Arad county has 36 employees registered in CDI in 2006 which represents 0.81% of values recorded Macro region 4 and 1.97% of the values recorded in the Western Region and the maximum of 691 employees in R & D in 2007 which registered represents 14.67% of values recorded at Macro region 4 or 30.24% of values recorded at the western region.

4. CONCLUSIONS

The role of technological RDI and regional policy gained importance over the last 10 years.

Human resources registered in in the Western region incresed in the period between 2000 and 2010 . Arad county has the minimum values of human resources involved in RDI sector and Timis county has in all the studied period the maxumum value of HR involved in RDI , in the same period.

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