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Regional benchmarking process in cognac project (Coordination of RDI policies and their coherence with other policies in the Newly Acceded Countries)

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Abstract: In order to achieve the Lisbon objectives and create a knowledge based society, Europe needs to increase and improve investment in R&D. This requires improving the effectiveness and coherence of research policies at European, national and regional levels. The first cycle of application of the open method of co-ordination (OMC) to the 3% objective provided an overview of the Member States policies in a number of areas, facilitated mutual learning and led to a number of policy recommendations adopted by CREST in October 2004.

The current regional benchmarking practice is made within a 6th Framework Programme project called Cognac, which is the acronym for **Coordination of R&D&I policies and their coherence with other policies in Newly Acceded Countries**. The project is focusing on two priority subjects: public research spending and policy mixes and SMEs and research. The project was supported within the first cycle of the RTD-OMC NET call.

The benchmarking exercise tries to show the differences in the performance of participating regions. It supposed to choose the best regions at NUTS II level by the two priority topic of the project: “Public research spending and policy mixes” and “SMEs and research”. Geographically the analysis covers the area of the eight partnering regions.

Key words: Benchmarking, regional benchmarking, economic and research performance

1. Introduction

The strategic objectives of the project was to increase the effectiveness and coherence of research policies at European, national and regional level by the coordination and exploitation of the synergies and results of the parallel programming activities on the basis of mutual learning between the participating regions. The project aimed to achieve this objective through analyzing, comparing and benchmarking of the regional processes on the field of R&D&I policies in the partner regions.

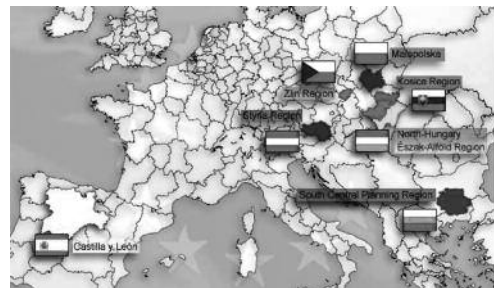
The current benchmarking exercise had been conducted as one of the workpackages of the project: Workpackage 3: Benchmarking of R&D&I policies and activities. This analysis and benchmarking phase served as basis (input) for other activities of the project, like preparing joint policy action plan for the partner regions related to the specific field of the project; providing recommendations on different level (regional, national or EU) with the aim of strengthening the national/regional level R&D&I systems and also making a more effective system of R&D&I financing.

The final result of the work accomplished is a state of the art study that comprises from two main parts: first of all a benchmarking exercise of some chosen performance indicators, second a comparison study of the regional/national innovation background of the participating regions.

Regions analyzed in the project:

- Castilla y Leon (Spain)
- Kosice Region (Slovakia):
- East Slovak Region

- Észak-Alföld (Hungary)
- North Hungary (Hungary)
- Malopolska (Poland)
- South Central Planning Region (Bulgaria)
- Styria (Austria)
- Zlín Region (Czech Republic): Stredni Morava



In the project, two types of regional stakeholders participate from these given regions: one regional authority responsible for the regional innovation strategy planning and implementation and one regional stakeholder (research institute or tertiary education centre).

2. Material studied, area descriptions, methods, techniques

Benchmarking is a technique in which a company measures its performance against the best in class companies, determines how those companies achieved their

performance levels and uses the information to improve its own performance. It is an improvement process in which an organisation compares its performance to the “best in class”, search the reason how it reaches that performance and try to learn from it. (www.12manage.com)

This tool can be used not only in the cases of enterprises, but between any actors, entity who want to measure performance. The word benchmarking comes from craftsmen who chiselled a mark on the surface of their worktable to make the length measurement easier comparing their object to this scale and using the worktable as the origin for the measurement. The benchmarking – as an analysing process – derives from the reconstruction of Japan industry after the Second World War. Japan experts visited thousands of American and Western European companies to see the products, processes and new technologies, than they adopted and developed them.

Regional benchmarking means that a specific region conducts a benchmarking process in order to improve its regional performance. Regional benchmarking is a powerful strategic policy tool which contributes to the different aspects, specific topics of development of regional economy. Typical steps in a benchmarking process: 1) identification of challenge, 2) preparation of the benchmarking exercise (defining budgets, tasks, and responsibilities), 3) information gathering, 4) analysing the data, 5) develop conclusions and 6) defining a plan for the implementation (Iurcovich, 2006).

In the context of national research policies, benchmarking can be an instrument for mutual learning and increasing R&D&I performances. Learning from the best can provide new ideas, solutions for the members in the benchmarked group. It can stimulate the application of new methods and practices (e.g. new call for proposals or programmes). As Key Figures, 2001 mentioned: “Benchmarking does not involve transfer of practices directly from one context to another, but rather draws on experience elsewhere to stimulate new thinking about policy implementation. In this way benchmarking can improve national policies, instruments and practices, or open totally new possibilities that induce higher future performances.”

In the COGNAC benchmarking the starting point is a general comparison of the regions by some selected performance indicators. Following, for the aim of a deeper analysis, there are two priority topics in the project: “SMEs and research”, and “public research spending and policy mixes”.

During the benchmarking process the project team faced different type of problems. First of all, statistical spatial problems: in the project consortium eight regions were involved. The analyzing work covers these eight regions, the best-in-classes were defined from this restricted area thus, the group of the benchmarked regions is limited, as well as the validity of benchmarking results.

Another methodological question was how to benchmark policies. The project team met always the same problem: how can we benchmark policies, projects, qualitative descriptions and indicators and how can we avoid subjectivity. To solve this problem the consortium decided for the case of COGNAC regions i) to use only quantitative indicators which can be

assigned to the two topics (public research spending and policy mixes and SMEs and research), and based on the timetable of COGNAC and also taking into account the main objective of the project ii) these indicators are considered as performance indicators assigned to the adequate topic iii) the benchmarking study focuses on two main needs: the benchmarking of the performance of the regions, and the benchmarking of the effectiveness of R&D&I policies.

Second, Castilla y Leon, North Great Plain, North Hungary, Malopolska, South Central Planning Region and Styria are regions on NUTS-2 level, but Zlin Region and Kosice Region are from different territorial statistical level: NUTS-3. In the COGNAC project every region is analysed on its own level, but the benchmarking process is an exception. During the elaboration process of the study the works were on NUTS-2 level, and in case of the two regions from lower statistical levels the analysis focuses on the referring NUTS-2 regions that contain them. It is due to the fact that there are no statistical data on some indicators on NUTS-3 level, and regions from different statistical levels have highly different performance, therefore the comparison of them does not produce realistic results. So, in the benchmarking exercise, Kosice and Zlin Region is represented by their relating NUTS-2 regions: East Slovak Region and Stredni Morava.

The calculated results don't reflect on the general performances of the participating regions. The benchmarking results are valid only in the environment of this project according to the 2 specific topics of the project, because they are based on a small number of indicators selected.

In the COGNAC project by each performance indicator the ranks of the regions had been determined and the “best in class” was selected by the aggregation of the rankings of the region. In this way, it could be avoided that different basis of the indicators are compared. As a result only the regional performance results are taken into consideration.

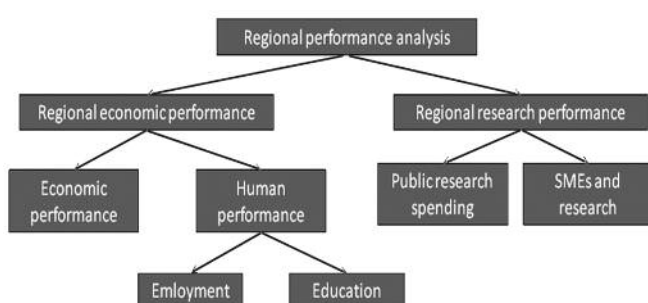
For the analysis primary and secondary research had been conducted. For the secondary research work Eurostat databases had been used and primer research served as a basis for the comparison study. The benchmarking exercise is focusing on performance indicators chosen by the consortium and divided on 2 main parts: regional economic performance and regional research performance.

The comparison study covered the following areas: R&D&I policies, legal background, initiatives, activities, projects, Regional Innovation Strategy priorities, information systems and regional/national SWOT and technology foresight and top technology areas and branches. As well as the comparison is made on the different regional/national innovation systems, trying to find the strength and the weaknesses of the diverse systems.

3. Results and discussion

As defining the pretext to the performance of the single regions in R&D, first we took a look on their general economic situation. The partner regions have quite different

economical, geographical and historical background. These eight regions accessed to the European Community in four steps and in 21 years (Spain accessed in January 1986, Austria in January 1995, Poland, Czech Republic, Slovakia and Hungary in May 2004 and Bulgaria in January 2007). The analysis of the Regional Economic Performance covers economic growth data of the 8 partner regions and includes various other economic and demographic statistics to provide a better picture of regional performance and trends. Regional economic performance is divided on two subtopics: economic performance and human performance. The indicators of these two groups will give the final results of the regional economic performance. Regional human performance contains two subtopics as well: one on labour market and on education and training.



The following indicators describe the group of regional economic performance:

- 1) GDP at current market prices, Year: 2005, Form: purchasing power parities per inhabitant
- 2) Average real growth rate of regional GDP at market prices at NUTS level 2 – percentage change on previous year Year: 2000–2005 Form: %
- 3) R&D intensity. Gross domestic expenditure on research and development (GERD) in the ratio of GDP. Year: 2003. Form: %.
- 4) Average patent applications per million inhabitants. Patent applications to the EPO per million inhabitants, Year: 1999–2003. Form: pieces.

Three indicators belong to the chapter of Labour Market:

- 1) Changes in population density. Changes between 2000–2005 in the ratio of the first year. Year: 2000–2005. Form: %.
- 2) Average unemployment rate. Average unemployment rate for age 15 years, Year: between 2000 and 2005. Form: %.
- 3) Employment in knowledge-intensive services. Employees in this field in the ratio of total employees. Year: 2005. Form: %.

Three indicators describe the topic of Education:

- 1) Population with tertiary education. In ratio of 25–64 age class. Year: 2005. Form: %.
- 2) Population with secondary education. In ratio of 25–64 age class. Year: 2005. Form: %.
- 3) Population with lifelong learning. In ratio of 25–64 age class. Year: 2005. Form: %.

Table 1: Summary of the regional economic performance

Indicator name	Castilla y Leon	East Slovak Region	North Great Plain	North Hungary	Malo-polska	South Central Region	Styria	Stredni Morava
GDP at current market prices	2	5	7	6	4	8	1	3
Average real growth of GDP 2000–2005	6	4	2	3	7	1	8	5
R&D intensity	2	6	5	7	3	8	1	4
Average patent applications per mill. inhabitants	2	5	3	4	6	n.a	1	7
Population with tertiary education	1	7	6	4	3	8	2	5
Population with secondary education	8	2	6	5	4	7	3	1
Population with lifelong learning	2	7	6	5	4	7	1	3
Unemployment between 2000–2005	6	8	2	4	5	7	1	3
Changes in population density	3	2	6	4	3	7	1	5
Employment in k. 1. services	5	4	2	3	6	8	1	7
SUMMARY	37	50	45	45	45	61	20	43
Position	II	V	IV	IV	IV	VI	I	III

(Designed by the author)

Table 2: Summary of research performance

Indicator name (year, form)	Castilla y Leon	East Slovak Region	North Great Plain	North Hungary	Malo-polska	South Central Region	Styria	Stredni Morava
Public research spending and policy mixes								
HERD and GOVERD in the ratio of GDP (2003)	4	7	3	5	2	8	1	6
HERD and GOVERD in the ratio of GERD (2003)	3	4	5	7	6	8	2	1
Researchers by governmental and higher education sector (2004)	3	7	6	4	5	8	1	2
R&D personnel by governmental and higher education sector (2004)	4	5	7	3	8	6	2	1
Summary	14	23	21	19	21	30	6	10
Position (public research)	III	VI	V	IV	V	VII	I	II
SME and research								
R&D expenditure by firms (2003)	3	6	5	7	4	8	1	2
BERD in the ratio of GERD (2003)	3	4	5	7	6	8	2	1
Researchers by sector of performance (2004)	2	6	5	5	4	7	1	3
R&D personnel by sector of performance (2004)	3	6	7	5	4	8	1	2
Summary	11	22	22	24	18	31	5	8
Position (SME and research)	III	V	V	VI	IV	VII	I	II
Final ranking	III	VI	V	V	IV	VII	I	II

(Designed by the author)

The second part of the benchmarking exercise on regional research performance is divided into two parts. Four indicators describe public research spending and policy mixes:

- 1) HERD and GOVERD (public research) in the ratio of GDP: Government and higher education sector R&D expenditure in the ratio of GDP. Year: 2003. Form: %.
- 2) HERD and GOVERD in the ratio of GERD: Government and higher education sector R&D

expenditure in the ratio of total R&D expenditure; Year: 2003. Form:%.

- 3) Researchers in the public sector. Researchers in the public sector in the percentage of total number of researchers. Year: 2004. Form:%.
- 4) R&D personnel in the public sector. R&D personnel in the public sector in the percentage of total number of researchers. Year: 2004. Form:%.

Following indicators had been assigned to the SMEs and research subgroup:

- 1) R&D expenditure by business enterprise sector: Business enterprise sector R&D expenditure in the ratio of GDP. Year: 2003. Form:%.
- 2) BERD in the ratio of GERD. Business enterprise sector R&D expenditure in the ratio of total R&D expenditure; Year: 2003. Form:%.
- 3) Researchers in the business sector. Researchers in the business sector in the percentage of total number of researchers. Year: 2004. Form:%.
- 4) R&D personnel in the business sector. R&D personnel in the business sector in the percentage of total number of researchers. Year: 2004. Form:%.

4. Conclusion

Although by the analysis of the selected indicators Styria region turned out to be the „best-in-class” region, the COGNAC consortium decided not to benchmark only against the best-in-class region, but to benchmark against all „good practices”. The aim of the regional benchmarking exercise is to improve a region’s performance. This exercise is usually followed by the selection of some good practice initiative on the selected fields and the transfer of these good practices. As Styria’s current initiatives and measures related to RDI have a stronger financial scale thanks to its stronger

economic performance, the consortium decided that from the project point of view, it is more interesting to select good practices from each region. As a result, good practices had been collected from all participating regions. The focus of the good practices had been the two priority topics and was determined as well by the results of the benchmarking and the comparison study.

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